

AKROTIRI PENINSULA ENVIRONMENTAL MANAGEMENT PLAN

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1. Introduction

The aim of the Management Plan will be to manage and protect the important environmental features of Akrotiri Peninsula included in the Ramsar and Special Protection Area designations for Akrotiri and the candidate Akrotiri Special Area of Conservation.

The obligation for the management plan is statutory and derives from the Protection and Management of Nature and Wildlife Ordinance 2007 and the Game and Wild Birds Ordinance 2008. The requirement under this legislation is to protect biodiversity through the conservation of natural habitats, flora and fauna by maintaining or restoring their favourable conservation status.

The management plan will mirror the equivalent process in the RoC for designated NATURA 2000 sites; therefore, it will, inevitably, work to the requirements of the relevant EU Directives and guidance.

The management plan should apply the precautionary principle, which requires that the conservation objectives of the SPA / SAC prevail where there is uncertainty. In particular, according to EU guidance, where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

1.1. Previous studies

In view of its environmental, historic, geological and other interest, the area has been subject to many environmental studies on various important features. These studies will be collated and used in the Management Plan.

1.2. Area

Akrotiri Peninsula is the southernmost part of the island of Cyprus. It is bounded roughly by northing 34° 34' and 34° 39' and easting 33° 03' and 32° 54'. Most part of it is situated within the Sovereign Base Area of Akrotiri, only a few kilometres to the southwest of the city of Limassol. There are several access routes to the peninsula from mainland, including an asphalt road (Akrotiri – Kolossi) and several earth tracks. Access to various coastal parts of the peninsula is also available by sea.

Akrotiri Peninsula covers roughly 60 Km². It includes a southern plateau with a maximum elevation of just over 60 metres. The northern part lies below 10 metres elevation, covered by alluvial deposits. Its middle is occupied by a Salt Lake, which lies below the sea level with a minimum elevation of -2.7 metres. Its southern and western parts are exposed to prevailing southerly/westerly winds, whereas its eastern part is sheltered most of the time.

The peninsula includes military installations such as RAF¹ Station Akrotiri and satellite communication sites, the built-up area of Akrotiri village, agricultural plantations, forest, but also an internationally important wetland complex.

The latter comprises Akrotiri Salt Lake and a number of adjacent internationally important saline and freshwater habitat types, including salt marsh, permanent and seasonal saline lagoons, sand flats, freshwater and saline reed beds and freshwater marsh.

It is the largest aquatic system in Cyprus, and one of the very few major Salt Lakes within the eastern Mediterranean in semi-natural condition that exhibits a wide range of saline and freshwater influences.

It has an outstanding ecological and biodiversity value and supports an appreciable number of rare, vulnerable or endangered species or subspecies of plant or animal that are important for maintaining the biological diversity of the eastern Mediterranean biogeographic region.

It also supports an internationally important number of migratory birds providing them with a significant resting, breeding and feeding habitat. Although the site has so far survived in a mostly natural state next to the city of Limassol, which is the second largest and one of the most rapidly developing cities in Cyprus, it is under constantly intensifying threats from human activities.

1.3. Inhabitants

Akrotiri village has approximately 800 inhabitants. It is the only community in Cyprus located entirely within the Sovereign Base Areas. Many of its inhabitants are employed at the Base, others are engaged in agriculture and farming and some work in Limassol.

Approximately 1300 people live within RAF Akrotiri Station. This comprises members of the Army, RAF, UK Based Civilians and their dependents.

1.4. Stakeholders

The following stakeholders have an interest in the peninsula or are involved in its management – the list is not exhaustive:

¹ Royal Air Force

- Relevant British Forces Cyprus Departments
- Akrotiri Community Council
- Akrotiri Merra Committee
- Asomatos Community Council
- Zakaki Community Council
- Zakaki Merra Committee
- Cherkez Community Council
- Asomatos Community Council
- Restaurant owners at Lady's Mile
- Bishopricks of Limassol and Kition
- Lanitis Farm
- Cyprus Fassouri Plantations Ltd
- Amagio Enterprises Ltd
- Amalthia Trading
- Mayor of Limassol
- District Office of Limassol
- RoC² Antiquities Department
- RoC Town Planning and Housing Department
- RoC Lands Department
- Water Board of Limassol
- RoC Land Consolidation Department
- RoC Environment Department
- RoC Game Fund
- RoC Department of Forests
- RoC Fisheries and Marine Research Department
- RoC Agricultural Research Institute
- RoC Veterinary Services
- Sewerage Board of Limassol
- Cyprus Ports Authority
- Cyprus Electricity Authority
- Cyprus Telecommunications Authority
- Cyprus Tourism Organisation
- Birdlife Cyprus
- Terra Cypria
- Akrotiri Environmental Club
- MEDASSET³
- Cyprus Wildlife Society
- Turtlewatch Akrotiri
- Akrotiri Sub Aqua Club
- The University of Cyprus
- Frederick University
- Cyprus Technical University

1.5. Methodology

The Environmental Management Plan comprises the following sections:

- Legislation and policy which apply to the SBAs
- Nature conservation designations

² Republic of Cyprus

³ Mediterranean Association to Save the Sea Turtles

- Land ownership, zones and uses
- Nature conservation interest and sensitivity
- Historic environment
- Hydrology
- Landscape
- Impact of land uses on important features and current management arrangements and controls
- Objectives
- Proposed actions

The recommendations of each section have been collated and de-conflicted to form an overall action plan. The recommended actions will go through a formal consultation process and agreement with the relevant stakeholders.

Management Orders under the Protection and Management of Nature and Wildlife Ordinance and the Game and Wild Birds Ordinance will then be made to prohibit damaging operations to designated sites and to require the undertaking of activities which are necessary for the favourable management of the sites.

The management plan will have a holistic approach which will help meet the obligation for cumulative impact assessment.

Valuable information and advice on the drawing up of the management plan was received from departments of the RoC, NGOs⁴ and individual experts.

The management plan covers the whole of the peninsula, as shown on map 1, although certain issues will inevitably extend beyond these boundaries. Also, although the military interest on the peninsula, outside RAF Akrotiri, is addressed to some degree in this plan, military activities and the management of the military estate will be covered in detail in the Integrated Rural Management Plan currently under preparation, which will go through stakeholder consultation in due course.

⁴ Non Governmental Organizations



Map 1: Area covered by Management Plan

2. Legislation

The SBAA⁵ is obliged under Appendix 'O' to the 1960 Treaty of Establishment to replicate as far as possible the legislation of the RoC. This also applies to environmental protection and the SBAA has already mirrored the key RoC Laws aimed at preserving environmentally important sites.

BFC⁶ are bound by the SBAA environmental legislation as per the Secretary of State for Defence Policy Statement and by UK environmental legislation where the standards set are higher. In addition, BFC has an obligation to implement MOD⁷ sustainable development policies. Exemptions from the provisions of the legislation are only sought when they are necessary to maintain operational capability.

Where exemptions are granted, processes and procedures equivalent to those required by legislation are to be implemented where practicable.

2.1. Sovereign Base Areas Ordinances

The list below covers the main environmental and land use Ordinances that are in force in the Areas. Please refer to the SBA Legislation Index on the SBA Website (http://www.sbaadministration.org/home/legislation/20100101_SBA_LEG_INDEX_U_JC1.htm) for a complete list of all the Ordinances and Public Instruments which are in effect in the Areas.

⁵ Sovereign Base Areas Administration

⁶ British Forces Cyprus

⁷ Ministry of Defence

2.1.1. Game and Wild Birds Ordinance 21/2008

The Game and Wild Birds Ordinance (21/2008) broadly replicates the Protection and Management of Game and Wild Birds Law (152(I)/2003) implementing the provisions of the European Directive 2009/147/EC on the conservation of wild birds.

The designation of SPAs⁸ was made under this Ordinance. Following the designation, management and protection measures must be prescribed which may include the prohibition of certain activities, the requirement to undertake certain activities and the establishment of an environmental management plan. The conservation measures prescribed can cover adjacent areas beyond the SPA boundaries.

The Ordinance stipulates that any proposed project, which may affect an SPA, is subject to an appropriate assessment, which must evaluate the implications of the project on the conservation objectives of the SPA. In broad terms, projects may only be approved if they will not have an adverse effect on the integrity or the character of the SPA, but the legislation allows for certain overruling procedures as well. Annex B Chart explains the process to be followed for the Appropriate Assessment.

Conservation objectives for the Akrotiri SPAs are set in this Management Plan to facilitate the Appropriate Assessment process.

In addition to the designation and management of SPAs, the Ordinance protects wild birds by prohibiting a number of damaging activities such as the deliberate disturbance of any wild bird in its natural range or the intentional pursuing, killing or capturing of a wild bird. The Ordinance also regulates hunting of game species.

2.1.2. Protection and management of Nature and Wildlife Ordinance, 26/2007

The Protection and Management of Nature and Wildlife Ordinance (26/2007) broadly replicates the RoC Protection and Management of Nature and Wildlife Law (153(I)/2003) implementing the provisions of the European Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

The key objective of the Ordinance is the maintenance or restoration to favourable conservation status of important natural habitats and species.

The Ordinance makes provision for the designation of SACs⁹ for habitats and species of flora and fauna. The designation of candidate SACs in the SBAs is still pending. Once the designation is completed, management and protection measures must be prescribed, which may include the prohibition of certain activities, the requirement to undertake certain activities, the taking of conservation measures and the establishment of an environmental management plan.

The Ordinance requires that any proposed project which may affect an SAC is subject to an appropriate assessment which must evaluate the implications of the project on the conservation objectives of the SAC. Generally, the project may only be approved if it will not have an adverse effect on the integrity or the character of the SAC, subject to overriding under certain conditions.

The requirement for an appropriate assessment also applies to candidate SACs in order to safeguard their favourable conservation management as per the Administrative Secretary's Policy Statement of 2007, attached as Annex A. At present no regulations have been made by the RoC to provide

⁸ Special Protection Areas

⁹ Special Areas of Conservation

guidance on the Appropriate Assessment process. Until such regulations are made, the SBAA is using EU and UK Guidance Documents.

Conservation objectives for candidate SACs at Akrotiri Peninsula are set in the Management Plan (section 15.1) to facilitate the Appropriate Assessment process.

The Ordinance also contains prohibitions in relation to protected species of flora and fauna. For example it is prohibited for any person to destroy or disturb any breeding site of a protected species of fauna or to deliberately pick or collect any protected species of flora.

There is a requirement under the Ordinance for the Chief Officer to prepare a report every six years on any conservation measure taken or any management plan established in relation to any of the habitats or species included in Schedules 1 and 2 and on their effectiveness on the conservation status of the habitats or species.

2.1.3. The Environmental Impact Assessment Ordinance, 26/2010

Projects (whether or not requiring a building permit and including public projects) belonging in the Schedules to the Ordinance cannot be carried out without an environmental approval from the Chief Officer. Such projects require an Environmental Impact Assessment or a Preliminary Environmental Impact Assessment Report. Depending on the impacts of the project, the Chief Officer may refuse approval or approve the project and impose conditions. Military projects may be exempted from the provisions of the Ordinance, but where there are exemptions, an assessment of the impacts must be carried out and measures to reduce impacts should be recommended.

The management plan will facilitate the scoping part of the impact assessment, through the detailed description of the important features of the area and the setting of conservation objectives.

Annex C chart explains the evaluation process which needs to be followed under the Ordinance.

2.1.4. The Foreshore Ordinance, 9/1975

The Ordinance prohibits or imposes restrictions on activities on the foreshore (digging, extracting materials, dumping of rubble or rubbish, erecting tents, placing of boats etc).

Where it is necessary to protect the natural, archaeological or environmental character of any part of the foreshore or to protect marine life, the Ordinance can prohibit the provision of services on those parts of the foreshore.

No structure may be built on the foreshore without a permit from the Chief Officer.

The Administrator may prescribe certain areas of the foreshore as areas where no buildings or structures of any kind may be erected and where no development may take place.

This Management Plan will identify the areas where the above provisions should apply.

The SBA Administration is in the process of updating the Foreshore Ordinance and drafting a Foreshore Policy which will prescribe the SBAA position in relation to water sports, events and other activities on the foreshore, permanent structures etc.

2.1.5. The Forest Ordinance, 14/1980

The Ordinance creates offences for activities illegally undertaken in forests (erecting of buildings, destroying trees or shrubs, clearing and cultivating land etc).

The felling of certain tree species is prohibited without a licence from the Chief Officer.

2.1.6. The Fisheries Ordinance and the Fisheries Regulations 2005

The Ordinance and Regulations prescribe the licensing procedure for professional and amateur fishermen as well as the quantity, size and type of nets used by licensed vessels. Additionally they regulate:

- the depths where nets may be cast and their lengths
- times and periods during which nets may be cast

The Ordinance and Regulations prohibit:

- the killing, pursuing, taking, purchasing selling or possessing of turtles, seals and dolphins
- the use of dynamite or other explosives.

2.1.7. The Streets and Buildings Regulation (Consolidation) Ordinance, 7/1984

The Ordinance regulates development through the issue of building permits and the imposition of conditions. Persons proposing development within sites with important flora and fauna may be required to alter plans/calculations/drawings before they are granted a building permit with the object of encouraging the proper management of those features of the site.

Zones in relation to trades, industries, residential or other purposes as well as maximum number of storeys of buildings, height of buildings or maximum total area of all storeys of buildings are defined by the Ordinance.

2.1.8. The Waste Management Ordinance, 7/2007

Any undertaking engaged in the collection or transport of waste (hazardous and non hazardous), acting as a broker or contractor for the disposal or recovery of waste, carrying out operations set out in the Schedules to the Ordinance, or recovering or disposing of waste at the site of its production must hold a licence for waste management.

The Ordinance imposes an obligation on licensed undertakings to rectify any damages they have caused to the environment, restore the natural environment and landscape the site after they cease their waste management operations.

Holders of waste must deliver waste to the relevant licensed undertakings.

Transits, imports and exports of waste must be notified to the Chief Officer.

The Administrator may prohibit the import, export or transit through the Areas of specific categories of waste and may make regulations in relation to the transit, import or export of waste.

2.1.9. Control of Water Pollution Ordinance, 2/2005

The Ordinance provides for the effective control of the quality of waters through regular inspections and the creation of offences in relation to any discharge of waste in streams, waters or the soil.

An installation which causes or is likely to cause pollution in the waters or the soil cannot operate without a discharge permit issued in accordance with the Ordinance.

Operators of such installations must take all necessary measures for the prevention of accidents and the limitation of their consequences. Additionally they must inform

the Chief Officer of any accident which occurs in or near their installation and which affects or seems likely to affect any waters, soil, atmosphere or any person within the area surrounding the installation.

The Ordinance also makes provision for the taking of measures against nitrate pollution and excessive use of fertilizers. To this end, a code of good agricultural practice has been made and the Akrotiri Aquifer has been designated as a zone vulnerable to nitrate pollution.

2.1.10. Wells Ordinance, CAP 371

The Ordinance regulates the abstraction of underground water.

2.1.11. Water Supply (Special Measures), Ordinance, 14/ 1964

The Ordinance regulates the abstraction of underground water within controlled areas.

2.1.12. Mines and Quarries (Regulation) Ordinance, CAP 270

The Ordinance regulates the mining and quarrying activities.

2.1.13. Agricultural Land Consolidation, Ordinance 18/99

The Ordinance regulates agricultural land consolidation. Owners within the land consolidation area become members of the land consolidation Association. The Ordinance sets up a Committee for the carrying out of land consolidation measures.

2.1.14. Prevention of Oil Pollution (Territorial Waters), Ordinance 3/1982

The Ordinance prohibits the discharge of oil or oily mixtures into the ports, coast and territorial waters of the Areas. It also prohibits the use of anti-pollution chemical dispersants without the approval of the Fiscal Officer.

2.1.15. Promotion of Renewable Sources of Energy and Conservation of Energy Ordinance, 6/2004

The Ordinance makes provision for encouraging the exploitation of renewable sources of energy and the promotion of the conservation of energy.

2.1.16. Control of Atmospheric Pollution, Ordinance 6/1998

The Chief Officer may set quality objectives for the atmosphere of the Areas.

As far as pollution from industrial sources is concerned the Administrator may, on grounds of security needs or military requirements, exempt from the Ordinance any premises belonging to or occupied by the Crown.

The Administrator may prescribe the industrial processes which require to be registered to ensure compliance with the requirements of the Ordinance.

It is prohibited to erect or extend industrial premises which involve the using or building of a chimney without notifying and receiving the consent of the Chief Inspector.

2.1.17. Agricultural Provisions, Ordinance 9/07

The Ordinance recognises the application of all Republican agricultural laws in the Areas. The list of the Laws which are recognised is included in the Schedules to the Ordinance.

2.1.18. Apiculture, Ordinance 24/2003

Persons who wish to keep beehives in the Areas must apply for a certificate under this Ordinance. Apiarists are subject to the conditions prescribed in the Ordinance. An area which is rich in apian

plants may be declared as an apicultural area where beehives may be placed. The functions under the Ordinance have been delegated to the RoC.

2.1.19. Control (Entry, Settlement and Commercial Enterprises, Ordinance 1960

The Ordinance makes provision for the control of commercial enterprises through the issue of business licences. Residents in the Areas are included in a recognized residents list. The list only includes persons whose normal place of residence was in a part of the colony comprised in the Areas.

2.1.20. Dogs Ordinance, 9/2006

The Ordinance regulates the ownership of dogs, training of gun dogs, and dealing with stray dogs. It also prescribes prohibitions.

2.1.21. Fishing Shelters, Ordinance 19/93

The Ordinance regulates the declaration and the use of fishing shelters by the owners of vessels.

2.1.22. Immovable Property Acquisition (Control), Ordinance 9/1972

The acquisition of immovable property other by a Cypriot or a Cypriot corporation is prohibited without the consent of the Administrator.

2.1.23. Piers, Cap 78

The Ordinance regulates the erection, re-erection and extension of piers.

2.1.24. Ports, 35/2010

The Ordinance declares ports. Directions to vessels and pilotage directions are given under the Ordinance.

2.1.25. Protection and Welfare of Animals, Ordinance 20/2011

The Ordinance applies to pets and other animals which are under human control and prohibits ill-treatment (when keeping, treating, killing or slaughtering animals) and neglect. The Ordinance also regulates marketing transport and use of animals for other purposes.

2.1.26. Rural Constables, Cap 287

The Ordinance regulates the appointment and duties of rural constables.

2.1.27. Sewerage, 20/2008

The Ordinance recognises Republican Sewerage Boards and their powers and duties. It creates an obligation for owners/occupiers of premises to connect to public sewers. Owners who are connected to private building sewers have an obligation to maintain them. The Ordinance prohibits the discharging of certain matter to public sewers.

2.1.28. Sponge Fishery, Cap 146

It is illegal to fish for sponge without a licence. The extent of sponge fishing by licensed persons may be restricted.

2.1.29. Zakaki Communal Property (Special Provisions) Ordinance, 11/1972

The Ordinance stipulates that the Zakaki Merra shall be enjoyed communally by the inhabitants of Zakaki. Where a part of the of the Zakaki Merra ceases to be communal property as a result of a declaration under the Immovable Property (Tenure, Registration and Valuation) Ordinance compensation must be paid by the Administrator for the benefit of the inhabitants of Zakaki.

2.1.30. Overlapping Communities, 27/2001

This Ordinance provides for the administration of overlapping communities by the respective community councils.

2.1.31. Akrotiri Village (Special Provisions), Ordinance 3/1966

This Ordinance provides for the administration and control of the village grazing ground known as Merra of Akrotiri Village, and the communal rights of Akrotiri on forest land.

2.1.32. Akrotiri Community, 23/2001

This Ordinance regulates the administration of Akrotiri Community by the Akrotiri Community Council.

2.1.33. Supplies and Services, CAP 175A

This Ordinance provides for the requisition of land and other immovable property for public utility projects.

2.1.34. Places of Entertainment, Ordinance 2/1999

This Ordinance deals with licensing and control of places of entertainment.

2.1.35. Motor Vehicles and Road Traffic, Ordinance 8/1973

This Ordinance regulates the use of motor vehicles and road traffic.

2.1.36. Land Acquisition, CAP 226

This legislation deals with compulsory acquisition of land and other immovable property for public utility projects.

2.1.37. Immovable Property (Tenure, Registration and Valuation), CAP 224

This legislation deals with ownership, registration and valuation of immovable property.

2.1.38. Government Lands, CAP 221

This legislation provides for the grant and disposition of government lands and prohibits encroachment on such land otherwise.

2.1.39. Fresh Water Fish Preservation, Ordinance 10/1963

This Ordinance prohibits the killing, capturing or pursuing of fresh water fish without a written permission.

2.1.40. Water Conservation (Special Measures), Ordinance 13/2000

This Ordinance relates to conservation of water, by prohibiting hose pipe use.

2.1.41. Irrigation Divisions (Villages) Ordinance, CAP 342

This legislation regulates the establishment and operation of irrigation divisions, which are related to grouped use of irrigation water and associated works. There are currently no active irrigation divisions within Akrotiri Peninsula.

2.1.42. Irrigation (Private Water Associations), CAP 115

This legislation relates to the formation of associations for regulation and use of common waters.

2.1.43. Public Rivers Protection Ordinance, 15/1980

This Ordinance deals with the protection of public rivers.

2.1.44. Fish Farming, Ordinance, 18/2001

This legislation provides for the control of matters related to aquaculture.

2.1.45. Prevention of Fires in Open Country, Ordinance 13/1989

This Ordinance aims at protecting the countryside from fires.

2.1.46. Prevention of Litter Ordinance, 4/1998

This Ordinance provides for the combating of litter on public roads and public places in general.

2.1.47. Control (Entry, Settlement and Commercial Enterprises), Ordinance, 5/1960

The Ordinance controls the establishment of commercial enterprises.

2.1.48. Protection of the Environment Ordinance, 9/1998

In order to protect areas of natural beauty or special character the Chief Officer may define any area as a white zone within which the existing uses must remain unchanged and further development must be limited to what is regarded as essential to the needs of the area. Development in such an area may only take place after a permit has been obtained from the Chief Officer.

The Chief Officer may discontinue the use of immovable property in the interests of orderly development.

The Chief Officer may make preservation orders for any particular buildings, or areas prohibiting any building operations or development. No works may take place in buildings or areas covered by preservation orders without obtaining the consent of the Chief Officer.

The Chief Officer may make Tree Protection Orders for any particular tree or group of trees prohibiting the cutting down, topping, lopping or destroying of trees except with the consent of the Chief Officer.

The Chief Officer may regulate or restrict the display of advertisements on grounds of public safety.

The Chief Officer may regulate or restrict development or use of immovable property by entering into an agreement with any person.

2.1.49. Public Waterworks, CAP 341

This legislation provides for the vesting and control of water and the construction of waterworks to the government.

2.1.50. The Antiquities Ordinance, 12/1975

The Ordinance prescribes the procedure for declaring ancient monuments and prohibits activities which are damaging to antiquities.

Additionally it is prohibited to:

- interfere (maintain, preserve or restore) with any ancient monument without a licence,
- excavate without a licence,
- deal in antiquities without a dealer's licence,
- export any antiquity without a licence.

The Administrator may by notice under the Ordinance order that no building be erected, reconstructed, repaired or demolished, no tree felled and no advertisement displayed in the area of an ancient monument without a permit from the Area Officer.

2.2. Conventions

The nature conservation conventions extended to the SBAs include the following:

2.2.1. The Bonn Convention on the conservation of migratory species of wild animals

Migratory species which are listed in Appendix I are considered endangered and member States must:

- conserve and where feasible restore their habitats
- prevent, remove, compensate for or minimize the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species
- prevent, reduce or control factors that are endangering or are likely to further endanger the species

Migratory species which are listed in Appendix II have an unfavourable conservation status. Member States should conclude agreements covering the conservation of these species.

2.2.2. The Bern Convention on the conservation of European wildlife and natural habitats

Strictly protected species of flora and fauna included in Annexes I and II to the Convention are protected through the provisions of the Game and Wild Birds Ordinance and the Protection and Management of Nature and Wildlife Ordinance.

The SBAA has an obligation to demonstrate measures to conserve, or achieve the favourable conservation status of important species and habitats and it reports on its progress to the Standing Committee of the Bern Convention once a year.

2.2.3. The Ramsar Convention on wetlands of international importance

The Akrotiri Salt Lake and the Fassouri Marshes were designated as wetlands of international importance in 2003. Details on qualification criteria and description of habitats and species are contained in the Designation Information Sheet.

2.2.4. The London Convention on the prevention of marine pollution by dumping of wastes and other matter

The aim is to prevent deliberate disposal of wastes and other matter at sea by vessels, aircraft and platforms.

The Convention was extended to the SBAs in 1975.

2.2.5. Protocol relating to intervention on the high seas in cases of pollution by substances other than oil

The Protocol was extended to the SBAs in 1982.

2.2.6. Convention on long-range transboundary air pollution.

The Convention was extended to the SBAs in 1982.

2.2.7. Protocol to the 1979 Convention on long-range transboundary air pollution

The Protocol concerns the control of emissions of nitrogen oxides or their transboundary fluxes.

The Convention was extended to the SBAs in 1990.

2.2.8. International Convention relating to intervention on the high seas in cases of oil pollution casualties

The Convention was extended to the SBAs in 1982.

2.2.9. The Montreal Protocol on substances that deplete the ozone layer

The Protocol was extended to the SBAs in 1988.

2.2.10. Vienna Convention for the protection of the ozone layer

The Convention was extended to the SBAs in 1987.

2.2.11. The Basel Convention on the control of transboundary movements of hazardous wastes and their disposal

The convention aims to control the transboundary movement of wastes, monitor and prevent illegal traffic, provide technical assistance and guidelines and promote co-operation.

It imposes obligations on treaty signatories to ensure that wastes are managed in an environmentally sound manner. Hazardous wastes should be treated and disposed of as close as possible to their source of generation. Signatory States should reduce and minimise the generation of hazardous waste.

The Convention was extended to the SBAs in 2006.

2.3. Pending legislation for mirroring in the SBAs

All relevant Republican laws and public instruments go through a prioritization process. The following laws have top priority at the moment:

2.3.1. Environmental Impact Assessment of Certain Plans and/or Programmes Law

The Law applies to plans/programmes in the following fields: agriculture, animal husbandry, forestry, fisheries, energy, industry, mining and quarrying, transport, waste management, management of water resources, telecommunications, transport and land use.

A Strategic Assessment is required for any plan/programme which is within an SPA or an SAC and for which an Appropriate Assessment is required.

2.3.2. Protection and Management of Waters Law

3. Policy

The SBAA policy on non-military development is based on the 1960 Treaty of Establishment, particularly on Appendix O, and is compatible with the military use of the Bases. The legislative framework that applies to development in the Areas mirrors in general the equivalent RoC framework, with the exception of the Town and Country Planning legislation.

Non-military development policy generally accepts the exploitation of the natural resources within the SBAs, but strictly controls all other development. Therefore, the policy does not impose restrictions stringer than those in the RoC on agriculture, quarrying and fishing, except where there are military objections. It also allows for public works, small businesses for local needs, including small industrial workshops and agricultural buildings.

Heavy commercial and industrial development as well as tourist (hotels, holiday houses etc) development is not allowed. Private housing is controlled under certain eligibility criteria in conjunction with certain building zones and natural expansion areas around the various communities. The SBA Authorities also allow residential development in the form of isolated houses outside the existing building zones and the natural expansion areas of villages under certain circumstances. Land division is generally prohibited, save under certain exceptional circumstances, but only within areas covered by building zones or natural expansion areas.

The SBAA in cooperation with the RoC is currently in the process of relaxing the eligibility criteria above and instituting a development control system closer to that of the RoC. One of the intentions is to permit Cypriots with no family ties in communities within the SBAs to acquire plots for residential development or dwelling houses.

4. Designations

The designations relating to nature conservation include:

4.1. Ramsar designation

Large parts of the wetlands at Akrotiri were designated in 2003 as the Akrotiri Ramsar Site shown in map 1. The link to the relevant information sheet is <http://jncc.defra.gov.uk/pdf/RIS/UK32001.pdf>.

The designation was based on information available at the time. Although many stakeholders from the Government of Cyprus and NGOs argued for inclusion of a wider area, the designation did not include all the wetlands as there was no supporting evidence to this effect.

More information has become available since then to support a revision of the Ramsar site boundaries. When the site was designated the SBAs undertook a commitment that the site would not be subject to future military or other development. Further protection to the surrounding area would be afforded through the current management plan.



Map 1a: Akrotiri Ramsar Site

4.2. IBA¹⁰ designation

The Akrotiri Peninsula was included in the IBAs of Cyprus prepared by Birdlife Cyprus. IBAs formed the basis for the designation of SPAs in the RoC. The criteria used for the selection of areas were the same used by Birdlife International based on the importance of bird populations they support at the European level with the aim of safeguarding the protection of bird species considered threatened at the EU¹¹ level. The Akrotiri IBA includes areas not included in the SPA designation and vice versa.

4.3. SPA designation

The two Akrotiri Special Protection Areas were designated in April 2010 following a lengthy stakeholder consultation which started in 2008. The link to the Designation Order is http://www.sbaadministration.org/home/legislation/01_02_09_06_PIs/01_02_09_06_51_PI_2010/2010_0429_PI-13_u.pdf.

The link to the SPA citation documents, map and consultation documents is http://www.sbaadministration.org/home/docs/eco/20100714_SPA.pdf.

The areas designated as SPAs are subject to the Appropriate Assessment process and special management measures. Land use can only be limited to those uses which will not have an impact on the favourable conservation status of the area. Management Orders will be made which will specify the prohibited and permitted activities and development on the SPAs.

4.4. Candidate SAC area

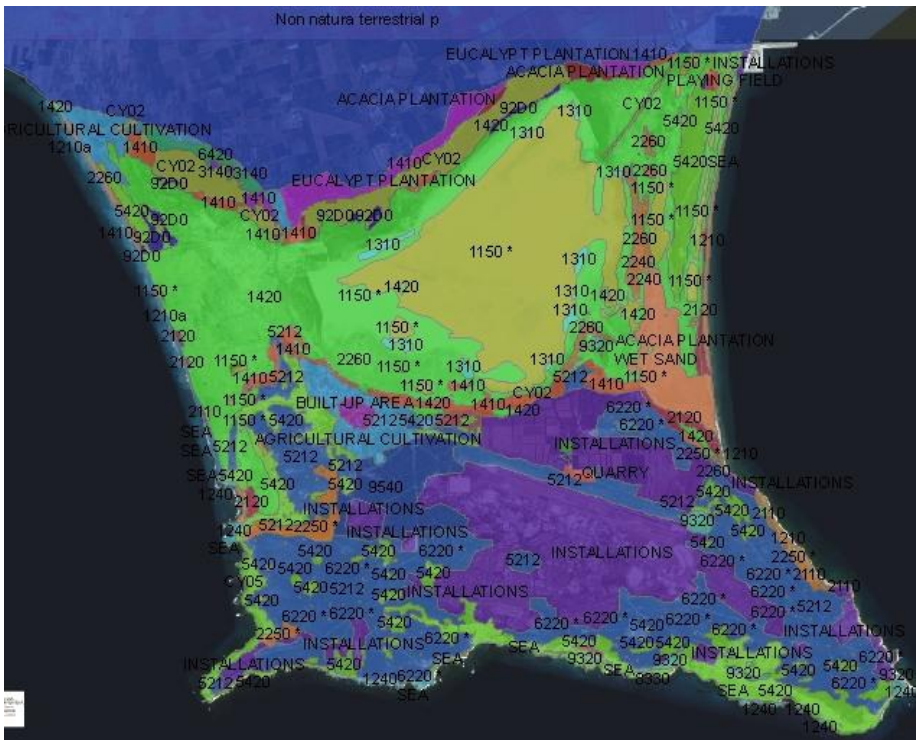
Most part of the peninsula was proposed as an SAC under the LIFE project of the RoC as shown in map 2. The habitats shown in the map form the candidate SAC under the Protection and Management of Nature and Wildlife Ordinance 2007.

Areas designated as SACs are subject to the Appropriate Assessment process and special management measures. Land use can only be allowed to those uses which will not have a negative impact on the favourable conservation status of the area.

Akrotiri candidate SACs are treated as if they have been designated and have the same protection as SACs as per the SBAA Policy of 2007. When the formal designation of the SACs is completed, Management Orders will be made which will specify the prohibited and permitted activities and development within the designated sites.

¹⁰ Important Bird Area

¹¹ European Union



Map 2: SAC Habitats

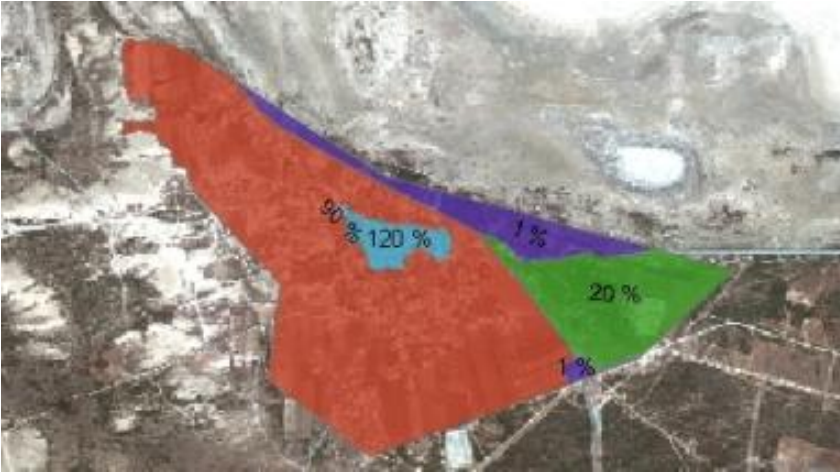
5. Land use zones

The following zones apply to the Akrotiri Peninsula:

5.1. Residential development zones

Residential development at Akrotiri is controlled by zones made under the Streets and Buildings Ordinance which define the permitted use of the buildings, the maximum height, maximum number of storeys, the maximum total area of all storeys of buildings taken together and the maximum plot coverage.

The residential development zones are shown on map 3, which shows maximum total area of all storeys.



Map 3: Akrotiri residential development zones

5.2. Foreshore protection zone

The Foreshore protection zone is currently at 90 metres from the high water mark and covers the whole of the peninsula.

A new Foreshore Ordinance is underway together with a foreshore management policy which will take the conservation interest into account. The objective is not to allow any further structures to be built on the foreshore. Parking will only be permitted on designated areas.

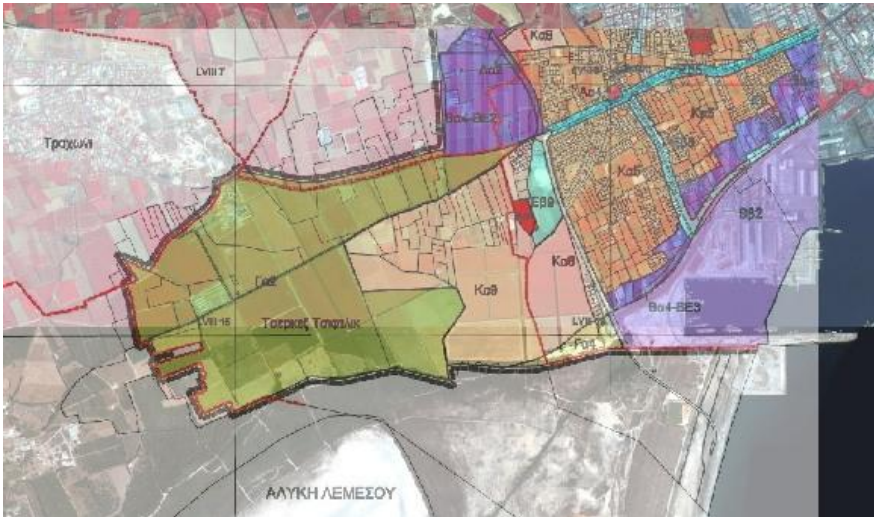
The Foreshore protection zone is shown on map 4.



Map 4: Foreshore protection zone

5.3. Planning/development zones in the RoC

The planning/development zones north of Akrotiri Peninsula, within the RoC are shown on map 5.



Map 5: Development zones north of Akrotiri Peninsula within the RoC

5.4. Akrotiri Restricted Flying Area

The Akrotiri Restricted Flying Area is shown on map 6. No civil aircraft can be flown within this area without authorisation from RAF Station Akrotiri, for reasons of public and flight safety.

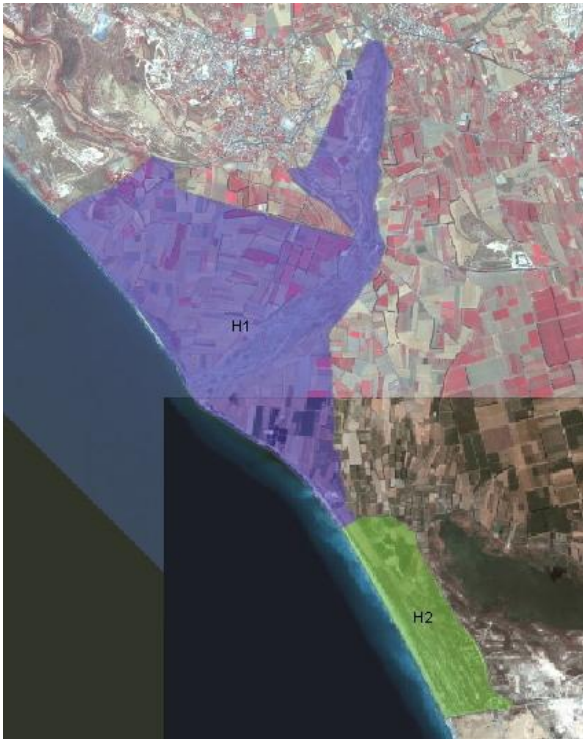


Map 6: Akrotiri restricted flying area

5.5. Hunting areas

The hunting areas are shown on map 7.

Different areas are open for hunting at different periods of the hunting season as per the Orders made under the Game and Wild Birds Ordinance. The hunting season usually starts at the third Sunday of August and finishes at the end of February.



Map 7: Hunting areas at Akrotiri Peninsula

5.6. Antiquity sites

The antiquity sites are shown on map 8. More detailed information on the antiquity sites is provided in section 10 on historic environment.



Map 8: Antiquity sites

5.7. Akrotiri Controlled area

The Akrotiri Controlled area is shown on map 9. It has been designated under the Wells Law and the Water Supply Special Measures Legislation in order to protect the Akrotiri Aquifer, by regulating the abstraction of underground water.



Map 9: Akrotiri controlled area

5.8. Designation of Akrotiri Peninsula as a zone vulnerable to nitrate pollution

The Akrotiri Aquifer has been designated as a category of water affected or likely to be affected by nitrate pollution under the Control of Water Pollution Ordinance. The boundaries are shown on map 10.



Map10: Zone vulnerable to nitrate pollution

5.9. Isolated housing

The SBAA allows isolated housing under certain circumstances, but there is no definitive policy.

5.10. Land consolidation at Akrotiri

The boundaries of land consolidation (two phases) are shown on map 11.



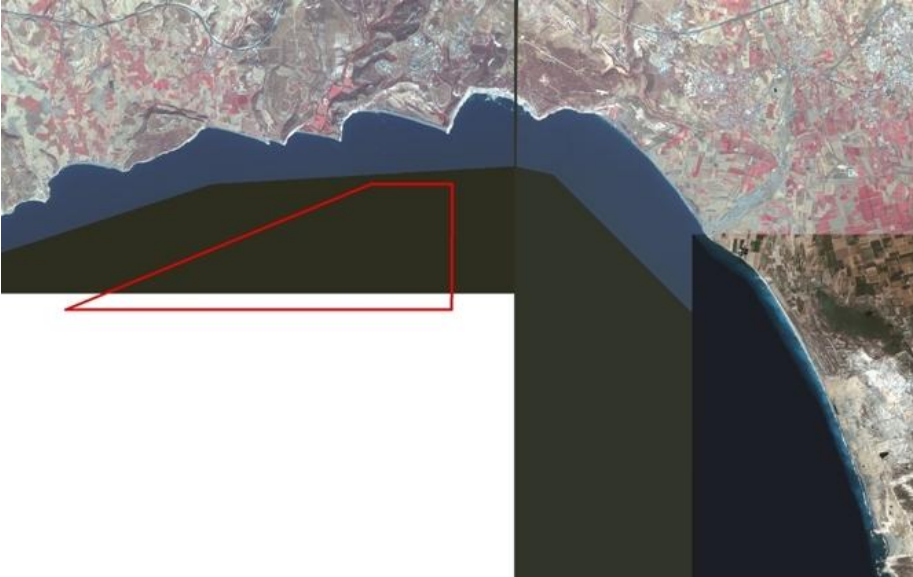
Map11: Land consolidation

5.11. Military training areas

Map 11a shows the areas on Akrotiri Peninsula currently used by the British military for training purposes. Map 11b shows the military training range within Episkopi Bay.



Map 11a: Military training areas at Akrotiri Peninsula



Map11b: Military training area within Episkopi Bay

5.12. Military interest safeguarding zones

Map 11c includes examples of safeguarding zones, covering the aerial sites at the salt lake and Lady's Mile and the RAF buffer for transportation of materials. The zone for the salt lake aerial site is preliminary, as a more detailed study is underway to establish the exact safeguarding boundaries. Any development within such safeguarding zones needs to be scrutinised on a case by case basis. The

map does not include safeguarding zones for other military interest such as radar and other signals etc.



Map 11c: Safeguarding areas for salt lake aerals, Lady's Mile aerals and RAF material transfer buffer

6. Nature conservation interest

6.1. Overview

The peninsula is one of the most important biodiversity hotspots in Cyprus due to a unique combination of factors, including its location and geomorphology, diverse hydrology and semi-natural condition of its habitats.

It hosts a habitat mosaic comprising 29 natural habitat types out of which 26 are included in Schedule 1 to the Protection and Management of Nature and Wildlife Ordinance (natural habitat types of European interest for whose protection Special Areas of Conservation are prescribed), an estimated more than 800 taxa of plants out of which 32 are listed in the Red Book, more than 300 bird species out of which more than 90 are included in Schedule 1 to the Game and Wild Birds Ordinance (species of birds for whose protection Special Protection Areas are prescribed) and a rich herpetofauna as well as invertebrate and fish fauna. Habitats, plants and birds at the peninsula are well studied but the rest of the interest, particularly invertebrates, reptiles, mammals, amphibians and fish require further work, including at the baseline level.

6.2. Habitats

6.2.1. List of habitats

The natural habitats of European interest at the peninsula, as well as significant habitats of local importance are listed in table 1 and shown in map 2. These were identified and mapped under the LIFE project of the RoC in 1999/2001 and according to the provisions of the Protection and Management of Nature and Wildlife Ordinance 2007 require protection through the designation of Special Areas of Conservation. Habitats marked with an asterisk (*) are priority habitats requiring stricter protection under the above Ordinance.

According to the authors of the LIFE study, the mapping of the marine habitats was approximate and requires further survey work, part of which has already been commissioned to consultants. The terrestrial habitats were mapped more accurately and the mapping can be used for SAC designation purposes.

The table also includes the habitats included in the Akrotiri Ramsar designation.

Table 1: SAC habitats at Akrotiri Peninsula

	Habitat Code	Habitat	Included in Schedule I of PMNW ¹² Ordinance	Included in Akrotiri Ramsar citation
1	1110	Sandbanks slightly covered by sea water all the time	√	
2	1120	Posidonia beds *	√*	
3	1150	Lagoons *	√*	√
4	1170	Reefs	√	
5	1210	Annual vegetation of drift lines	√	
6	1220	Perennial vegetation of stony banks	√	
7	1240	Vegetated sea cliffs of the Mediterranean coasts	√	
8	1310	Salicornia and other annuals colonizing mud and sand	√	√
9	1410	Mediterranean salt meadows	√	√
10	1420	Mediterranean halophilous scrubs	√	√
11	2110	Embryonic shifting dunes	√	
12	2120	Shifting dunes along the shoreline	√	
13	2190	Humid dune slacks	√	
14	2230	Malcolmietalia dune grasslands	√	
15	2240	Brachypodietalia dune grasslands with annuals	√	
16	2250	Coastal dunes with Juniperus spp. *	√*	
17	2260	Dune sclerophyllous scrubs	√	√
18	3140	Hard oligo-mesotrophic waters with benthic vegetation of chara formations	√	√
19	5212	Juniperus formations	√	√
20	5420	Cisto-Micromeretea phrygana	√	√
21	6220	Pseudo-steppe with grasses and annuals *	√*	

¹² Protection and Management of Nature and Wildlife

22	6420	Mediterranean tall-herb and rush meadows	√	√
23	8330	Submerged or partly submerged sea caves	√	
24	9320	Olea and Ceratonia forests	√	√
25	9540	Mediterranean forests with endemic Mesogean pines	√	
26	CY05	Sand beaches – turtle nesting grounds (Cyprian Habitat)		
27	CY02	Reedbeds and sedgebeds (Cyprian Habitat)		
28	92DO	Thermo-Mediterranean riparian galleries	√	√
29		Wet sand (sandflats)		√

* = priority habitat

6.3. Flora

Akrotiri Peninsula is one of the most important botanical hotspots in Cyprus. It has been estimated that more than 800 indigenous plant taxa occur on the peninsula, including many important species, out of around 2000 in the whole of Cyprus.

Table 2 lists the important plants identified at Akrotiri Peninsula in the LIFE project and the Red Data Book of the Flora of Cyprus.

Table 2: Important plants at Akrotiri Peninsula

Name	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance as a priority species	Listed in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Annex I to the Bern Convention	Listed in Red Data Book of the Flora of Cyprus	Regional IUCN ¹³ threat category	Global IUCN category	Endemic	Listed as important species in LIFE Standard Data Form	Included in Akrotiri Ramsar citation
<i>Ophrys kotschy</i> *	√	√	√	√	√	VU		√	√	√
<i>Achillea maritima</i>					√	VU				
<i>Aegilops bicornis</i>					√	VU				
<i>Allium willeanum</i>								√	√	
<i>Anacamptis pyramidalis</i>									√	
<i>Anthemis tricolor</i>								√	√	√
<i>Asperula cypria</i>								√	√	
<i>Baldelia ranunculoides</i>					√	RE			√	
<i>Barlia robertiana</i>									√	
<i>Carlina involucreta subsp. Cypria</i>								√	√	
<i>Carlina pygmaea</i>								√	√	
<i>Centaurea calcitrapa angusticeps</i>								√		√

¹³ International Union for Conservation of Nature

<i>Serapias aphroditae</i>				√	VU		√	√	
<i>Serapias bergonii</i>								√	
<i>Serapias orientalis</i>								√	
<i>Serapias parviflora</i>				√	CR			√	
<i>Spiranthes spiralis</i>								√	
<i>Taraxacum aphrogenes</i>				√	VU		√	√	
<i>Teucrium divaricatum</i> <i>Subsp. canescens</i>								√	
<i>Teucrium micropodioides</i>									√
<i>Triplanche nitens</i>				√	VU				
<i>Urtica membranacea</i>				√	VU				
<i>Vulpia brevis</i>				√	CR				

LC = Least concern, VU = Vulnerable, NT = Near threatened, EN = Endangered,
CR = Critically endangered, DD = Data deficient, RE = Regionally extinct
*= priority species

6.4. Fauna

6.4.1. Birds

Akrotiri is one of the most important areas for birds in Cyprus in both diversity and numbers. Table 3 lists all the birds recorded at Akrotiri Peninsula and their respective status under the Birds Directive, SBA legislation, Bern and Bonn Conventions and IUCN.

The list was compiled using information from Birdlife Cyprus, the RoC Game Fund, AEEIC¹⁴, independent experts and local avifauna bibliography.

¹⁴ Akrotiri Environmental Education and Information Centre

Table 3: Bird species recorded at Akrotiri Peninsula

A/A	Scientific Name	English common name	European Birds Directive Annex I and Game and Wild Birds Ordinance Schedule 1	Bern Convention Annex II	Convention of Migratory Species Annex I or II	IUCN Status
1	<i>Gavia arctica</i>	Black-throated LoonDiver	√	√	II	LC
2	<i>Tachybaptus ruficollis</i>	Little Grebe		√		LC
3	<i>Podiceps cristatus</i>	Great Crested Grebe				LC
4	<i>Podiceps nigricollis</i>	Black-necked Grebe		√		LC
5	<i>Puffinus yelkouan</i>	Yelkouan Shearwater		√	I	NT
6	<i>Phalacrocorax carbo</i>	Cormorant				LC
7	<i>Phalacrocorax aristotelis</i>	Shag	√	√		LC
8	<i>Phalacrocorax pygmeus</i>	Pygmy Cormorant	√	√	II	LC
9	<i>Pelecanus onocrotalus</i>	White Pelican	√	√	I,II	LC
10	<i>Botaurus stellaris</i>	Bittern	√	√	II	LC
11	<i>Ixobrychus minutus</i>	Little Bittern	√	√	II	LC
12	<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	√	√		LC
13	<i>Ardeola ralloides</i>	Squacco Heron	√	√		LC
14	<i>Bubulcus ibis</i>	Cattle Egret		√		LC
15	<i>Egretta garzetta</i>	Little Egret	√	√		LC
16	<i>Egretta alba</i>	Great White Egret	√	√		LC
17	<i>Ardea cinerea</i>	Grey Heron				LC
18	<i>Ardea purpurea</i>	Purple Heron	√	√	II	LC

19	<i>Ciconia nigra</i>	Black Stork	√	√	II	LC
20	<i>Ciconia ciconia</i>	White Stork	√	√	II	LC
21	<i>Plegadis falcinellus</i>	Glossy Ibis	√	√	II	LC
22	<i>Platalea leucorodia</i>	Spoonbill	√	√	II	LC
23	<i>Phoenicopterus ruber</i>	Greater Flamingo	√	√	II	LC
24	<i>Cygnus olor</i>	Mute Swan			II	LC
25	<i>Anser albifrons</i>	White-fronted Goose			II	LC
26	<i>Anser anser</i>	Greylag Goose			II	LC
27	<i>Tadoma ferruginea</i>	Ruddy Shelduck	√	√	II	LC
28	<i>Tadoma tadoma</i>	Shelduck		√	II	LC
29	<i>Anas Penelope</i>	Wigeon			II	LC
30	<i>Anas strepera</i>	Gadwall			II	LC
31	<i>Anas crecca</i>	Teal			II	LC
32	<i>Anas platyrhynchos</i>	Mallard			II	LC
33	<i>Anas acuta</i>	Pintail			II	LC
34	<i>Anas querquedula</i>	Garganey			II	LC
35	<i>Anas clypeata</i>	Shoveler			II	LC
36	<i>Marmaronetta angustirostris</i>	Marbled Teal	√	√	I	VU
37	<i>Netta rufina</i>	Red-crested Pochard		√	II	LC
38	<i>Aythya ferina</i>	Pochard		√	II	LC
39	<i>Aythya nyroca</i>	Ferruginous Duck	√	√	I	NT
40	<i>Aythya fuligula</i>	Tufted Duck		√	II	LC
41	<i>Aythya marila</i>	Scaup		√	II	LC
42	<i>Bucephala clangula</i>	Goldeneye		√	II	LC
43	<i>Mergus albellus</i>	Smew	√	√	II	LC
44	<i>Oxyura leucocephala</i>	White-headed Duck	√	√	I	EN
45	<i>Pernis apivorus</i>	Honey Buzzard	√	√	II	LC
46	<i>Elanus caeruleus</i>	Black-shoulder Kite	√	√	II	LC

47	<i>Milvus migrans</i>	Black Kite	√	√	II	LC
48	<i>Neophron percnopterus</i>	Egyptian Vulture	√	√	I	EN
49	<i>Gyps fulvus</i>	Griffon Vulture	√	√	II	LC
50	<i>Aegyptius monachus</i>	Black Vulture	√	√	II	NT
51	<i>Circaetus galliicus</i>	Short-toed Eagle	√	√	II	
52	<i>Circus aeruginosus</i>	Marsh Harrier	√	√	II	LC
53	<i>Circus cyaneus</i>	Hen Harrier	√	√	II	LC
54	<i>Circus macrourus</i>	Pallid Harrier	√	√	II	NT
55	<i>Circus pygargus</i>	Montagu's Harrier	√	√	II	LC
56	<i>Accipiter gentilis</i>	Goshawk		√	II	LC
57	<i>Accipiter nisus</i>	Sparrowhawk		√	II	LC
58	<i>Accipiter brevipes</i>	Levant Sparrowhawk	√	√	II	LC
59	<i>Buteo buteo buteo</i>	Common Buzzard		√	II	
60	<i>Buteo buteo vulpinus</i>	Steppe Buzzard		√	II	
61	<i>Buteo rufinus</i>	Long-legged Buzzard	√	√	II	LC
62	<i>Aquila pomarina</i>	Lesser Spotted Eagle	√	√	II	LC
63	<i>Aquila heliaca</i>	Imperial Eagle	√	√	II	VU
64	<i>Hieraaetus pennatus</i>	Booted Eagle	√	√	II	LC
65	<i>Hieraaetus fasciatus</i>	Bonelli's Eagle	√	√	II	
66	<i>Pandion haliaetus</i>	Osprey	√	√	II	LC
67	<i>Falco naumanni</i>	Lesser Kestrel	√	√	I	VU
68	<i>Falco tinnunculus</i>	Kestrel		√	II	LC
69	<i>Falco vespertinus</i>	Red-footed Falcon	√	√	II	NT
70	<i>Falco columbarius</i>	Merlin	√	√	II	LC
71	<i>Falco subbuteo</i>	Hobby		√	II	LC
72	<i>Falco eleonora</i>	Eleanora's Falcon	√	√	II	LC
73	<i>Falco biarmicus</i>	Lanner	√	√	II	LC
74	<i>Falco cherrug</i>	Saker	√	√	II	VU

75	<i>Falco peregrinus</i>	Peregrine	√	√	II	LC
76	<i>Alectoris chukar</i>	Chukar				LC
77	<i>Francolinus francolinus</i>	Black Francolin				LC
78	<i>Coturnix coturnix</i>	Quail			II	LC
79	<i>Rallus aquaticus</i>	Water Rail				LC
80	<i>Porzana porzana</i>	Spotted Crake	√	√	II	LC
81	<i>Porzana parva</i>	Little Crake	√	√	II	LC
82	<i>Porzana pusilla</i>	Baillon's Crake	√	√	II	LC
83	<i>Crex crex</i>	Corncrake	√	√	II	LC
84	<i>Gallinula chloropus</i>	Moorhen				LC
85	<i>Fulica atra</i>	Coot			II	LC
86	<i>Grus grus</i>	Crane	√	√	II	LC
87	<i>Anthropoides virgo</i>	Demoiselle Crane		√	II	LC
88	<i>Haematopus ostralegus</i>	Oystercatcher			II	LC
89	<i>Himantopus himantopus</i>	Black-winged Stilt	√	√	II	LC
90	<i>Recurvirostra avosetta</i>	Avocet	√	√	II	LC
91	<i>Burhinus oedicephalus</i>	Stone-curlew	√		II	LC
92	<i>Cursorius cursor</i>	Cream-coloured Courser	√	√	II	LC
93	<i>Glareola pratincola</i>	Collared Pratincole	√	√	II	LC
94	<i>Glareola nordmanni</i>	Black-winged Pratincole		√	II	NT
95	<i>Charadrius dubius</i>	Little Ringed Plover		√	II	LC
96	<i>Charadrius hiaticula</i>	Ringed Plover		√	II	LC
97	<i>Charadrius alexandrinus</i>	Kentish Plover	√	√	II	LC
98	<i>Charadrius leschenaultia</i>	Greater Sand Plover		√	II	LC
99	<i>Charadrius asiaticus</i>	Caspian Plover			II	LC
100	<i>Charadrius morinellus</i>	Dotterel	√	√	II	LC
101	<i>Pluvialis fulva</i>	Pacific Golden Plover			II	LC
102	<i>Pluvialis apricaria</i>	Golden Plover	√		II	LC
103	<i>Pluvialis squatarola</i>	Grey Plover			II	LC

104	<i>Vanellus spinosus</i>	Spur-winged Plover	√		II	LC
105	<i>Vanellus gregarius</i>	Sociable Plover			II	CR
106	<i>Vanellus leucurus</i>	White-tailed Plover			II	LC
107	<i>Vanellus vanellus</i>	Lapwing			II	LC
108	<i>Calidris canutus</i>	Knot			II	LC
109	<i>Calidris alba</i>	Sanderling		√	II	LC
110	<i>Calidris minuta</i>	Little Stint		√	II	LC
111	<i>Calidris temminckii</i>	Temminck's Stint		√	II	LC
112	<i>Calidris melanotos</i>	Pectoral Sandpiper			II	LC
113	<i>Calidris ferruginea</i>	Curlew Sandpiper			II	LC
114	<i>Calidris bairdii</i>	Baird's sandpiper			II	LC
115	<i>Calidris alpina</i>	Dunlin		√	II	LC
116	<i>Limicola falcinellus</i>	Broad-billed Sandpiper		√	II	LC
117	<i>Philomachus pugnax</i>	Ruff	√		II	LC
118	<i>Lymnocyptes minimus</i>	Jack Snipe			II	LC
119	<i>Gallinago gallinago</i>	Common Snipe			II	LC
120	<i>Gallinago media</i>	Great Snipe	√	√	II	NT
121	<i>Scolopax rusticola</i>	Woodcock			II	LC
122	<i>Limosa limosa</i>	Black-tailed Godwit			II	NT
123	<i>Limosa lapponica</i>	Bar-tailed Godwit	√		II	LC
124	<i>Numenius phaeopus</i>	Whimbrel			II	LC
125	<i>Numenius arquata</i>	Curlew			II	NT
126	<i>Tringa erythropus</i>	Spotted Redshank			II	LC
127	<i>Tringa totanus</i>	Redshank			II	LC
128	<i>Tringa stagnatilis</i>	Marsh Sandpiper		√	II	LC
129	<i>Tringa nebularia</i>	Greenshank			II	LC
130	<i>Tringa ochropus</i>	Green Sandpiper		√	II	LC
131	<i>Tringa glareola</i>	Wood Sandpiper	√	√	II	LC

132	<i>Xenus cinereus</i>	Terek Sandpiper	√	√	II	LC
133	<i>Actitis hypoleucos</i>	Common Sandpiper		√	II	LC
134	<i>Arenaria interpres</i>	Turnstone		√	II	LC
135	<i>Phalaropus lobatus</i>	Red-necked Phalarope	√	√	II	LC
136	<i>Stercorarius parasiticus</i>	Arctic Skua				LC
137	<i>Larus ichthyaetus</i>	Great Black-headed Gull			II	LC
138	<i>Larus melanocephalus</i>	Mediterranean Gull	√	√	II	LC
139	<i>Larus minutus</i>	Little Gull	√	√		LC
140	<i>Larus ridibundus</i>	Black-headed Gull				LC
141	<i>Larus genei</i>	Slender-billed Gull	√	√	II	LC
142	<i>Larus audouinii</i>	Audouin's Gull	√	√	I,II	NT
143	<i>Larus canus</i>	Common Gull				LC
144	<i>Larus fuscus fuscus</i>	Lesser Black-backed Gull (Baltic gull)				
145	<i>Larus fuscus heuglini</i>	'Huglin's' Gull				
146	<i>Larus argentatus</i>	Herring Gull				LC
147	<i>Larus michahellis</i>	Yellow-legged Gull				LC
148	<i>Larus cachinnans</i>	'Caspian' Gull				LC
149	<i>Larus armenicus</i>	Armenian Gull			II	LC
150	<i>Sterna nilotica</i>	Gull-billed Tern	√		II	LC
151	<i>Sterna caspia</i>	Caspian Tern	√		II	LC
152	<i>Sterna sandvicensis</i>	Sandwich Tern	√	√	II	LC
153	<i>Sterna hirundo</i>	Common Tern	√	√	II	LC
154	<i>Sterna paradisaea</i>	Arctic Tern	√	√	II	LC
155	<i>Sterna albifrons</i>	Little Tern	√	√	II	LC
156	<i>Chlidonias hybridus</i>	Whiskered Tern	√	√		LC
157	<i>Chlidonias niger</i>	Black Tern	√	√	II	LC
158	<i>Chlidonias leucopterus</i>	White-winged Black Tern		√	II	LC
159	<i>Columba livia</i>	Rock Dove				LC

160	<i>Columba oenas</i>	Stock Dove				LC
161	<i>Columba palumbus</i>	Woodpigeon				LC
162	<i>Streptopelia decaocto</i>	Collared Dove				LC
163	<i>Streptopelia turtur</i>	Turtle Dove			II	LC
164	<i>Streptopelia senegalensis</i>	Laughing Dove				LC
165	<i>Clamator glandarius</i>	Great Spotted Cuckoo		√		LC
166	<i>Cuculus canorus</i>	Cuckoo				LC
167	<i>Tyto alba</i>	Barn Owl		√		LC
168	<i>Otus scops</i>	Scops Owl		√		LC
169	<i>Athene noctua</i>	Little Owl		√		LC
170	<i>Asio otus</i>	Long-eared Owl		√		LC
171	<i>Asio flammeus</i>	Short-eared Owl	√	√		LC
172	<i>Caprimulgus europaeus</i>	Nightjar	√	√		LC
173	<i>Apus apus</i>	Swift				LC
174	<i>Apus pallidus</i>	Pallid Swift		√		LC
175	<i>Apus melba</i>	Alpine Swift		√		LC
176	<i>Apus affinis</i>	Little Swift				LC
177	<i>Halcyon smyrnensis</i>	White-breasted Kingfisher		√		
178	<i>Alcedo atthis</i>	Kingfisher	√	√		LC
179	<i>Ceryle rudis</i>	Pied Kingfisher		√		LC
180	<i>Merops persicus</i>	Blue-cheeked Bee-eater				LC
181	<i>Merops apiaster</i>	Bee-eater		√	II	LC
182	<i>Coracias garrulus</i>	Roller	√	√	II	NT
183	<i>Upupa epops</i>	Hoopoe		√		LC
184	<i>Jynx torquilla</i>	Wryneck		√		LC
185	<i>Ammomanes cincturus</i>	Bar-tailed Lark				LC
186	<i>Melanocorypha calandra</i>	Calandra Lark	√	√		LC
187	<i>Melanocorypha bimaculata</i>	Bimaculated Lark	√	√		LC

188	<i>Calandrella brachydactyla</i>	Short-toed Lark		√		LC
189	<i>Eremalauda dunni</i>	Dunn's Lark				LC
190	<i>Calandrella rufescens</i>	Lesser Short-toed Lark		√		LC
191	<i>Galerida cristata</i>	Crested Lark				LC
192	<i>Lullula arborea</i>	Woodlark	√			LC
193	<i>Alauda arvensis</i>	Skylark				LC
194	<i>Riparia riparia</i>	Sand Martin		√		LC
195	<i>Hirundo rustica</i>	Barn Swallow		√		LC
196	<i>Hirundo daurica</i>	Red-rumped Swallow		√		LC
197	<i>Delichon urbica</i>	House Martin		√		LC
198	<i>Anthus richardi</i>	Richard's Pipit		√		LC
199	<i>Anthus campestris</i>	Tawny Pipit	√	√		LC
200	<i>Anthus trivialis</i>	Tree Pipit		√		LC
201	<i>Anthus pratensis</i>	Meadow Pipit		√		LC
202	<i>Anthus cervinus</i>	Red-throated Pipit		√		LC
203	<i>Anthus spinoletta</i>	Water Pipit		√		LC
204	<i>Motacilla flava flava</i>	Yellow Wagtail (Blue-headed wagtail)		√		
205	<i>Motacilla flava flavissima</i>	Yellow Wagtail		√		
206	<i>Motacilla flava thunbergi</i>	Grey-headed Wagtail		√		
207	<i>Motacilla flava beema</i>	Syke's Wagtail		√		
208	<i>Motacilla flava lutea</i>	Yellow-headed Wagtail		√		
209	<i>Motacilla flava feldegg</i>	Black-headed Wagtail		√		
210	<i>Motacilla flava superciliaris</i>	Superciliaris wagtail		√		
211	<i>Motacilla flava dombrowskii</i>	Dombrowskii wagtail		√		
212	<i>Motacilla citreola</i>	Citrine Wagtail		√		LC
213	<i>Motacilla cinerea</i>	Grey Wagtail		√		LC

214	<i>Motacilla alba alba</i>	White Wagtail		√		
215	<i>Motacilla alba yarrellii</i>	Pied wagtail		√		
216	<i>Cercotrichas galactotes</i>	Rufous Bushchat		√		L C
217	<i>Erithacus rubecula</i>	Robin		√		L C
218	<i>Luscinia luscinia</i>	Thrush Nightingale		√		L C
219	<i>Luscinia megarhynchos</i>	Nightingale		√		L C
220	<i>Luscinia svecica</i>	Bluethroat	√	√		L C
221	<i>Phoenicurus ochruros</i>	Black Redstart		√		L C
222	<i>Phoenicurus phoenicurus</i>	Redstart		√		L C
223	<i>Saxicola rubetra</i>	Whinchat		√		L C
224	<i>Saxicola torquata torquata</i>	Stonechat		√		
225	<i>Saxicola torquata maura</i>	Siberian Stonechat		√		
226	<i>Saxicola torquata variegata</i>	Caucasian Stonechat		√		
227	<i>Oenanthe isabellina</i>	Isabelline Wheatear		√		L C
228	<i>Oenanthe oenanthe</i>	Wheatear		√		L C
229	<i>Oenanthe cypriaca</i>	Cyprus Pied Wheatear	√			L C
230	<i>Oenanthe hispanica</i>	Black-eared Wheatear		√		L C
231	<i>Oenanthe deserti</i>	Desert Wheatear				L C
232	<i>Oenanthe finschii</i>	Finsch's Wheatear		√		L C
233	<i>Oenanthe xanthopyrna</i>	Red-tailed Wheatear				L C
234	<i>Monticola saxatilis</i>	Rock Thrush		√		L C
235	<i>Monticola solitarius</i>	Blue Rock Thrush		√		L C
236	<i>Turdus torquatus</i>	Ring Ouzel		√		L C
237	<i>Turdus merula</i>	Blackbird				L C
238	<i>Turdus philomelos</i>	Song Thrush				L C
239	<i>Turdus iliacus</i>	Redwing				L C
240	<i>Turdus viscivorus</i>	Mistle Thrush				L C

241	<i>Cettia cetti</i>	Cetti's Warbler		√	II	LC
242	<i>Cisticola juncidis</i>	Fan-tailed Warbler		√	II	LC
243	<i>Prinia gracilis</i>	Graceful Warbler		√	II	LC
244	<i>Locustella luscinioides</i>	Savi's Warbler		√	II	LC
245	<i>Acrocephalus melanopogon</i>	Moustached Warbler	√	√	II	LC
246	<i>Acrocephalus schoenobaenus</i>	Sedge Warbler		√	II	LC
247	<i>Acrocephalus palustris</i>	Marsh Warbler		√	II	LC
248	<i>Acrocephalus scirpaceus</i>	Reed Warbler		√	II	LC
249	<i>Acrocephalus arundinaceus</i>	Great Reed Warbler		√	II	LC
250	<i>Hippolais pallida</i>	Eastern Olivaceous Warbler		√	II	LC
251	<i>Hippolais icterina</i>	Icterine Warbler		√	II	LC
252	<i>Sylvia conspicillata</i>	Spectacled Warbler		√	II	LC
253	<i>Sylvia cantillans</i>	Subalpine Warbler		√	II	LC
254	<i>Sylvia melanocephala</i>	Sardinian Warbler		√	II	LC
255	<i>Sylvia mystacea</i>	Menetries's warbler		√	II	LC
256	<i>Sylvia melanothorax</i>	Cyprus Warbler	√	√	II	LC
257	<i>Sylvia rueppelli</i>	Ruppell's Warbler	√	√	II	LC
258	<i>Sylvia nana</i>	Asian Desert Warbler		√	II	LC
259	<i>Sylvia hortensis</i>	Orphean Warbler		√	II	LC
260	<i>Sylvia nisoria</i>	Barred Warbler	√	√	II	LC
261	<i>Sylvia curruca</i>	Lesser Whitethroat		√	II	LC
262	<i>Sylvia communis</i>	Whitethroat		√	II	LC
263	<i>Sylvia borin</i>	Garden Warbler		√	II	LC
264	<i>Sylvia atricapilla</i>	Blackcap		√	II	LC
265	<i>Phylloscopus bonelli</i>	Bonelli's Warbler		√	II	LC
266	<i>Phylloscopus sibilatrix</i>	Wood Warbler		√	II	LC
267	<i>Phylloscopus collybita</i>	Chiffchaff		√	II	LC
268	<i>Phylloscopus trochilus</i>	Willow Warbler		√	II	LC

269	<i>Regulus regulus</i>	Goldcrest		√	II	LC
270	<i>Muscicapa striata</i>	Spotted Flycatcher		√	II	LC
271	<i>Ficedula semitorquata</i>	Semi-collard Flycatcher		√	II	NT
272	<i>Ficedula albicollis</i>	Collared Flycatcher	√	√	II	LC
273	<i>Ficedula hypoleuca</i>	Pied Flycatcher		√	II	LC
274	<i>Panurus biarmicus</i>	Bearded Tit		√		LC
275	<i>Parus ater</i>	Coal Tit	√	√		LC
276	<i>Parus major</i>	Great Tit		√		LC
277	<i>Tichodroma muraria</i>	Wallcreeper		√		LC
278	<i>Remiz pendulinus</i>	Penduline Tit		√		LC
279	<i>Oriolus oriolus</i>	Golden Oriole		√		LC
280	<i>Lanius isabellinus</i>	Isabelline Shrike		√		LC
281	<i>Lanius collurio</i>	Red-backed Shrike	√	√		LC
282	<i>Lanius minor</i>	Lesser Grey Shrike	√	√		LC
283	<i>Lanius meridionalis</i>	Great Grey Shrike		√		
284	<i>Lanius senator</i>	Woodchat Shrike		√		LC
285	<i>Lanius nubicus</i>	Masked Shrike	√	√		LC
286	<i>Pica pica</i>	Magpie				LC
287	<i>Corvus monedula</i>	Jackdaw				LC
288	<i>Corvus cornix</i>	Hooded Crow				
289	<i>Sturnus vulgaris</i>	Starling				LC
290	<i>Sturnus roseus</i>	Rose-coloured Starling		√		LC
291	<i>Passer domesticus</i>	House Sparrow				LC
292	<i>Passer hispaniolensis</i>	Spanish Sparrow				LC
293	<i>Passer moabiticus</i>	Dead Sea Sparrow				LC
294	<i>Fringilla coelebs</i>	Chaffinch				LC
295	<i>Fringilla montifringilla</i>	Brambling				LC
296	<i>Serinus pusillus</i>	Red-fronted Serin		√		LC

297	<i>Serinus serinus</i>	Serin		√		LC
298	<i>Carduelis chloris</i>	Greenfinch		√		LC
299	<i>Carduelis carduelis</i>	Goldfinch		√		LC
300	<i>Carduelis spinus</i>	Siskin		√		LC
301	<i>Carduelis cannabina</i>	Linnet		√		LC
302	<i>Bucanetes githagineus</i>	Trumpeter Finch	√			LC
303	<i>Emberiza citrinella</i>	Yellowhammer		√		LC
304	<i>Emberiza hortulana</i>	Ortolan Bunting	√			LC
305	<i>Emberiza caesia</i>	Cretzshmar's Bunting	√	√		LC
306	<i>Emberiza schoeniclus</i>	Reed Bunting		√		LC
307	<i>Emberiza melanocephala</i>	Black-headed Bunting		√		LC
308	<i>Miliaria calandra</i>	Corn Bunting				LC

LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered

6.4.2. Reptiles

The reptile interest on the peninsula includes the species listed in table 4 below, as identified in the LIFE project and subsequent work.

Table 4: Reptile species of Akrotiri Peninsula

Name	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Annex II to Directive 92/43/EEC	Listed in Annex IV to Directive 92/43/EEC	Listed in Annex II to the Bern Convention	CITES Protection	IUCN STATUS	EDEMIC	Listed as important species in LIFE Standard Data Form	Listed in Appendices to the Bonn Convention
<i>Ablepharus kitaibelii</i>		√		√	√		LC		√	
<i>Acanthodactylus schreiberi</i>							EN		√	
<i>Caretta caretta</i> *	√	√	√	√	√	√	EN		√	√
<i>Chalcides ocellatus</i>		√		√	√		LC		√	
<i>Chamaeleo chamaeleon</i>		√		√	√				√	
<i>Chelonia mydas</i> *	√	√	√	√	√	√	EN		√	√
<i>Coluber cypriensis</i> *	√	√	√	√	√		EN	√		
<i>Coluber jugularis</i>		√		√	√		LC		√	
<i>Coluber nummifer</i>		√		√					√	
<i>Cyrtopodion kotschyi</i>		√		√	√		LC		√	

<i>Eumeces schneideri</i>							LC		√	
<i>Hemidactylus turcicus</i>					√		LC		√	
<i>Lacerta laevis troodica</i>							LC	√	√	
<i>Mabuya vittata</i>							LC		√	
<i>Malpolon monspessulanus</i>							LC		√	
<i>Ophisops elegans</i>		√		√	√		LC		√	
<i>Stellio stellio</i>		√		√	√				√	
<i>Telescopus falax</i>		√		√	√		LC		√	
<i>Typhlops vermicularis</i>							LC		√	
<i>Vipera lebetina</i>					√				√	

*= priority species

6.4.3. Mammals

The mammal interest of the peninsula includes the species listed in table 5, as identified in the LIFE project and subsequent work.

Table 5: Mammal species of Akrotiri Peninsula

Name	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Annex II to Directive 92/43/EEC	Listed in Annex IV to Directive 92/43/EEC	Listed in Annex II to the Bern Convention	CITES ¹⁵ Protection	IUCN STATUS	ENDEMIC	Listed as important species in LIFE Standard Data Form	Listed in Appendices to the Bonn Convention
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<i>Monachus monachus</i> *	√	√	√		√		CR		√	√ (I)
<i>Rousettus aegyptiacus</i>	√	√	√		√		LC			
<i>Pipistrellus pipistrellus</i>		√		√			LC			
<i>Pipistrellus kuhli</i>		√		√	√					
<i>Miniopterus schreibersii</i>	√		√		√		NT			√ (II)
<i>Rhinolophus hipposideros</i>	√	√	√		√		LC			
<i>Rhinolophus ferrumequinum</i>	√	√	√		√		LC			
<i>Tursiops truncatus</i>	√	√	√		√		LC			√ (I)
<i>Delphinus delphis</i>		√			√		LC			√ (I)
<i>Stenella coeruleoalba</i>		√			√		LC		√	√ (II)
<i>Steno bredanensis</i>		√			√		LC			
<i>Crocidura russula cypria</i>					√		LC	√	√	
<i>Hemiechinus auritus dorotheae</i>							LC	√	√	
<i>Lepus europaeus cyprius</i>							LC	√	√	

*= priority species

6.4.4. Amphibians

The amphibians recorded on the peninsula in the LIFE project are listed in table 6.

Table 6: Amphibian species of Akrotiri Peninsula

Name	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Annex II to Directive 92/43/EEC	Listed in Annex IV to Directive 92/43/EEC	Listed in Annex II to the Bern Convention	CITES Protection	IUCN STATUS	ENDEMIC	Listed as important species in LIFE Standard Data Form	Listed in Appendices to the Bonn Convention
<i>Bufo viridis</i>		√		√	√		LC		√	
<i>Hyla savignyi</i>		√		√	√		LC		√	
<i>Rana ridibunda</i>							LC		√	

6.4.5. Invertebrates

The invertebrate interest of the peninsula identified in the LIFE project is listed in table 7.

Table 7: Invertebrate species of Akrotiri Peninsula

Name	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Annex II to Directive 92/43/EEC	Listed in Annex IV to Directive 92/43/EEC	Listed in Annex II to the Bern Convention	CITES Protection	IUCN STATUS	ENDEMIC	Listed as important species in LIFE Standard Data Form	ORDER
Terrestrial invertebrates										
<i>Orthetrum chrysostigma</i>							LC			Odonata
<i>Charaxes jasius</i>										Lepidoptera
<i>Syntarucus pirithous</i>										Lepidoptera
<i>Acmaeodera crinita perrinella</i>								√		Coleoptera
<i>Acmaeodera flavolineata cypricola</i>								√		Coleoptera
<i>Acmaeodera guillebeaui</i>										Coleoptera
<i>Acmaeodera quadrizonata</i>										Coleoptera
<i>Acmaeoderella flavofasciata placida</i>								√		Coleoptera
<i>Ameles cypria</i>								√		Dictyoptera
<i>Ammobates mavromoustakisi</i>								√		Hymenoptera
<i>Albinaria saxatilis avia</i>								√		Gastropoda
<i>Ammobius cyprius</i>								√		Coleoptera
<i>Andrena colletiformis insulana</i>								√		Hymenoptera
<i>Andrena limassolica</i>								√		Hymenoptera

<i>Andrena oratula cypria</i>								√		Hymenoptera
<i>Andrena tenuiformis</i>								√		Hymenoptera
<i>Andrena ungeri</i>								√		Hymenoptera
<i>Anoxia cypria</i>								√		Coleoptera
<i>Anthaxia brevis cypriota</i>								√		Coleoptera
<i>Anthophora acervorum cypriaca</i>								√		Hymenoptera
<i>Anthophora cyprica</i>								√		Hymenoptera
<i>Ateliotum arenbergeri</i>								√		Lepidoptera
<i>Aurigena susannae</i>								√		Coleoptera
<i>Bacillus cyprius</i>								√		Phasmida
<i>Blaps taeniolata</i>										Coleoptera
<i>Blepharopsis mendica</i>										Dictyoptera
<i>Broscus nobilis</i>										Coleoptera
<i>Bubas bubaloides</i>										Coleoptera
<i>Bucephaloptera cypria</i>								√		Coleoptera
<i>Cabirutus cribricollis</i>										Coleoptera
<i>Cardiophorus sacratus</i>										Coleoptera
<i>Cataphronetis reitteri cypria</i>										Coleoptera
<i>Cephalostenus alziari</i>								√		Coleoptera
<i>Cerceris cherkesiana</i>								√		Hymenoptera
<i>Cerceris cypriaca</i>								√		Hymenoptera
<i>Cerceris mavromoustakisi</i>										Hymenoptera
<i>Chazara briseis larnacana</i>								√		Lepidoptera
<i>Chilades galba</i>										Lepidoptera
<i>Chrysolina orientalis</i>										Coleoptera
<i>Clitobius oblongiusculus</i>										Coleoptera
<i>Cnephasia pumicana hagosana</i>								√		Lepidoptera
<i>Coleophora cypriacella</i>								√		Lepidoptera
<i>Colletes cyprius</i>								√		Hymenoptera
<i>Coptosia ganglbaueri</i>										Coleoptera
<i>Crossobela barysphena</i>								√		Lepidoptera

<i>Lasioglossum hellenicum</i>								√		Hymenoptera
<i>Leiopus syriacus</i>										Coleoptera
<i>Leptobium fageli</i>								√		Coleoptera
<i>Libelloides macaronius</i>										Neuroptera
<i>Lophyridia aphrodisiac cypricola</i>								√		Coleoptera
<i>Lycaena thersamon</i>										Lepidoptera
<i>Maniola cypricola</i>								√		Lepidoptera
<i>Megacephala euphratica</i>										Coleoptera
<i>Megachile cypricola</i>								√		Hymenoptera
<i>Megachile roewerei akrotirica</i>								√		Hymenoptera
<i>Megachile sericans cyprica</i>								√		Hymenoptera
<i>Orthetrum sabina</i>										Odonata
<i>Osmia amathusica</i>								√		Hymenoptera
<i>Osmia cypriaca</i>								√		Hymenoptera
<i>Osmia idalia</i>								√		Hymenoptera
<i>Osmia limassolica</i>								√		Hymenoptera
<i>Osmia nicosiana</i>								√		Hymenoptera
<i>Pelopidas thrax</i>										Lepidoptera
<i>Pendoton bidens sulcifrons</i>										Coleoptera
<i>Phaleria provincialis cypria</i>								√		Coleoptera
<i>Pimelia bajula</i>										Coleoptera
<i>Pleurota pyropella idalia</i>								√		Lepidoptera
<i>Potosia cuprea ikonowii</i>								√		Coleoptera
<i>Prinobius myardi</i>										Coleoptera
<i>Proanthidium undulatum holozonicum</i>								√		Hymenoptera
<i>Carabus (Procrustes) anatolicus anatolicus</i>								√		Coleoptera
<i>Prosopis cypria</i>								√		Hymenoptera

<i>Prosopis maculiscutum</i>								√		Hymenoptera
<i>Psalidium aurigerum</i>								√		Coleoptera
<i>Pseudoseriscius griseovestis</i>										Coleoptera
<i>Pseudoxerophila confusa</i>								√		Gastropoda
<i>Pyrgomorpha cypria</i>								√		Orthoptera
<i>Quedius troodites</i>								√		Coleoptera
<i>Raiboscelis cyprius</i>								√		Coleoptera
<i>Selidosema tamsi</i>								√		Lepidoptera
<i>Selysiothermis nigra</i>										Odonata
<i>Smicromyrme mavromoustakisi</i>								√		Hymenoptera
<i>Sphecodes cypricus</i>								√		Hymenoptera
<i>Sphecodes quadratus cephalotiformis</i>								√		Hymenoptera
<i>Sphodromantis viridis</i>										Dictyoptera
<i>Stenosis sulcata</i>										
<i>Tarsalia ancyliiformis mediterranea</i>								√		Hymenoptera
<i>Tarsalia hirtipes cypriaca</i>								√		Hymenoptera
<i>Tentyria cylindrical</i>										Coleoptera
<i>Tentyria cypria</i>								√		Coleoptera
<i>Tentyrina orbiculata subsulcata</i>										Coleoptera
<i>Trachyderma philistine</i>										Coleoptera
<i>Trithemis festiva cyprica</i>								√		Odonata
<i>Trochoidea liebetruti</i>								√		Gastropoda
<i>Truxalis eximia cypria</i>								√		Orthoptera
<i>Xanthomus cyprius</i>								√		Coleoptera
<i>Xeropicta akrotirica</i>								√		Gastropoda
<i>Zizeeria karsandra</i>										Lepidoptera
Marine invertebrates										
<i>Lithophaga lithophaga</i>		√		√	√				√	

<i>Pinna nobilis</i>		√		√					√
<i>Ocypode cursor</i>					√				√
<i>Charonia tritonis</i>					√				√
<i>Erosaria spurca</i>					√				√
<i>Luria lurida</i>					√				
<i>Tonna galea</i>					√				
<i>Asterina pancerii</i>					√				
<i>Ophidiaster ophidianus</i>					√				
<i>Centrostephanus longispinus</i>				√	√				√
<i>Axinella cannabina</i>									√
<i>Axinella polypoides</i>									√

Coleoptera = Beetles, Dictyoptera = Cockroaches and mantids, Gastropoda = Slugs and snails, Hymenoptera = Bees, wasps and ants, Lepidoptera = Moths and butterflies, Neuroptera = Lacewings, Odonata = Dragonflies and damselflies, Orthoptera = Crickets, grasshoppers and locusts, Phasmida = Stick insects

6.4.6. Fishes

The fish species recorded on the peninsula in the LIFE project are listed in table 8.

Table 8: Fish species at Akrotiri area

Name	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Annex II to Directive 92/43/EEC	Listed in Annex IV to Directive 92/43/EEC	Listed in Annex II to the Bern Convention	CITES Protection	IUCN STATUS	ENDEMIC	Listed as important species in LIFE Standard Data Form
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<i>Aphanius fasciatus</i>	√		√		√		LC		
<i>Hippocampus hippocampus</i>					√		DD		√
<i>Hippocampus ramulosus</i>					√		DD		√
<i>Mobular mobular</i>					√				√

7. Important conservation features

7.1. Evaluation criteria for habitats

The habitat evaluation criteria include the following:

- Whether or not a natural habitat of European interest requiring protection through SAC designation (habitat of schedule 1 to the Protection and Management of Nature and Wildlife Ordinance).
- Whether or not a priority SAC habitat.
- Importance of habitat in Cyprus, including its wider distribution and ecological context in Cyprus.
- Other Ratcliffe criteria: size, naturalness, typicalness, diversity and position in the ecological/geographical unit.
- Whether or not a habitat included in the Akrotiri Ramsar site designation.

7.2. Criteria for species

7.2.1. Bird criteria

The following criteria are applicable to the management of bird interest, which are reflected in the SPA criteria on which Akrotiri Wetlands and Akrotiri Cliffs were designated.

- Whether or not a wild bird species listed in Schedule 1 to the Game and Wild Birds Ordinance, requiring protection through designation of SPAs.
- Whether or not a regularly occurring migratory bird species (Section 8(2) of the Game and Wild Birds Ordinance).
- Whether or not a wild bird species included in the SPA designation of Akrotiri wetlands and Akrotiri cliffs.
- Whether or not included in Annex II to the Bern Convention.
- Whether or not included in Appendix I or II to the Bonn Convention.
- IUCN status.
- Whether or not a Cyprus endemic.

- Whether or not included in the Akrotiri Ramsar site designation.

7.2.2. Other-fauna species criteria (reptile, mammal, amphibian, invertebrate, fish)

- Whether or not included in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance, as a species of European interest requiring protection through the designation and management of SACs.
- Whether or not listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance as a priority species.
- Whether or not included in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance, as species of European interest in need of special protection.
- Whether or not included in Annex II to the Bern Convention.
- Whether or not included in Appendices I or II to the Bonn Convention.
- IUCN status.
- Whether or not an endemic species.
- Populations supported at Akrotiri in context with the rest of Cyprus.

7.2.3. Flora criteria

- Whether or not listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance.
- Whether or not listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance as a priority species.
- Whether or not listed in Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance.
- Whether or not listed in Annex I to the Bern Convention.
- Whether or not listed in the Red Data Book of the Flora of Cyprus.
- Regional IUCN status.
- Whether or not an endemic species.
- Whether or not included in the Akrotiri Ramsar site designation.

7.3. Important habitats

7.3.1. Priority habitats

There are four types of priority natural habitats on the peninsula, which are of European interest requiring strict protection through SAC designation under the Protection and Management of Nature and Wildlife Ordinance. These are Posidonia beds (habitat code 1120), Lagoons (habitat code 1150), coastal dunes with Juniperus species (habitat code 2250) and Pseudo steppes with grasses and annuals (habitat code 6220). The extent of the three terrestrial habitats (1150, 2250 and 6220) has been accurately surveyed in the LIFE project, whereas the marine one (1120) has only been mapped approximately and requires further work.

The extent of the three terrestrial habitats and the approximate extent of the marine habitat are shown on map12.

Since the four priority habitats are afforded strict protection through the Nature Ordinance, no further qualification criteria need to be applied.



Map 12: Priority habitats

7.3.2. Natural habitats of European interest requiring protection through SAC designation

Besides the four priority habitat types listed in 5.1.1, there are 26 habitat types of European interest on the peninsula requiring protection and management through SAC designation under the Nature Ordinance. These are listed in table 9 below.

Table 9: Non-priority SAC habitats at Akrotiri Peninsula

Code	Habitat
1110	Sandbanks slightly covered by sea water all the time
1170	Reefs
1210	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks
1240	Vegetated sea cliffs of the Mediterranean coasts
1310	Salicornia and other annuals colonising mud and sand
1410	Mediterranean salt meadows
1420	Mediterranean halophilous scrubs
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline
2190	Humid dune slacks
2230	Malcolmietalia dune grasslands
2240	Brachypodietalia dune grasslands with annuals
2260	Dune sclerophyllous scrubs
3140	Hard oligo-mesotrophic waters with benthic vegetation of chara formations
5212	Juniperus formations
5420	Cisto-Micromeretea phrygana
6420	Mediterranean tall-herb and rush meadows
8330	Submerged or partly submerged sea caves
9320	Olea and Ceratonia forests
9540	Mediterranean forests with endemic Mesogean pines
92DO	Thermo-Mediterranean riparian galleries
	Wet sand (sandflats)

The extent of these habitats is shown on map 2.

For a full evaluation of these habitats, which will determine their SAC designation and management interest, the following criteria are required:

7.3.2.1. Quantitative and qualitative context of each habitat at Akrotiri Peninsula in relation to the rest of Cyprus.

The existing LIFE information provides a basis for the quantitative part for such evaluation as shown in maps 13-34, but more work is required in co-operation with the appropriate authorities of the RoC for the qualitative part.

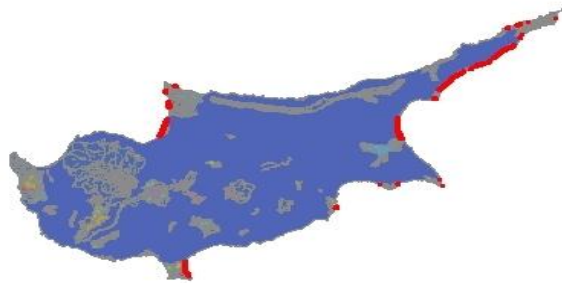
7.3.2.2. Position of each habitat in the ecological context of Cyprus.



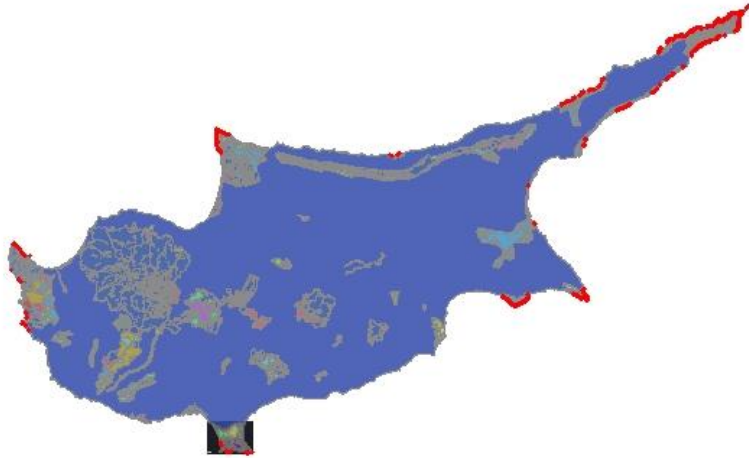
Map13: 1110, Sandbanks slightly covered by sea water all the time



Map14: 1170, Reefs



Map15: 1210, Annual vegetation of drift lines



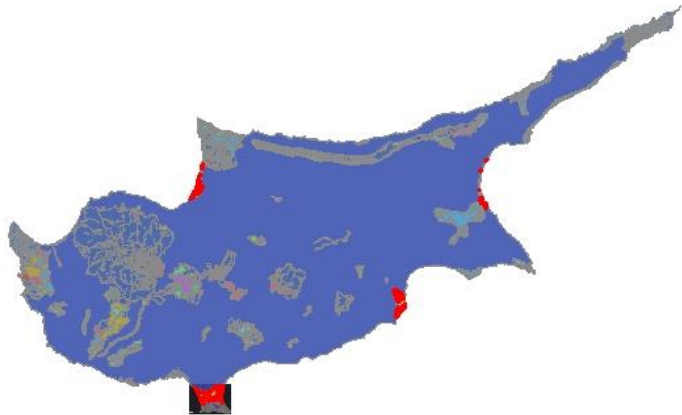
Map16: 1240, Vegetated sea cliffs of the Mediterranean coasts



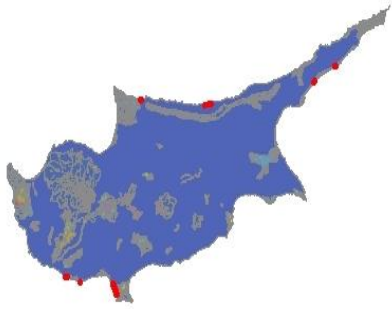
Map17: 1310, Salicornia and other annuals colonising mud and sand



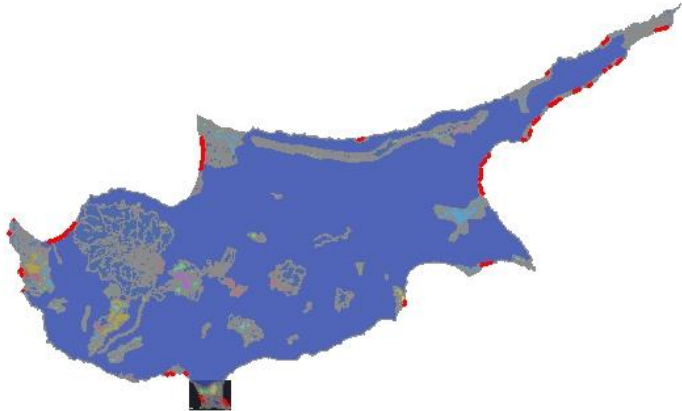
Map18: 1410, Mediterranean salt meadows



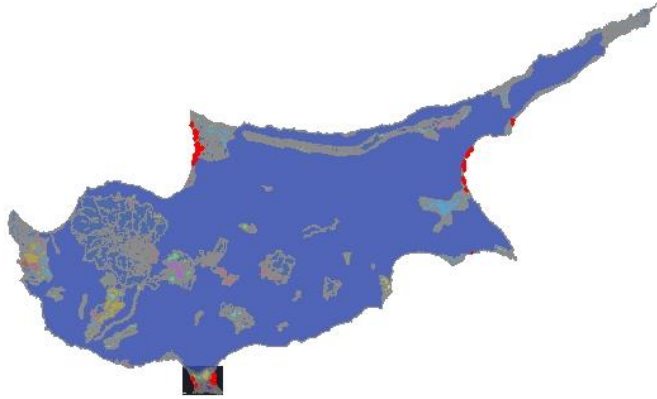
Map19: 1420, Mediterranean halophilous scrubs



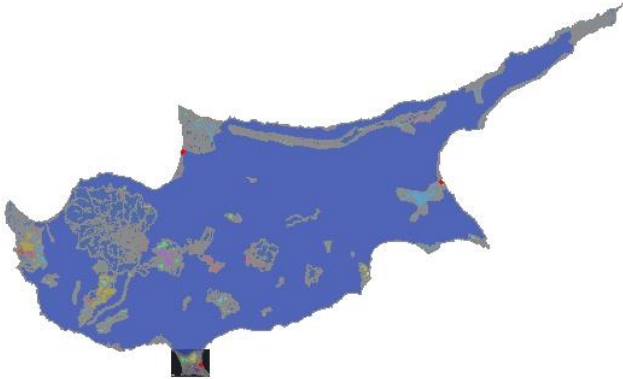
Map 20: 1220, Perennial vegetation of stony banks



Map 21: 2110, Embryonic shifting dunes



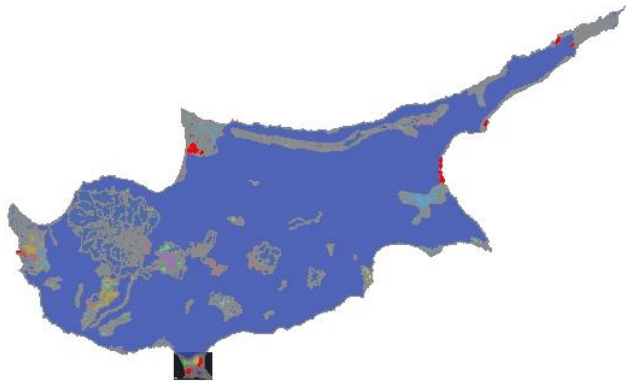
Map 22: 2120, Shifting dunes along the shoreline



Map 23: 2190. Humid dune slacks



Map 24: 2230, Malcolmietalia dune grasslands



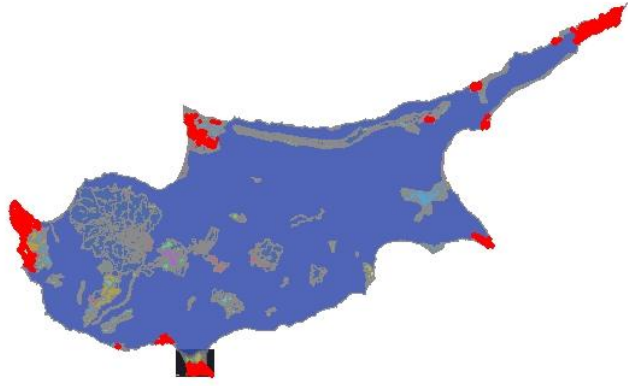
Map 25: 2240, Brachypodietalia dune grasslands with annuals



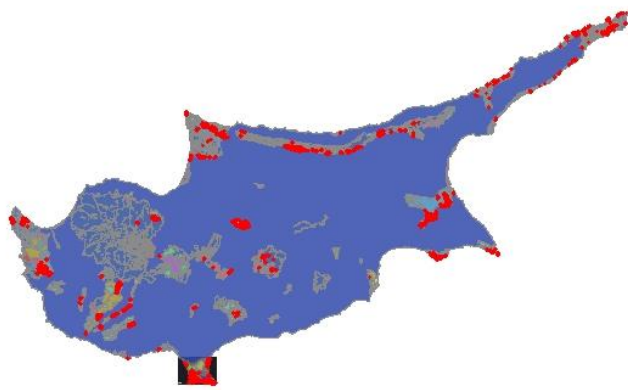
Map 26: 2260, Dune sclerophyllous scrubs



Map 27: 3140, Hard oligo-mesotrophic waters with benthic vegetation of chara formations



Map 28: 5212, *Juniperus* formations



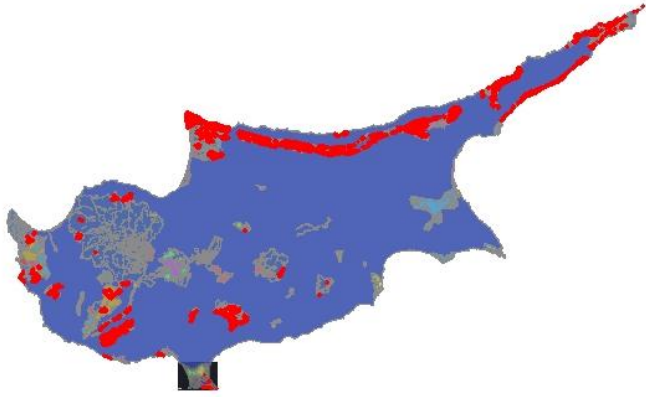
Map 29: 5420, *Cisto-Micromeretea phrygana*



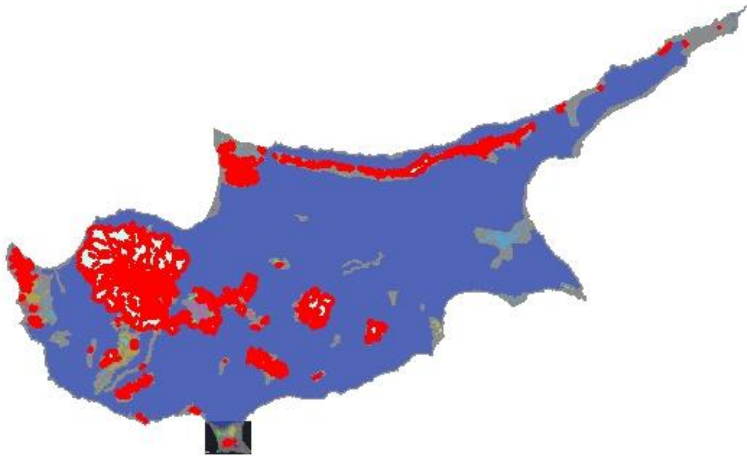
Map 30 : 6420, Mediterranean tall-herb and rush meadows



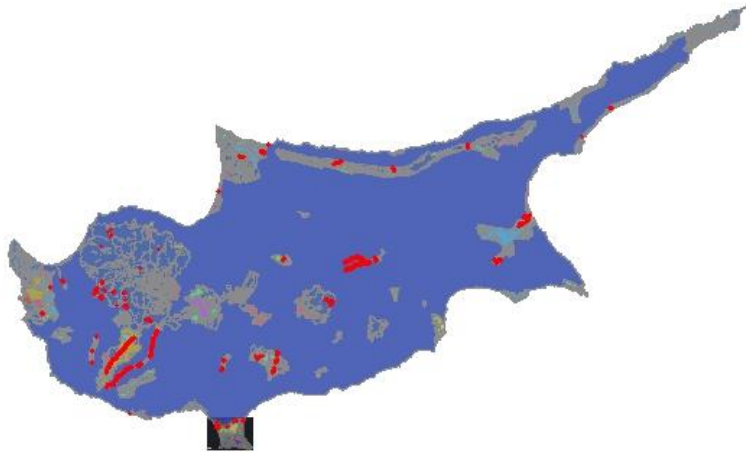
Map 31: 8330, Submerged or partly submerged sea caves



Map 32: 9320, *Olea* and *Ceratonia* forests



Map 33: 9540, Mediterranean forests with endemic Mesogean pines



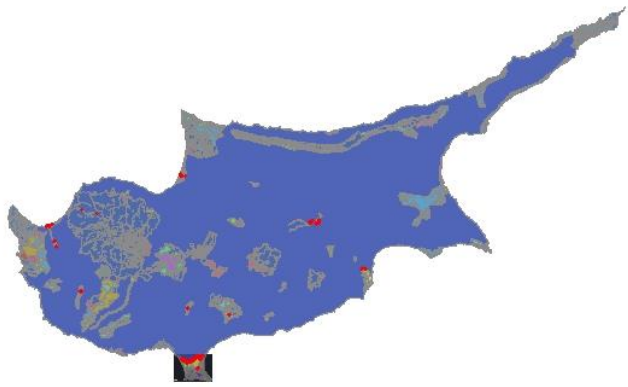
Map 34: 92DO, Thermo-Mediterranean riparian galleries

7.3.3. Cyprian habitats

Two Cyprian habitats, which are not included in the list of SAC habitats, occur at the peninsula, namely Sand beaches-turtle nesting grounds (CY05) and Reedbeds and sedgebeds (CY02). The distribution of these two habitats is shown on maps 35 and 36. It has been proposed to EU by the RoC to include these two along with other Cyprian habitats in the SAC habitat list. In any event, the first habitat is afforded strict protection, as it provides nesting to two priority turtle species, and the second is a prime habitat to much bird interest and thus is protected under the SPA interest. It should be noted that the turtle nesting interest covers other areas at Episkopi and Akrotiri, which are not shown as an SAC habitat on map 35. All Akrotiri turtle nesting sites are shown on map 93.



Map 35: Sand-beaches-turtle nesting grounds (CY05)



Map 36: Reedbeds and sedgebeds (CY02)

7.3.4. Remaining natural habitat

The remaining natural habitat, which needs to be confirmed under the SAC designation, is wet sand or sandflats, as shown on map 2.

This type of habitat has been characterized in different ways/systems, one of which identified it as a priority habitat. This area has been included in the SPA designation for the bird interest it supports, and most of it has been included in the Akrotiri Ramsar Site designation.

7.3.5. Brief description of habitats

A brief description of each habitat has been provided by the LIFE project as follows.

7.3.5.1. Marine habitats

The western shores are exposed to prevailing westerly winds and waves and exhibit the ecological characteristics of exposed and semi exposed shores. The southern part of the coast is rocky with high cliffs and partly submerged sea caves, whereas the eastern and small parts of the western coast are sandy. The western coast mostly comprises shingle beaches. The seabed around the peninsula is generally of fine sand, but becomes muddy towards Limassol bay.

(1120) Posidonia beds: Occur at a depth of 0-40 metres around most of the peninsula, except the north-western part.

(1150) Lagoons: Include the Salt Lake and the surrounding depressions. The main plants are *Ruppia maritima* and *Chara* spp. Unicellular algae are also present in the Salt Lake.

(1110) Sandbanks slightly covered by the sea all the time: These stretch along the sandy beaches at depths between 0 and 10 metres. The main species is *Cymodocea nodosa*.

(1170) Reefs: These are found south of the peninsula.

(8330) Submerged or partially submerged sea caves: These are found along the southern coast of the peninsula between Cape Gata and Cape Zevgari.

7.3.5.2. Terrestrial habitats

The terrestrial landscape is characterized by coastal wetlands and sand dune systems and shrubs.

(2250) Dune Juniper Thickets-Juniperus spp. (*Quercetea ilicis*): The main plants are: *Juniperus phoenicea* and *Pistacia lentiscus*. Parts of this habitat, although dominated by *Juniperus phoenicea*, have been planted with *Pinus halepensis* since 1900.

(6220) Pseudo-steppe with grasses and annuals: These habitats are scattered at many parts of the site, mainly in openings within shrubs. The main plants are: *Trachynia distachya*, *Stipa capensis*, *Hyparrhenia hirta*, *Aegilops geniculata*, *Avena barbata*, *Bellevalia* spp., *Biscutella didyma*, *Bromus* spp., *Gagea* spp., *Geranium* spp., *Hedysarum spinosissimum*, *Hyacinthella millingenii*, *Lagurus ovatus*, *Muscari* spp., *Onobrychis crista-galli*, *Ornithogalum* spp., *Oryzopsis* spp., *Poa bulbosa*, *Plantago* spp., *Romulea tempskyana*, *Silene* spp., *Trifolium* spp.

(1210) Annual vegetation of drift lines (*Cakiletea maritamae*): This habitat stretches along the sandy and gravelly drift lines. The main plants are: *Cakile maritima*, *Salsola kali*, *Medicago litoralis*, *Euphorbia peplis*, *Lotus alophilus*, *Matthiola tricuspidata*.

(1220) Perennial vegetation of stony banks: This habitat is present along the western coast of the peninsula. The main plants are: *Taraxacum aphrogenes* (endemic to Cyprus), *Centaurea aegialophila*, *Limonium sinuatum*, *Malcolmia nana*, *Matthiola tricuspidata*, *Medicago marina*.

(1240) Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp: This habitat is found at places along the southern and western coast. The main plants are: *Crithmum maritimum*, *Limonium echioides*, *Limonium sinuatum*, *Limonium virgatum*, *Cichorium spinosum*, *Convolvulus oleifolius*, *Echium angustifolium*, *Euphorbia cassia* subsp. *cassia*, *Silene sedoides*. Behind this zone there is often a transitional zone with mixed phryganic (*Thymus capitatus*) and aerohalophilic communities.

(1310) Salicornia and other annuals colonising mud and sand (*Thero-salicornietea* and *Saginetea maritima*): This habitat is found at the margins of the Salt Lake and lagoons at the northeastern part of the site. The main plants are: *Salicornia europaea*, *Halopeplis amplexicaulis*, *Sueda maritima*, *Cressa cretica*, *Frankenia pulverulenta*, *Hordeum marinum*, *Parapholis marginata*, *Sphenopus divaricatus*, *Spergularia marina*.

(1410) Mediterranean salt meadows (*Juncetea maritimi* - *Juncetalia maritimi*): The main plants are: *Juncus maritimus*, *Juncus accutus*, *Juncus articulatus*, *Juncus heldreichianus*, *Juncus hybridus*, *Juncus littoralis*, *Juncus rigidus*, *Juncus subulatus*, *Aeluropus lagopoides*, *Agropyron elongatum*, *Bolboschoenus maritimus*, *Carex distans*, *Carex divisa*, *Carex extensa*, *Centaureum pulchellum*, *Centaureum tenuiflorum*, *Crypsis factorovskyi*, *Hordeum marinum*, *Imperata cylindrica*, *Limonium mucronulatum*, *Linum maritimum*, *Parapholis marginata*, *Plantago maritima* subsp. *crassifolia*, *Saccharum ravennae*, *Schoenoplectus littoralis*, *Schoenus nigricans*, *Scirpoides holoschoenus*, *Triglochin bulbosa*. The particular community of *Plantaginion crassifoliae* is included in this habitat.

(1420) Mediterranean halophilous scrubs (*Arthrocnemetalia fruticosi*): This habitat is present at the salt marshes and meadows around the lake. The main plants are: *Arthrocnemum macrostachyum*, *Salicornia fruticosa*, *Salicornia perennis*, *Halimione portulacoides*, *Halocnemum strobilaceum*, *Inula crithmoides*, *Spergularia marina*, *Sueda vera*, *Limonium*, *mucronulatum*. Within this habitat a community of low fixed sand dunes, dominated by *Arthrocnemum macrostachyum* occurs.

(2110) Embryonic shifting dunes. The main plants are: *Otanthus maritimus*, *Agropyron junceum*, *Cyperus capitatus*, *Eryngium maritimum*, *Medicago marina*, *Pancratium maritimum* and *Sporobolus virginicus*.

(2120) Shifting dunes along the shoreline (white dunes). These occupy: (i) part of Episkopi bay with special characteristic that the dominant fixing species is *Zygophyllum album*, while the other species are *Medicago marina*, *Asparagus stipularis*, *Sporobolus virginicus*, *Centaurea aegialophila*; (ii) part of Limassol bay where at some places the characteristic is that the dominant fixing species are *Saccharum ravennae* and *Imperata cylindrica*, while other species are *Medicago marina*, *Pancratium maritimum*, *Zygophyllum album*, *Agropyron junceum*, *Lotus cytisoides*, *Asparagus stipularis*, *Centaurea aegialophila* and *Eryngium maritimum*.

(2190) Humid dune slacks: These occupy small patches of the dune system at Limassol bay within the Bishopric Farm area. The main species are: *Plantago maritima* subsp. *crassifolia*, *Juncus* spp., *Saccharum ravennae*.

(2230) Malcolmietalia dune grasslands: This habitat occupies patches of the dune system at Limassol bay. The main species are: *Malcolmia nana*, *Pseudorlaya pumila*, *Silene colorata*, *Valantia hispida*.

(2240) Brachypodietalia dune grasslands with annuals: This habitat occupies patches of the dune systems with 2250 and 2260. The main species are: *Trachynia distachya*, *Aegilops bicornis*, *Brassica tournefortii*, *Hedysarum spinosissimum*, *Silene colorata*, *Vulpia membranacea*, *Tuberaria guttata*, *Parapholis marginata* and *Silene discolor*.

(2260) Dune sclerophyllous scrubs: Within this habitat type three plant communities are recognised: a) *Thymus capitatus*, *Teucrium micropodioides*, *Helianthemum stipulatum*, *Cistus* spp., *Echium angustifolium*, *Fumana thymifolia*, which occurs near salt marshes b) *Pistacia lentiscus*, *Asparagus stipularis*, *Rhamnus oleoides* subsp. *graecus*, *Helianthemum stipulatum*, which occurs near salt marshes with special characteristic that the dominating species is *Pistacia lentiscus* c) On flat encrusted sand along the western coast a distinct community occurs with : *Thymelaea hirsuta*, *Lycium sweinfurthii*, *Noaea mucronata*, *Phagnalon rupestre*, *Echium angustifolium*. This community deviates from the typical ones of the habitat and merits further investigation and special treatment.

(3140) Hard oligo-mesotrophic waters with benthic vegetation of Chara formations: It is found at few places at Fassouri marsh. The main plants are *Chara* spp.

(5212) Juniper formations (*Juniperus phoenicea* arborescent matorral): *Juniperus phoenicea*, *Ceratonia siliqua*, *Cistus* spp., *Myrtus communis*, *Olea europaea*, *Pistacia lentiscus*, *Prasium majus*, *Rhamnus oleoides* subsp. *graecus*, *Thymus capitatus*, *Thymelaea hirsuta*.

(5420) Cisto-Micromeretea phrygana: The main plants are: *Sarcopoterium spinosum*, *Thymus capitatus*, *Cistus* spp., *Convolvulus oleifolius*, *Fumana* spp., *Helianthemum obtusifolium*, *Helianthemum* spp., *Helichrysum conglobatum*, *Lithodora hispidula* subsp. *Versicolor*, *Micromenia* spp., *Noaea mucronata*, *onosma fruticosa*, *Phagnalon rupestre*, *Teucrium* spp. The following formations are included in this habitat type: a) *Sarcopoterium spinosum* phrygana, b) *Thymus capitatus* phrygana, c) the rare *Thymelaea hirsuta* phrygana. Of special interest are the degraded and dwarf phrygana dominated by *Schoenus nigricans* that form distinct communities within this habitat at several areas of the site.

(6420) Mediterranean tall-herb and rush meadows (Molinio-Holoscoenion): These occur at Fassouri marsh. The main species are: *Panicum repens*, *Baldellia ranunculoides*, *Teucrium scordium* subsp. *scorpioides*, *Centaurea calcitrapa* subsp. *angusticeps*, *Cyperaceae* spp., *Juncus* spp., *Lotus corniculatus*, *Lythrum junceum*, *Mentha aquatica*, *Ononis spinosa*, *Pulicaria dysenderica* subsp. *Uliginosa*, *Ranunculus peltatus*, *Saccharum ravennae*, *Schoenus nigricans*, *Scirpoides holoschoenus* and *Euphorbia pubescens*. The communities of the very rare *Baldellia ranunculoides* merit further investigation and special treatment.

(92DO) Thermo-Mediterranean riparian galleries (Nerio-Tamariceteae): These are found mainly at the north and north-western part of the site, with main plants: *Tamarix tetragyna*, *Asparagus stipularis*.

(9320) Olea and Ceratonia forest: *Pistacia lentiscus*, *Rhamnus oleoides* subsp. *graecus*, *Olea europaea* subsp. *silvestris*, *Ceratonia siliqua*, *Calycotome villosa*, *Genista fasselata*, *Myrtus communis*, *Pistacia terebinthus*, *Prasium majus*.

(9540) Mediterranean forests with endemic Mesogean pines: These are found at some parts of the site with main plants: *Pinus brutia*, *Pistacia lentiscus*, *Cistus* spp., *Juniperus phoenicea*, *Lithodora hispidula* subsp. *versicolor*, *Myrtus communis*, *Pistacia terebinthus*, *Rhamnus oleoides* subsp. *graecus*, *Thymus capitatus*.

(CY02) Reed beds and sedges: These occur extensively at the northern and north-western parts of the site. The main plants are: *Phragmites australis*, *Imperata cylindrica*, *Calystegia sepium*, *Cladium mariscus*, *Saccharum ravennae*, *Juncus* spp. and *Scirpus maritimus*.

(CY05) Sand beaches – turtle nesting grounds, on the front line of sandy coasts, devoid of vegetation or with sparse vegetation of drift line communities.

Sandflats: Sandy areas with seasonal inundation with sparse or no vegetation, but important to small waders during seasons when the water levels are higher within the Salt Lake and significant contribution to the formation of thermals during drier periods. Also an area connecting the Salt Lake to the sea on a seasonal basis.

7.4. Important flora

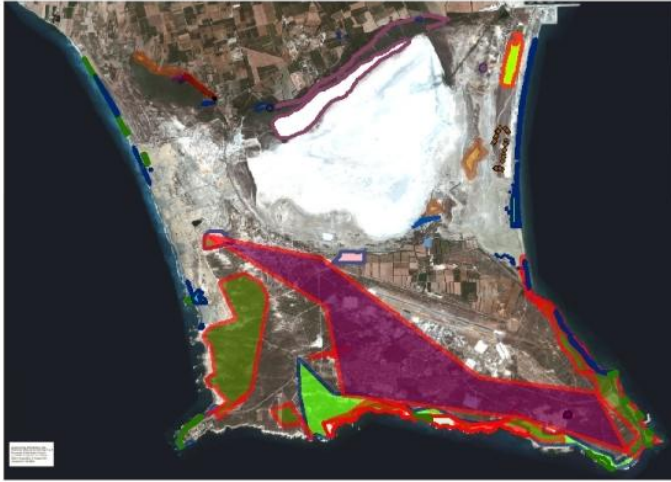
Application of the evaluation criteria identifies the species in table 10 below, as the most important plants for management at the peninsula. The evaluation has been based on the work and the results of the Red Data Book of the Flora of Cyprus, but also two marine species have been included. These are *Cymodocea nodosa* as an important food source for Green turtles and *Posidonia oceanica* as the dominant species in the priority Posidonia beds habitat.

Table 10: Important plants at Akrotiri Peninsula

Name	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Schedule 2 to the Protection and Management of Nature and Wildlife Ordinance as a priority species	Listed IN Schedule 3 to the Protection and Management of Nature and Wildlife Ordinance	Listed in Annex I to the Bern Convention	Listed in Red Data Book of the Flora of Cyprus	Regional IUCN threat category	Global IUCN threat category	Endemic	Listed as important species in LIFE Standard Data Form	Included in Akrotiri Ramsar citation
<i>Ophrys kotschyi</i>	√	√	√	√	√	VU		√	√	√
<i>Achillea maritima</i>					√	VU				
<i>Aegilops bicornis</i>					√	VU				
<i>Baldelia ranunculoides</i>					√	RE			√	
<i>Cistanche phelypaea</i>					√	CR			√	
<i>Cladium mariscus</i>					√	VU				
<i>Convolvulus lineatus</i>					√	VU				
<i>Convolvulus x cyprius</i>								√		√
<i>Coronilla repanda</i> subsp. <i>Repanda</i>					√	VU				
<i>Crypsis factorovskyi</i>					√	VU				

<i>Cymodocea nodosa</i>						LC		√	
<i>Erodium crassifolium</i>				√	VU				
<i>Euphorbia pubescens</i>				√	DD				
<i>Hemiaria hemistemon</i>				√	VU				
<i>Ipomoea imperati</i>				√	EN				
<i>Ipomoea sagittata</i>				√	CR				√
<i>Isolepis cernua</i>				√	EN				
<i>Juncus littoralis</i>				√	VU				
<i>Juncus maritimus</i>				√	VU				√
<i>Linum maritimum</i>				√	VU				√
<i>Lotus cytisoides</i>				√	EN				√
<i>Mentha aquatica</i>				√	CR				√
<i>Orchis palustris</i>				√	CR			√	
<i>Pancratium maritimum</i>				√	NT			√	
<i>Phyla nodiflora</i>				√	VU				
<i>Plantago loeflingii</i>				√	DD				
<i>Posidonia oceanica</i>						LC		√	
<i>Saccharum strictum</i>				√	DD				
<i>Scirpus lacustris subsp. Tabernaemontani</i>				√	EN				
<i>Serapias aphroditae</i>				√	VU		√	√	
<i>Serapias parviflora</i>				√	CR			√	
<i>Taraxacum aphrogenes</i>				√	VU		√	√	
<i>Triplanche nitens</i>				√	VU				
<i>Urtica membranacea</i>				√	VU				
<i>Vulpia brevis</i>				√	CR				

The distribution of the important species of flora at the peninsula is shown on map 37 and their distribution in the whole of Cyprus on maps 38-66.



Map 37: Important flora



Map 38: *Achillea maritima*



Map 39: *Aegilops bicornis*



Map 40: *Baldelia ranunculoides*



Map 41: *Cistanche phelypaea*



Map 42: *Cladium mariscus*



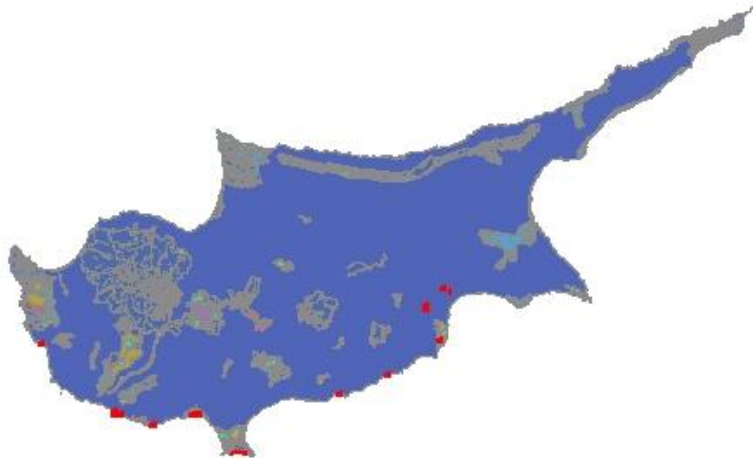
Map 43: *Convolvulus lineatus*



Map 44: *Coronilla repanda* subsp. *repanda*



Map 45: *Crypsis factorovskyi*



Map 46: *Erodium crassifolium*



Map 47: *Euphorbia pubescens*



Map 48: *Herniaria hemistemon*



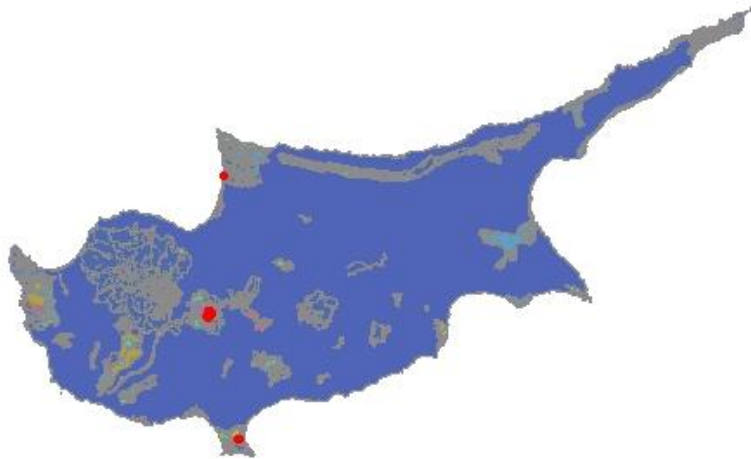
Map 49: *Ipomoea imperati*



Map 50: *Ipomoea sagittata*



Map 51: *Isolepis cernua*



Map 52: *Juncus littoralis*



Map 53: *Juncus maritimus*



Map 54: *Linum maritimum*



Map 55: *Lotus cytisoides*



Map 56: *Mentha aquatica*



Map 57: *Orchis palustris*



Map 58: *Pancratium maritimum*



Map 59: *Phyla nodiflora*



Map 60: *Scirpus lacustris* subsp. *tabernaemontani*



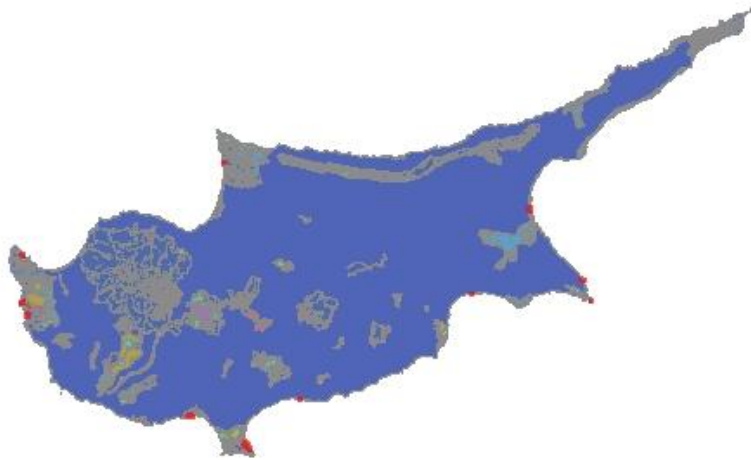
Map 61: *Serapias aphroditae*



Map 62: *Serapias parviflora*



Map 63: *Taraxacum aphrogenes*



Map 64: *Triplanche nitens*



Map 65: *Urtica membranacea*



Map 66: *Vulpia brevis*

7.5. Important birds

7.5.1. Species listed in Schedule 1 to the Game and Wild Birds Ordinance

Out of the 308 bird species recorded at Akrotiri Peninsula, 100 species are listed in Schedule 1 to the Game and Wild Birds Ordinance, requiring protection through the designation of SPAs. Out of these, the following have been identified as qualifying species for the SPA designation of Akrotiri Wetlands and Akrotiri Cliffs:

Scientific name	Common name
<i>Anthropoides virgo</i>	Demoiselle Crane
<i>Ardea purpurea</i>	Purple Heron
<i>Ardeola ralloides</i>	Squacco Heron
<i>Aythya nyroca</i>	Ferruginous Duck
<i>Calidris minuta</i>	Little Stint
<i>Charadrius alexandrinus</i>	Kentish Plover
<i>Charadrius leschenaultia</i>	Greater sand Plover
<i>Chlidonias leucopterus</i>	White-winged Tern
<i>Circus aeruginosus</i>	Western Marsh Harrier
<i>Circus macrourus</i>	Pallid Harrier
<i>Falco cherrug</i>	Saker Falcon
<i>Falco eleonora</i>	Eleonora's Falcon
<i>Falco peregrinus</i>	Peregrine Falcon
<i>Falco vespertinus</i>	Red-footed Falcon
<i>Glareola pratincola</i>	Collared Pratincole
<i>Grus grus</i>	Crane
<i>Himantopus himantopus</i>	Black-winged Stilt
<i>Larus genei</i>	Slender-billed Gull
<i>Merops apiaster</i>	European Bee-eater
<i>Pelecanus onocrotalus</i>	Great White Pelican
<i>Pernis apivorus</i>	European Honey Buzzard
<i>Phalacrocorax aristotelis desmarestii</i>	European (Mediterranean) Shag
<i>Philomachus pugnax</i>	Ruff

<i>Phoenicopterus roseus</i>	Greater Flamingo
<i>Plegadis falcinellus</i>	Glossy Ibis
<i>Sterna(Gelochelidon) nilotica</i>	Gull-billed Tern
<i>Tadorna tadoma</i>	Shelduck
<i>Vanellus spinosus</i>	Spur-winged Plover

It is noted that besides the individual bird species above, the Akrotiri SPA designation includes the groups of raptors, cranes and waterbirds as qualifying features.

The interest of each of the qualifying birds is shown on maps 67- 90.



Map 67: *Anthropoides virgo*, Demoiselle Crane



Map 68: *Ardea purpurea*, Purple Heron



Map 69: *Ardeola ralloides*, Squacco Heron



Map 70: *Aythya nyroca*, Ferruginous Duck



Map 71: *Calidris minuta*, Little Stint



Map 72: *Charadrius alexandrinus*, Kentish Plover



Map 73: *Charadrius leschenaultia*, Greater sand Plover and *Plegadis falcinellus*, Glossy Ibis



Map 74: *Chlidonias leucopterus*, White-winged Tern



Map 75: *Circus aeruginosus*, Western Marsh Harrier



Map 76: *Circus macrourus*, Pallid Harrier



Map 77: *Falco eleonora*, Eleonora's Falcon



Map 78: *Falco peregrinus*, Peregrine Falcon



Map 79: *Falco vespertinus*, Red-footed Falcon



Map 80: *Glareola pratincola* , Collared Pratincole



Map 81: *Grus grus*, Crane



Map 82: *Himantopus himantopus*, Black-winged Stilt



Map 83: *Larus genei*, Slender-billed Gull



Map 84: *Merops apiaster*, European Bee-eater



Map 85: *Pelecanus onocrotalus*, Great White Pelican



Map 86: *Phalacrocorax aristotelis desmarestii*, European (Mediterranean) Shag



Map 87: *Philomachus pugnax*, Ruff



Map 88: *Phoenicopterus roseus*, Greater Flamingo



Map 89: *Tadorna tadorna*, Shelduck



Map 90: *Vanellus spinosus*, Spur-winged Plover

7.5.2. Stone Curlew and Cyprus Warbler

In addition, there are records of two other Schedule I birds on the peninsula, namely Cyprus Warbler (*Sylvia melanothorax*) and Stone Curlew (*Burhinus oedichnemus*). These records in combination with the fact that the peninsula includes extensive habitat suitable for these birds, as shown on maps 91 and 92, necessitate further survey work to establish whether the SPA designation should be extended to cover the two species.



Map 91: Cyprus Warbler, *Sylvia melanothorax*



Map 92: Stone Curlew, *Burhinus oedichnemus*

7.6. Important reptiles

Three reptile species (*Caretta caretta*, *Chelonia mydas* and *Coluber cypriensis*) are listed in Schedule 2 to the Nature Ordinance, requiring protection and management through SAC designation. All three are listed as priority species. These three species along with *Acanthodactylus Schreiberi* are listed as Endangered by IUCN. The two turtle species and *Acanthodactylus Schreiberi* have significant populations at Akrotiri, whereas *Coluber cypriensis* does not, or may not be occurring at all.

7.6.1. Marine turtles

The marine turtle interest includes the nesting sites shown on map 93, with an average of 22 nests per season of *Caretta caretta* and 4 of *Chelonia mydas*, since 1994 when systematic recording has started.

The east coast of the peninsula was also used for nesting in the past, but this has ceased during the last few decades, presumably as a result of the heavy recreational use of the beaches.

There has been a considerable increase in the number of nests on the west coast in the last two years. In 2009, 49 Loggerhead nests and 5 Green nests were recorded. In 2010 there were 40 Loggerhead nests and 12 Green nests.

According to IUCN, the average number of documented nests in the Mediterranean is over 7,200 per year for the Loggerhead turtle and over 1,500 per year for the Green turtle, whilst the population trend for the Green turtle is decreasing.

The average number of turtle nests at Chrysochou Bay and West Coast during the last decades has been around 300 Loggerhead and 50 Green and during the last few years around 600 and 50 respectively. On Morphou Bay, Famagusta Bay and Kyrenia Coast the average nests during 1993-2007 were 236 Loggerhead and 104 Green.

Both Akrotiri and Episkopi Bays probably support grazing interest for the two species. A survey has been carried out to investigate the conflict of the turtle interest with fishing within Episkopi Bay. The results and recommendations of the survey can be found at http://www.sbaadministration.org/home/docs/eco/20120206-turtlesurvey-u-eco_V1.3.pdf.



Map 93: Turtle nesting sites

7.6.2. Schreiber's Fringe-fingered Lizard (*Acanthodactylus schreiberi*)

The Schreiber's Fringe-fingered Lizard (*Acanthodactylus schreiberi*) is a common lizard at Akrotiri. Its preferred habitat is made of coastal dunes or light soil close to the dunes. Furthermore, it can be found in newly created cultivated areas with sandy soil. It is an endangered species found only in Cyprus, Israel, Lebanon and Turkey.

Although no systematic data could be found for the populations and distribution of *Acanthodactylus schreiberi* in Cyprus, expert observations indicate that Akrotiri Peninsula is one of the important areas on island for this species. Map 94 represents an initial indication of the distribution of the species at Akrotiri , but further baseline surveys are required to complete the picture.



Map 94: Schreiber's Fringe-fingered Lizard, *Acanthodactylus schreiberi*

7.7. Important mammals

Six mammal species of the area (*Monachus monachus*, *Rousettus aegyptiacus*, *Miniopterus schreibersii*, *Rhinolophus hipposideros*, *Rhinolophus ferrumequinum*, *Tursiops truncatus*) are listed in Schedule 2 to the Nature Ordinance, requiring protection and management through SAC designation, with *Monachus monachus* listed as a priority species. *Monachus monachus* is listed as Critically Endangered by IUCN and *Miniopterus schreibersii* as Near Threatened.

7.7.1. Mediterranean Monk Seal (*Monachus monachus*)

The sea caves at Akrotiri cliffs are one of the few remaining breeding areas in Cyprus for the Mediterranean Monk Seal (*Monachus monachus*). This is the most endangered pinniped species in the world, with an estimated population of 350 – 450 individuals and is found in the Mediterranean sea region and the Northwest African coast.

7.7.2. Common Bentwing Bats (*Miniopterus schreibersii*)

Common Bentwing Bats (*Miniopterus schreibersii*) have been recorded at two cave roosts within RAF Station Akrotiri, with a maximum number of 28 individuals. According to IUCN, this species occurs in south-western Europe, north and west Africa, the Middle East, North Africa and West Africa.

7.7.3. Egyptian fruit-bat (*Rousettus aegyptiacus*)

The sea caves at the southern cliffs at Akrotiri host one of the important roosts of the Egyptian fruit-bat (*Rousettus aegyptiacus*). In recent years a maximum number of 1000 individuals have been recorded, the colony has in general, being diminishing during the last three years, following the general trend in Cyprus for this species. The Egyptian fruit-bat occurs in patchy distribution across sub-Saharan Africa, North Africa, the Middle East and areas in south-west Asia. Cyprus is near the northern boundary of its range and is the only EU country hosting this species.

7.7.4. Lesser Horseshoe Bats (*Rhinolophus hipposideros*) and Greater Horseshoe Bats (*Rhinolophus ferrumequinum*)

Roosts of Lesser Horseshoe Bats (*Rhinolophus hipposideros*) and Greater Horseshoe Bats (*Rhinolophus ferrumequinum*) have been recorded in areas close to Akrotiri Peninsula. Both species have been included in the LIFE data for Akrotiri and further work is required to confirm their status at the peninsula.

7.7.5. Bottlenose Dolphin (*Tursiops truncatus*)

No recorded data could be found for the Bottlenose Dolphin (*Tursiops truncatus*) at Akrotiri or Cyprus in general, but anecdotal information from fishermen suggests, there are frequent sightings around the peninsula, especially near the east and south coasts. The Bottlenose Dolphin has very wide distribution which covers the global except for the northernmost and southernmost latitudes.

7.8. Important amphibians

None of the three amphibian species on the peninsula are listed in the Schedules of the Nature Ordinance. However, the Mediterranean Tree Frog (*Hyla savignyi*) plays an important role in the ecology of Akrotiri wetlands.

Large numbers of this frog breed at the Fassouri Marsh and in the winter migrate and/or hibernate in the surrounding areas, particularly to the north of the marsh. They are a significant part of the food chain representing an important food source for a number of important wetland birds. There are no data about these movements except observations in late winter/early spring when big numbers come back to the marsh from the land in the north.

Although this species is found in many other locations in Cyprus, Fassouri Marsh is the most important breeding area on island. The Mediterranean Tree Frog (*Hyla savignyi*) occurs from Eastern Mediterranean areas to western Asia and southern Transcaucasia, including Cyprus, South-eastern Turkey, the Levant, the Arabian Peninsula, Iran, Northern Iraq, Armenia and Georgia.

7.9. Important invertebrates

7.9.1. *Brachinella spinosa*

Brachinella spinosa is a small shrimp-like crustacean, widely distributed in most brackish wetlands of the Mediterranean basin countries. It is a halophilic species typical of brackish continental waters of Europe and North Africa. In Cyprus it can only be found at Akrotiri wetlands where it plays an important ecological role in the food chain.

Flamingos, shelducks, avocets, Glossy ibises and other bird species are taking advantage of the winter abundance of *Brachinella spinosa*, by foraging intensively in the Salt Lake. This species is highly adapted to and dependent on the water cycle of the Salt Lake. It can persist prolonged dry periods as it forms resistant cysts that can await suitable conditions to hatch.

7.10. Important fish

7.10.1. Mediterranean Killifish (*Aphanius fasciatus*)

It is listed in Schedule 2 to the Nature Ordinance, requiring protection and management through SAC designation. It is found mainly at Zakaki Marsh, but uses most of the wetland system up to Fassouri Marsh. Akrotiri is one of the very few areas hosting this species in Cyprus. The Mediterranean Killifish is endemic to the Mediterranean and is distributed in all countries of this sea with the exception of the Iberic Peninsula.

8. Sensitivity of the important conservation features

8.1. Habitats in general

Akrotiri hosts one of the largest, most pristine and ecologically complex examples of coastal ecosystem in Cyprus.

In addition to the individual interest represented in each of its important features, there is invaluable overall value in its unique mosaic of habitats which are ecologically linked together.

The habitats at Akrotiri are adapted to very narrow sets of conditions and are very sensitive to a wide range of threats, including the following:

8.1.1. Direct habitat loss, degradation and fragmentation

Direct loss or damage of coastal habitat is one of the main threats in Cyprus due to the pressure for development in coastal areas. All forms of development are included such as urbanisation, agriculture, industry, infrastructure, quarrying etc.

In addition to direct habitat loss and indirect degradation, fragmentation creates significant impact as it damages the connectivity within the ecosystem, which is important to the preservation of species and the ecosystem integrity.

The floral and faunal diversity are largely a result of relatively big unfragmented and interconnected parts of habitat.

Habitat fragmentation has a significant impact on biodiversity. In addition to the reduction of total habitat, sessile organisms in the corridors are destroyed and mobile animals retreat into the remnant patches of habitat, suffering crowding and increased competition.

The smaller habitat parts formed can support smaller populations of plants and animals, which are more vulnerable to extinction as they lack the ability of bigger populations to correct fluctuations in climatic, resource and other factors. Also, the isolated, smaller populations tend to have asynchronous variations in their population dynamics, which prevents rescue immigration from one part to the declining population of another.

In addition, habitat fragmentation results in edge effects, including microclimatic changes of light, temperature and wind, which can change the ecology of the fragments. Furthermore, the created corridors also expose species to more predation and provide disturbed conditions suitable for the establishment of exotic species.

8.1.2. Alteration of the hydrological regime of the wetlands

As a large and significant part of the habitats at Akrotiri are directly or indirectly associated with the wetlands, the ecosystem of the area is particularly sensitive to hydrological changes.

These changes relate to both the water quantity and quality, but in the last few years the reducing availability of water for the wetlands is the major hydrological threat to the local ecosystem.

The construction of Kourris Dam in combination with reduced precipitation and the levels of abstraction of water from Akrotiri aquifer have been resulting in significant degradation of the ecosystem, particularly at Fassouri Marsh, due to its direct relationship with the local aquifer.

At the same time the quality of the aquifer is affected as well, due to sea intrusion. The impact on the sensitive chemistry of water in the wetlands would also include the runoff from intensified agricultural activities and other sources of pollution, but there are no particular data available in this direction.

The hydrological connection between Fassouri Marsh and the Salt Lake is also an important element to the management of water levels in the wetland system. The two wetland parts are connected through ditches draining from the marsh to the Salt Lake. Blocked ditches have resulted in water-logging of the marsh in the past, causing significant damage and alterations to both habitats and species. The habitat changes in the marsh include proliferation of reeds when water is excessive and succession of wetland/grassland to shrub when water levels are low.

It is also important to stress the surface linkage of the sea to the eastern side of the peninsula with the Salt Lake, which is an important element of the ecosystem of the lake and the potential impact of altering this regime.

Hydrological issues will be dealt with in more detail in the Hydrology section.

8.1.3. Exotic invasive species

The introduction of exotic invasive species is one of the main threats to the habitats at Akrotiri. The biggest threat is represented by *Acacia saligna*, which was introduced in Cyprus in the last century and has been spreading rapidly, especially in areas affected by fire or mechanical disturbance.

Some of the main areas occupied by this species at Akrotiri are shown on map 95, but the mapping is not complete. The risk to some habitats is higher than in other areas, but according to relevant studies *Acacia saligna* is causing damage to biodiversity by displacing indigenous species of flora and promoting monocultures of acacia.

Further work is required to map acacia, assess the risks and prioritise management. The management of acacia needs to be based on appropriate methodology and a long-term strategy as the species is very persistent and forms a very viable seed-bank.

Other alien plants introduced at Fassouri include eucalyptus and casuarina species, the impact of which requires further assessment.

The list of introduced alien species is long, including terrestrial and marine flora and fauna. More work is required to establish a baseline and scope for further assessment.



Map 95: *Acacia saligna*

8.1.4. Unmanaged access

Unmanaged access, especially by vehicles causes direct and indirect damage to habitats and species at Akrotiri. The flat landscape offers innumerable access points, especially to off road vehicles and some parts have become very popular for either organized events or driving on an individual basis.

Unmanaged access on foot causes damage through trampling; this being more relevant at species level than at habitat scale.

8.1.5. Erosion

Akrotiri Peninsula is under constant erosion pressure, particularly from the sea. Aeolian erosion appears to be slower and affects mostly the cliffs at the southern part of the peninsula.

Sea erosion, particularly on the western coast, has been having a bigger impact since the construction of Kourris Dam and the discontinuation of the sedimentary action of the river, which was one of the significant factors in the creation of the peninsula. It was also exacerbated by the extensive quarrying of sand and gravel from areas within Akrotiri Merra during past decades.

The erosion affects coastal habitats as well as species and at the moment the results are more evident at the western coast of the peninsula. There are no studies regarding the retreat of the habitats and species in response to erosion at Akrotiri. Erosion will be dealt with in more detail in the component plan for Hydrology and Geology.

8.1.6. Pollution

The habitats at Akrotiri are very sensitive to pollution, especially the ones associated with the wetlands and the sea. The potential sources of pollution in the area include oil slicks, agriculture, fish farming, fuel and oil depots and storm sewerage.

8.1.7. Fire

Fire is one of the main causes of habitat change/degradation in Cyprus, but it can also have beneficial results as it can be used as a management tool in certain circumstances. Drought conditions favour the outbreak of fires; its frequency is increased around areas of development.

8.1.8. Succession

Natural succession processes can be affected by human activities. At Akrotiri this applies particularly in relation to water management at both Fassouri and Zakaki Marshes, as highlighted at paragraph 8.1.2.

8.1.9. Silting

There is evidence of silting at the Salt Lake, which may be causing habitat changes and propagation of the invasive *Acacia saligna*. However, there is currently no system in place for monitoring either the silting or its consequences.

8.2. Specific habitats

Only habitats covered in the EU technical reports, from where relevant information is drawn, are covered in this section.

8.2.1. Posidonia beds (1120*)

The habitat is based on the meadows formed by the slow-growing seagrass species of *Posidonia oceanica* which has wide, persistent rhizomes. The beds rise above sea surface through sedimentation, vertical rhizome growth, dead rhizomes and shells/organic debris, which form reefs called 'matte'.

The beds need oligotrophic, transparent, oxygenated waters and the depth of its range is limited by available light for photosynthesis. The substrate requirements cover sand and rocks but not mud. The growth is also limited by wave action and in exposed coasts, growth starts in deeper waters.

Posidonia beds are key ecosystems supporting a vast and wide diversity of species including micro and macro-algae, mollusks, crustaceans, polycheta, sponges, echinoderms and fish.

They are also a food source to green turtles. The posidonia leaf litter accumulated on beaches is the basis of a complex invertebrate food web, acts against erosion and helps dune formation further inland.

Posidonia meadows oxygenate coastal waters and the atmosphere, provide a carbon sink, reduce shoreline erosion and can be used as indicators of environmental quality.

The main threats to posidonia meadows include:

- Nutrient loading of the water from agricultural runoff, fish-farming and sewage.
- Disruption of the sedimentation-erosion balance through coastal development, river flow disruptions, dredging etc.
- Damage from trawling and boat anchoring
- Brine discharge from desalination
- Proliferation of invasive algae
- Climate change impact, including sea temperature rise, heat wave events and more frequent severe storms.

There is no accurate mapping or monitoring of posidonia beds at Akrotiri, but the Fisheries and Marine Research Department of the RoC has a relevant project underway.

8.2.2. Humid dune slacks (2190)

Humid dune slacks are the wetland part of dune systems, appearing as flat valleys in the dunes and are closely associated with high water tables. Research and management information is mainly available from north Europe and include principal threats of changes in water table

level, scrub development, incorrect grazing regimes, shoreline management policies and coastal works. In addition, the invasive *Acacia* is a local, important threat to the coastal dune system.

8.2.3. Coastal dunes with *Juniperus* spp. (2250*)

This habitat comprises juniper scrub on coastal dunes. The main other plant in this habitat is *Pistacia lentiscus*. The sand dune substrate for this habitat depends on various parameters such as wind and wave action, the coastal drift processes, as well as the generic factor of the historic fluvial deposition at the peninsula. The stabilization of the dunes is affected by the establishment of vegetation, part of which is Juniper formations.

This habitat has high landscape value and acts as wildlife refuge. It plays an important role in natural coastal ecosystems and increases the resistance of the coast to extreme weather events.

The main threats include:

- Reforestation with *Pinus halepensis* in the 1900s of extensive areas on the south-western part of the peninsula.
- Heavy quarrying at Akrotiri Merra, which has probably affected this habitat, with only small patchy remnants existing today
- *Acacia* invasion
- Uncontrolled access on foot and in cars
- Over-grazing in some areas
- Fires
- Climate change

8.2.4. Pseudo-steppe with grasses and annuals (6220*)

This is a semi-natural habitat of xeric, thermophilic and mostly open grasslands with high plant, invertebrate and vertebrate diversity.

It provides high ecological benefits including:

- Soil protection against erosion and desertification
- Restoration after fires through pioneer action of grasslands
- Mosaic contribution to landscape diversity
- Contribution to insect biodiversity
- Soil biological activity
- Foraging and invertebrate prey grounds for birds
- Foraging grounds for goat grazing

The main threats include:

- Abandonment of grazing

- Fire, which can have positive and negative effects
- Development and change of land use
- Utilization of pesticides, herbicides and fertilizers
- Alien invasives, such as *Acacia saligna*

8.3. Flora

According to the Red Data Book of the Flora of Cyprus Akrotiri is one of the most important hotspots in Cyprus for threatened plants. Furthermore Akrotiri hosts either exclusively or together with very few other areas in Cyprus many threatened plants.

Plants in general have evolved within envelopes of very specific and relatively constant environmental conditions and are, therefore, sensitive to a variety of factors and impact including:

- Human factors
 - Habitat loss, degradation and fragmentation
 - Damage from driving over and trampling
 - Use of pesticides affecting pollinating insects
 - Collection of plants
 - Fire
 - Grazing
 - Introduction of alien invasive species
 - Pollution
 - Direct or indirect modification of any of the environmental factors below
- Environmental abiotic factors
 - Topography including aspect, inclination, elevation and terrain
 - Temperature which directly affects germination, photosynthesis, respiration/transpiration and absorption of water and nutrients, but can also affect soil organisms important to plants
 - Moisture supply, with high and low levels of moisture being restrictions to plant growth according to the water requirements and limitations of each species
 - Radiant energy, where intensity of light and duration are important factors
 - Atmospheric composition and quality
 - Soil structure, with aeration being an important factor
 - Soil reaction, where pH is an important factor influencing the biological activity in soil and the availability of certain minerals

- Supply of nutrients, including non-mineral (carbon, hydrogen and oxygen from water and air), primary nutrients (nitrogen, phosphorus, potassium), secondary nutrients (calcium, magnesium, sulfur) and micronutrients (copper, manganese, zinc, boron, molybdenum, chlorine, iron) and beneficial to some plants (cobalt, vanadium, sodium, silicon)
- Restricting substances, including high concentrations of plant nutrients and waste pollutants (e.g. aluminum, nickel, lead, organic compounds, phenols, oil)
- Environmental biotic factors
 - Mutualism, including symbiosis and pollination
 - Herbivory
 - Parasitism
 - Allelopathy

According to the Red Data Book of the Flora of Cyprus, the distribution and habitat of each of the important plants are as follows. Threats specific to the local populations at Akrotiri are outlined as well.

8.3.1. *Ophrys kotschy*

Ophrys kotschy is a Cyprus endemic species and can be found in about 30 sites around the island. It is found from sea level to 900 meters of altitude in phrygana and maquis stands, grassy slopes, field margins, sparsely vegetated pine forests and moist places. It is mostly associated with limestone soil, even though at Akrotiri and Akamas areas it grows elsewhere.

The sub-population at Agiofyla is very popular amongst botanists, photographers and other visitors whose activities need to be managed appropriately, including parking and movements on foot. Other activities in the area include illegal cutting of pine-trees which may change the microclimate on which this species depends and grazing, the impact of which needs to be assessed.

The other population at Agios Georgios faces risks from uncontrolled access, racing and planting of vegetation.

Collection has not been observed and possible failure in sexual reproduction needs to be addressed further.

8.3.2. *Achillea maritima*

Achillea maritima is native to southern Ireland, Spain, and Mediterranean coasts. In Cyprus its distribution is restricted to coastal zones on sandy and gravelly seashores. It can be found at about 18 sites of the island and grows on sandy and gravelly beaches, near coastal sand dunes and not far from sea level.

The populations at Lady's Mile are under serious threat from the recreational activities.

The small, scattered populations on the west coast appear to be remnants of past populations affected by heavy quarrying and coastal erosion.

8.3.3. *Aegilops bicornis*

Aegilops bicornis is native to Cyprus, Egypt, Israel, Libya, south Jordan and Kuwait. In Cyprus it grows in six different sites on sandy beaches and stable sand dunes from coast to areas with up to 30 meters of elevation and 1 km away from the coastline.

The population at Bishop's farm could be vulnerable to grazing as well as other activities, but further assessment is required.

The populations at the new locations at Lady's Mile are vulnerable to uncontrolled access, grazing, off road driving and invasion of *Acacia saligna*.

8.3.4. *Baldelia ranunculoides*

Baldelia ranunculoides is native to Europe, Turkey and northwest Africa. In Cyprus it was only recorded at Fassouri Marsh in 1991 and 1997.

At present it is evaluated as extinct, with possible reasons the intense and prolonged fire in 1999 and continuous flooding between 2005 and 2008. However, the lack of adequate standing water during the last few years may have contributed as well.

It grows around marshes and flooded meadows that dry during the summer, and open areas close to coastline. It is most frequent in sites with slightly basic water and can occur in brackish sites. Moderate trampling by large animals assists in the dispersion of the species, but heavy trampling may cause serious damage. It is also restricted by low level of nutrients.

8.3.5. *Cistanche phelypaea*

Cistanche phelypaea is native to Portugal, Spain, Greece, Saudi Arabia, and North Africa. In Cyprus this species is restricted to 3 plants at a site at Lady's Mile coast, although there are older references at a few other areas.

It is a parasitic plant hosted by plant members of the *Chenopodiaceae* and *Zygophyllaceae* families. It grows in coastal lowland areas, often in damp sand dune habitats, but it is both rare and localized.

The small population at Lady's Mile is threatened by tourism development, uncontrolled access and outdoor recreational activities.

8.3.6. *Cladium mariscus*

Cladium mariscus has a widespread distribution including America, Australia, Africa, Europe, and East Asia. In Cyprus it can only be found in one site in Akrotiri peninsula, north of the Salt Lake.

It grows on marshy coastal level areas, with alkaline ground. It occurs as a water emergent up to about 40 cm deep. Cutting in early summer every 3-5 years is beneficial but more frequent cutting is detrimental. It can persist shading for many years.

At Akrotiri it is threatened by scrub colonization, wild fires, desiccation, eutrophication, invasion of *Acacia saligna* and possibly over-collection for soft-basketry purposes.

8.3.7. *Convolvulus lineatus*

Convolvulus lineatus occurs in Mediterranean basin countries, eastwards to Iraq, Iran and Turkmenistan. In Cyprus its confirmed population is restricted to Akrotiri.

It grows in maquis openings and along roads and tracks.

It is threatened by uncontrolled access, development, clearing vegetation along roads.

8.3.8. *Convolvulus x cyprius*

Convolvulus x cyprius is an endemic natural hybrid growing exclusively at Akrotiri.

It grows together its putative parents *Convolvulus lineatus* and *Convolvulus oleifolius*.

Its status and importance require further assessment.

8.3.9. *Coronilla repanda*

Coronilla repanda subsp. *repanda* is confined to Portugal, Spain, Greece, Israel, and North Africa. In Cyprus it can be only found coastally at Akrotiri Peninsula.

Uncontrolled access and grazing could be a threat to this species, but this requires further assessment.

8.3.10. *Crypsis factorovskyi*

Crypsis factorovskyi occurs in Eastern Mediterranean countries and Turkmenistan. In Cyprus it can be found at Akrotiri Salt Lake, Paralimni Lake, and Kamares area in Larnaca.

It grows in brackish and saline soil conditions in areas that go through dry and wet annual cycles, as well as muddy areas around Salt Lakes.

It is threatened by road maintenance works, off road driving and racing and invasion of acacia *saligna*, although some disturbance which maintains open habitat may be beneficial.

8.3.11. *Cymodocea nodosa*

Cymodocea nodosa is a sea grass species common throughout the Mediterranean and the coast of West Africa. Although it is listed as Least Concern by IUCN due to its stable population, it has been included here as it appears to be playing a primary role as food source for Green turtles.

It occurs primarily in shallow waters with sandy substrate and can sustain moderate levels of disturbance. It has been observed in many locations around Akrotiri Peninsula but has not been mapped yet.

Its main threats include boat anchoring, pollution and eutrophication, competition from seaweed *Caulerpa* species.

8.3.12. *Erodium crassifolium*

Erodium crassifolium is distributed in North Africa, Crete, Israel, Arabia and Iraq. In Cyprus it occurs in 9 locations. The population at Akrotiri was discovered after the publication of the Red Book and includes the southern coast of the peninsula.

The species grows on limestone rocks near the sea and lake verges.

At Akrotiri the population is threatened to a certain degree by coastal erosion.

8.3.13. *Euphorbia pubescens*

Euphorbia pubescens is found in the Mediterranean, Black Sea Iraq and the Atlantic Islands. In Cyprus, although collected from a few locations, a small population was confirmed after the publication of the Red Book, at Fassouri Marsh.

It grows at low altitudes in marshlands, streamsides and irrigation channels.

The ecosystem at the location where the species occurs at Fassouri is very dynamic in terms of hydrology and succession processes. Further assessment is required to establish threats from these factors and appropriate management.

8.3.14. *Herniaria hemistemon*

Herniaria hemistemon occurs in North Africa and Arabia. In Cyprus it has been identified in 5 locations, including Akrotiri Peninsula.

It grows on dry soils among thin phrygana and its vulnerability at Akrotiri requires further assessment.

8.3.15. *Ipomoea imperati*

Ipomoea imperati occurs in tropical and subtropical regions including the Mediterranean Sea. This plant can be found in 14 coastal sites around Cyprus, including Akrotiri. Its main threats include coastal development and recreational activities as well as mechanical cleaning of beaches.

8.3.16. *Ipomoea sagittata*

Ipomoea sagittata occurs in south and east Mediterranean and tropical America. In Cyprus it occurs only at Fassouri Marsh.

It grows in marshes and ditch banks and the population at Akrotiri is subject to a dynamic hydrological regime which needs further assessment for the establishment of appropriate management.

8.3.17. *Isolepis cernua*

Isolepis cernua has a wide global distribution in the most continents. In Cyprus it can only be found at Akrotiri Salt Lake. It grows near swamps and lakes, on areas with seasonal dry to wet soil conditions.

Its main threats include road construction/maintenance works, invasion by *Acacia saligna* and *Phragmites australis* and drainage.

8.3.18. *Juncus littoralis*

Juncus littoralis grows in countries of the Mediterranean, the Caspian, and the Black Sea. In Cyprus it grows at Akrotiri Salt Lake and two other sites.

It occurs on salt meadow wetlands and at Akrotiri its threats require further assessment, including possible impact from over-collection for basketry purposes.

8.3.19. *Juncus maritimus*

Juncus maritimus occurs in Central and western European countries, countries of the Mediterranean Sea, extending eastwards to western Iran. It can be found in three areas in Cyprus, two of which are located within the Akrotiri Peninsula (Salt Lake and Fassouri Marsh).

It grows on coastal wetlands, usually in saltwater marshes and meadows, as well as the edges of salt lakes.

Its threats include the maintenance of the forest tracks, invasion of *Acacia saligna* and *Phragmites australis* and possibly fire.

8.3.20. *Linum maritimum*

Linum maritimum occurs in Central-East Europe and Mediterranean countries. In Cyprus it grows at three sites, all located within the Akrotiri peninsula, although other locations have been identified since the publication of the Red Book.

Its habitat is salt water and fresh water wetlands near sea level.

It is threatened by fire, drainage, invasive *Acacia saligna* and *Phragmites australis* and maintenance of forest roads and ditches.

8.3.21. *Lotus cytisoides*

Lotus cytisoides is a Mediterranean basin species. In Cyprus it only grows at Akrotiri Peninsula.

It grows in Coastal areas with sandy and gravel stable shores, near sea level.

It is threatened by tourist and coastal recreational activities at Lady's Mile, extension of parking areas, off road driving and trampling.

8.3.22. *Mentha aquatica*

Mentha aquatica occurs in Africa, Iran, Europe and eastward towards Caucasus Mountains countries. In Cyprus it occurs only at Fassouri Marsh.

It grows on wet, often flooded areas, and riparian areas usually near sea level. It emerges shallow water, especially alkali, and tolerates water fluctuation and atrophic conditions.

Its main threats are related to changes in the hydrological regime at Fassouri Marsh.

8.3.23. *Orchis palustris*

Orchis palustris occurs in Europe, including Mediterranean countries extending eastwards to Iran and Russia. In Cyprus the only known site used to be until 2002 Fassouri Marsh, but it has not been observed since then. Possible reasons for this are the extreme fluctuations in the hydrological regime of the marsh including prolonged water-logging and mechanical maintenance of ditches.

It requires wet soil near wetlands and marshes at low elevation and tends to occur at slightly alkaline water conditions.

8.3.24. *Pancratium maritimum*

Pancratium maritimum was one of the species originally assessed as Near Threatened but finally characterized as Least Concern during the Red Book project.

It occurs in more than 25 coastal areas in Cyprus, but the east coast of Akrotiri Peninsula is one of the best sites for this species.

Although it is under much pressure from coastal tourist and other recreational activities and development, its late flowering and the fact that it is a perennial herb are positive parameters for its conservation.

The impact on this species from various activities at Lady's Mile needs more assessment.

8.3.25. *Phyla nodiflora*

Phyla nodiflora is a widespread species globally in countries with hot climatic conditions. In Cyprus it occurs at 4 locations including Akrotiri.

It grows in seasonal ponds, wetlands, marshes, and meadows, as well as seasonally flooded areas.

Its main threats include changes in hydrology and long droughts.

8.3.26. *Plantago loeflingii*

Plantago loeflingii is a species occurring in Portugal, Spain, North Africa, Syria, and Turkey eastwards to Iran and the Atlantic Islands. In Cyprus samples collected from a few locations including Akrotiri are being investigated.

8.3.27. *Posidonia oceanica*

Posidonia oceanica is a sea grass species endemic to the Mediterranean. It is listed as Least Concern by IUCN as it has not suffered excessive decline. However, it forms a very important habitat for many species. It is a very slow growing species and a slow recoloniser as well as sensitive to mechanical damage from trawling and boats, coastal development and eutrophication.

It occurs on coastal to offshore, mainly sandy and some rocky areas up to 45 metres of depth. At Akrotiri it occurs around the south-west, south and east parts of the peninsula, but more survey work is required to establish its distribution.

The main threats include mechanical damage from trawling (which in Cyprus is not permitted over *Posidonia* beds), boat anchoring, turbidity, coastal development (shoreline hardening, urban and harbour infrastructure), eutrophication caused by agriculture and urban waste, pollution, aquaculture and invasive *Caulerpa* species.

8.3.28. *Saccharum strictum*

Saccharum strictum is a grass species found in countries of southeastern Europe and western Asia. In Cyprus it can only be found at Akrotiri Peninsula.

8.3.29. *Scirpus lacustris subsp. tabernaemontani*

Scirpus lacustris subsp. tabernaemontani is a widespread species in Africa Europe and East Asia. In Cyprus it occurs only at Fassouri Marsh.

It grows on marshy areas often in brackish waters no far from sea level. It tolerates more salinity than *Phragmites australis*.

The main threats to this species are related to changes in the hydrological regime and succession processes. Cattle grazing needs to be assessed as the drought conditions have made its area more accessible to grazing.

8.3.30. *Serapias aphroditae*

Serapias aphroditae is a Cyprus endemic and can be found in four areas in Paphos and one at Akrotiri peninsula.

It occurs in moist places, maquis, garigue, abandoned vineyards and sparse pine woodland.

At Akrotiri it is threatened by the wide use of pesticides and possibly grazing.

8.3.31. *Serapias parviflora*

Serapias parviflora is a Mediterranean species from Spain to Greece. In Cyprus it is only found at Akrotiri in small numbers.

It occurs in thin pine woodland and is threatened by grazing.

8.3.32. *Taraxacum aphrogenes*

Taraxacum aphrogenes is a Cyprus endemic plant, growing coastally between Akrotiri and Latsi.

It occurs in fissures of coastal rocks, and beaches with gravel and sand.

It is threatened by tourist and human development and outdoor coastal recreational activities, including off road driving. The impact of coastal erosion requires further assessment.

8.3.33. *Triplanche nitens*

Triplanche nitens is a species of the Mediterranean basin countries and some Atlantic Ocean islands. In Cyprus it can be found at eleven sites one of which is located at Akrotiri peninsula.

It occurs at sand and rarely on gravel beaches and dunes.

It is threatened by coastal road construction, unregulated access and trampling.

8.3.34. *Urtica membranacea*

Urtica membranacea is distributed in Portugal and Azores islands and the Mediterranean Sea extending eastwards to Iraq. Four known sites exist in Cyprus, one of which is located at Akrotiri.

It occurs mainly along roadsides and citrus orchards.

At Akrotiri the population occurs within a citrus farm and is threatened by farming activities and the use of pesticides.

8.3.35. *Vulpia brevis*

Vulpia brevis occurs in Syria, Libya, Israel, Sinai and Egypt. In Cyprus it grows only on two sites, one of which is at Akrotiri.

8.4. Birds

Two major groups of birds are using the Akrotiri area, namely raptors and waterbirds & cranes.

Raptorial birds are concentrating at the peninsula primarily during their southward migration because of its natural bottleneck feature and its lifting thermal currents, which create the ideal conditions to fly offshore.

The abundance and diversity of wetlands (freshwater, saltwater, coastal areas), offer appropriate conditions for hosting different species of waterbirds. Cranes migrating south will use open areas, especially the Salt Lake to roost and rest overnight.

These birds, like most raptor and other species, will take advantage of the warm rising thermals created by the Salt Lake and its surroundings to gain lift off and fly offshore, conserving valuable energy during their long, and high-energy demanding trips. In addition, some species of waterbirds and other birds use the wetland areas for breeding, whereas the Peregrine, Eleonora's falcon and the Shag breed on coastal cliffs.

The avifauna of the peninsula faces a variety of both natural and, more importantly, human induced impact. The threat factors include:

- Direct habitat loss, degradation and fragmentation from development and human activities such as urbanisation, agriculture, industry, infrastructure, quarrying, recreation and tourism facilities, off-road driving with four-wheel vehicles and motorcycles, trailer movement and parking, parking extensions for beach restaurants and others.
- Alteration of the hydrological regime of the wetlands, including water availability, water flow and levels and water quality. The sensitivity of habitats to the hydrological parameters at 8.1.2 above applies to waterbirds as well.
- Human disturbance from unmanaged access and other activities.
- Erection of structures conflicting with flight paths and thermalling activities
- Pollution
- Poaching
- Predation

8.4.1. Sensitivity and ecology of the breeding bird interest

The site is one of the five most important sites in Cyprus for breeding populations of Black-winged Stilts (*Himantopus himantopus*), Kentish Plovers (*Charadrius alexandrinus*), Spur-winged Plovers (*Vanellus spinosus*), and Ferruginous Ducks (*Aythya nyroca*), which are all considered threatened within the European Union.

All species are ground nesters and have very confined breeding areas within the peninsula, which vary from year to year according to the condition of the wetlands, particularly the availability of standing water.

Furthermore, the coastal area of the peninsula, especially the southern part which is characterized by coastal cliffs, is used by three more important breeding species. The European Shag (*Phalacrocorax aristotelis*), Peregrine Falcon (*Falco peregrinus*) and Eleonora's Falcon (*Falco eleonora*), are taking advantage of this isolated area for breeding. The first two are resident in the area, whereas the other uses it only for breeding during the summer and autumn months.

The breeding season is the most important part of the annual cycle of every species. During this period, birds are more alert and generally more susceptible to different kinds of disturbance. If a parent is forced away from a nest, its eggs or chicks may die due to exposure to severe temperatures (hot or cold), or to predation.

Human activities detrimental to nesting waterbirds include disruption of incubation or brooding. Trampling of eggs and chicks, off-road driving, fishing too close to nesting areas, camping, jogging, livestock grazing, kite flying, model airplane flying, traffic, dogs walked off their leashes, and boats (for Shags) are all causing disturbance.

Other than the direct disturbance of the nesting site of a given species during the breeding season, the altering of the ability of animals to exploit important resources is one of the principal ways in which human presence can have an impact on wildlife. This can operate either through directly restricting access to resources such as food, water, nesting or roosting sites, or by altering the perceived quality of these sites.

Direct restriction of access to resources can occur through animals avoiding areas where humans are present. Furthermore, adult behaviour may be impacted by disturbance, and consecutively impact reproductive success, by leading young to premature fledging, nest evacuation, weight loss and slower growth rate.

At areas with high levels of human disturbance, parents are forced to fly from and to the nest more often. As a result, different species of predators, especially avian, that couldn't detect the nesting areas and the parents because of their well camouflaged plumage, can take advantage of those back and forth to the nest movements to locate the nest and prey on the eggs or chicks.

8.4.1.1. The Ferruginous Duck (*Aythya nyroca*) is the only non-Charadriiforme species that nests inland in the area and its breeding habitat is restricted to fresh-water wetlands with adequate surrounding vegetation.

The species prefers fairly shallow expanses of water, rich in submerged vegetation, fringed by dense stands of emergent plants such as reeds and willows. It nests on anchored floating vegetation or on islands and banks with immediate access to water.

It suffers from habitat changes arising from summer droughts, and drier conditions, although wetland drainage is probably the main reason for the global decline of this species.

The Zakaki and Fassouri wetlands are the two main sites and Akrotiri is the only area in Cyprus that the species uses for breeding.

Fassouri is being used when there is adequate standing water, which has not been the case in recent years. On the other hand Zakaki has become more important for this species due to more availability of water from storm sewerage.

8.4.1.2. The Spur-winged Plover (*Vanellus spinosus*) is primarily a ground bird, moving within fairly narrow habitat limits. It generally prefers open marshy places by lakes, lagoons, river sites, deltas, sewage ponds, fish ponds and even irrigated fields.

Apart from the local breeding population of the island, Spur-winged Plovers use Cyprus as a flyway regularly in spring in small numbers from mid March to mid April.

In its global distribution, population declines from habitat destruction, land reclamation, intensified lagoon fisheries, and clutch predation by feral dogs, foxes, crows and yellow-legged gulls.

At Akrotiri its breeding sites are associated with fresh standing water and like the Ferruginous Duck it uses the Zakaki and Fassouri wetlands as its breeding areas. Once again, breeding at Fassouri wetland depends on the availability of standing water.

8.4.1.3. Black-winged Stilts (*Himantopus himantopus*) are generally confined to shallow still waters, either fresh or brackish but not markedly tidal. Such habitats mainly occur in deltas, estuaries, near coastal lagoons or swamps, salt lakes, and shallow lakes and rivers.

Black-winged Stilts are more numerous in the area during the breeding season, especially in years with high precipitation since they can use both fresh and salt water wetlands.

The salt meadows surrounding the Salt Lake are readily used and preferred over areas with fresh water wetlands - such as Fassouri, Zakaki and Bishop's pool - because of the species' tendency to nest colonially (more available breeding habitat allows for larger colonies).

The species is an opportunistic breeder. Its breeding depends on water level and in some dry years it will choose not to nest at all.

8.4.1.4. The breeding of Kentish Plovers (*Charadrius alexandrinus*) generally takes place in sparsely vegetated sites along seacoasts, estuaries, lagoons, beaches and Salinas, but also at recently reclaimed wetlands.

The species is generally threatened by the disturbance of its coastal and other breeding habitats, degradation and loss of wetlands through pollution, land reclamation, declining river flows, reduction of sediment being carried into coastal areas by rivers and predation.

Kentish Plovers are found at Akrotiri year-round with larger numbers during the winter when birds from northern populations use the area as wintering grounds. Its breeding population in the area is higher than the rest of the breeding Charadriiforme species.

Salt meadows around the Salt Lake and gravel pits with proximity to saline lagoons are used as breeding sites. The breeding population of this species is less affected by annual precipitation since it can readily breed around small pools and other sources of standing water.

Outside the breeding season, and especially during the summer and autumn months when the Salt Lake is dry, Kentish Plovers are largely depending on small saline pools near the northern edge of Lady's Mile coast for foraging.

8.4.1.5. The European Shag (*Phalacrocorax aristotelis*) is a colonial breeding bird, colonizing coastal areas with cliffs and other rock formations which provide nesting grounds secure from terrestrial predators.

The nest is built on cliff ledges or crevices under rocks protected from rain and high tides. It prefers less turbulent and more sheltered fishing grounds without wandering far from the coasts.

Shags spend much time resting, drying and preening on waterside vantage points such as rocks, small islets and ledges near cliffs, where it can be observed sunbathing with its wings open.

The species is generally threatened by competition with the Great Cormorant, which is larger and much more numerous and widespread. It is also often mistaken for this particular species and accidentally persecuted, since the Great Cormorant is considered as a pest for fishing, particularly near fish farms.

This applies to Cyprus as well at a smaller scale. In addition, it is sensitive to boat disturbance of its breeding sites. Shags can be found all around the southern part of the peninsula wherever the coast is rocky with cliffs providing isolation from the rest of the inland areas.

8.4.1.6. Eleonora's Falcons are summer – autumn visitors which stay in the area until mid autumn when they fly back to Madagascar and Africa to their wintering grounds. The species is specialized in its breeding season in terms of time and location and rears its young in autumn so they can be raised with the abundant migrating passerine birds.

During the breeding season, Eleonora's Falcons primarily use coastal airspace extending only a few kilometers seaward and inland, in contrary with the pre-breeding season of spring and summer where its feeding range is much wider.

It only breeds and lives on coastal cliffs and since the desirable habitat of the species is so confined, it breeds in colonies around the Mediterranean Sea and the whole population concentrates in less than 100 breeding colonies within its home range.

In Cyprus these birds can only be found along the coastal cliffs between Limassol and Pissouri, and outside their breeding season, during which they tend to stay near the colonies, they can be seen hunting insects far from the coast at areas with high insect concentrations like the Akrotiri Salt Lake, the nearby citrus plantations, some dams and even Troodos and Madari forests.

The species is threatened by illegal hunting, human activities and particularly tourist development, which is the main reason for its habitat loss. Therefore protection of the major colonies should be a priority conservation measure for this species.

8.4.1.7. The Peregrine Falcon is another raptorial species which shares the same habitat with Eleonora's Falcon in the area. Cliffs are the main breeding habitat of the Peregrine, but unlike Eleonora's Falcon, this species will occupy cliffs away from the coasts as well where it will nest on ledges and cracks providing protection from rain.

Sometimes tall inaccessible structures like towers, high buildings and ruins will be used for nesting as well. For hunting, peregrines require extensive open terrains often including various wetlands or other coastal habitats. They avoid areas with intense human activities, or unbroken forest stands, heavily vegetated marshes and major open waters.

In Europe, its breeding distribution is quite patchy due to its breeding habitat limitations. It is threatened by pesticides ingested from its prey species particularly organochlorine pesticides, persecution and nest robbing for falconry purposes. Near Akrotiri, it generally uses the coastal cliffs areas for breeding, resting and roosting, and hunting for some prey species.

The rest of the peninsula is mainly used for hunting especially the Salt Lake during the winter where waterfowl prey is abundant. Migrating birds can be observed in the area as well especially during the autumn when migrating south.

The eucalyptus forest of the area can be used for roosting, but some hunting by these birds might take place in the open habitats of the area like the Salt Lake with its surrounding salt meadows.

Furthermore, the thermal currents rising from the Salt Lake and the sandflats are being used by the birds similarly to other raptors for gaining lift with minimum efforts before flying offshore towards their wintering areas.

8.4.2. Sensitivity and ecology of non-breeding birds

The peninsula is important for non-breeding species as well, many of which are using it for wintering and migration, including roosting and resting, staging and thermalling to gain extra lift without spending energy before flying offshore.

During migration, because of its geographic location, Akrotiri Peninsula can be considered as the most critical stop of the migratory journey.

Northern Europe populations traveling south through the Balkans and Turkey rest in Cyprus before having to fly the longest open water area of their journey over the Mediterranean. Hence it is crucial for some species to get the rest required to complete their journey.

During this time, birds are using areas mostly unknown to them. Thus they tend to be more wary and sensitive to disturbance. Some species can tolerate some forms and levels of disturbance but generally most tend to abandon frequently disturbed sites, with catastrophic consequences, especially when they had not taken adequate rest.

Furthermore, the birds that are using the areas as overnight roost during their migration, if disturbed, will instinctively continue their trip without taking any rest, which can sometimes have devastating consequences.

Most migrating birds tend to use Akrotiri Merra and Salt Lake to rest and stage, as well as the eucalyptus forest north of the lake for roosting (especially raptors).

The Merra area is very important for them but, unfortunately, it is one of the most disturbed areas of the peninsula. Off road driving, rubbish dumping, fishing, dog walking, stray cats and dogs and other activities are threatening the birds' survival by disturbing them during such a fragile stage of their lives.

Birds that use the area for wintering can be exposed to disturbances as well, which eventually reduces their survival rates. The Greater Flamingos, Shelducks, Charadriiformes species and others gather in big numbers during the winter.

These birds have one goal during these months, which is to gain enough energy for their north migration to their breeding grounds, and most importantly for the breeding season itself.

Breeding is the most important stage for every wildlife species and the most energy demanding time of their annual cycle. During this time, the birds have less time to feed, and they must build up the necessary fat reserves to allow them to complete successfully their breeding cycle.

For this reason birds need to forage non-stop during winter.

Any kind of disturbance applied to birds during this season, interrupts their valuable foraging time. As a result, the necessary reserves for successful breeding might not be achieved, reducing greatly the reproduction success, which is the most important part of life for the survival of every species.

The important non-breeding birds in the area include the following:

8.4.2.1. The Great White Pelican (*Pelicanus onocrotalus*) prefers water near land, and land near water with ample accessible supplies of medium sized fish. It is a species very vulnerable to disturbance and does not seek or readily tolerates human proximity.

It favours areas guarded against disturbance by natural barriers such as extensive reedbeds or difficult navigation. It can be observed at Akrotiri during the autumn migration.

The Zakaki Marsh, Akrotiri Salt Lake and the Gravel Pits within Akrotiri Merra are the sites used mostly by these birds. Most of them will use the area to rest for a few hours or overnight before having to cross the sea to their journey south. It is very important that the birds during this time are free of any form of disturbance and are given time to get the rest required to continue their journey.

8.4.2.2. The Purple Herons (*Ardea purpurea*) are common spring and autumn passage migrants. They are strongly attached to wetlands bearing extensive, tall, dense stands of vegetation such as reeds, with slight or no woody intrusion, usually in shallow permanent fresh waters.

These requirements are perfectly matched near the sites of Zakaki and Fassouri marshes as well as the Bishop's pool, which the birds are using for a few days as a staging stop within their migrating routes. Furthermore, birds of this species can be observed often near the coast of Akrotiri merra area resting upon arrival or departure from the peninsula.

Purple Herons are intolerant of human disturbance and rarely accept man-made substitutes for natural foraging, which makes them very vulnerable to drainage of wetlands. Protection of reedbeds is essential for the survival of this species.

8.4.2.3. The Glossy Ibis (*Plegadis falcinellus*) is a common spring and autumn migrant observed at different wetland sites in Cyprus.

It is associated with shallow lakes, rivers and floods as well as coastal lagoons, where it forages for invertebrates and small amphibians. It is intolerant of human presence and disturbance, whereas some populations in west and central Europe were extirpated mostly through the destruction of breeding and foraging habitats.

It uses most of the available wetlands in the peninsula, staging for a few days, where it rests and refuels during migration.

The Fassouri wetland is among the most preferred habitat for the species but the uncontrolled expansion of its reedbeds limits the available habitat of the species to the rest and forage. After reedbed fires the area becomes excellent foraging habitat for big numbers of this species. Therefore, managing the reedbed growth through controlled burning or otherwise will be very profitable for this species.

8.4.2.4. The Greater Flamingo (*Phoenicopterus roseus*) requires large undisturbed expanses of shallow brackish and saline lagoons, Salt Lakes, salt pans and tidal flats, with seasonal access to fresh drinking water.

It is highly intolerant of human disturbance (including low-flying aircrafts). Within their species' range, flamingos are suffering disturbance at their breeding grounds, pollution of their wetland habitats - mainly from sewage, lead poisoning – to which they are highly susceptible, and collisions with power lines and fences.

During the winter months, flamingos are the most numerous birds of the area using the main Salt Lake for feeding. Up to 10,000 individuals can be observed in some years and the site is very important as a wintering habitat.

During years of high precipitation when the water level at the Salt Lake becomes deep, some use the surrounding saline pools by the Lady's Mile coast. The Zakaki marsh is used for access to fresh drinking water.

The only other area used by this species in Cyprus is Larnaca Salt Lake. These birds move opportunistically between the two Salt Lakes and observations in the last few years show increasing trends for Akrotiri and decreasing for Larnaca.

8.4.2.5. Large flocks of the European Honey Buzzard (*Pernis apivorus*) can be observed at Akrotiri during their autumn migration.

They can be observed in the area during the months of September and October, but they use the area for migration purposes only and tend not to stage or rest for more than one day.

Their secretive habits enable their existence in small quiet areas close to human populations. However, they do not tolerate much disturbance and are very vulnerable to persecution.

They are believed to be affected by the use of pesticides and insecticides, but their main threat is shooting at their migration routes. Akrotiri Peninsula, which is located at the southern part of Cyprus, is being used to fly off to their wintering grounds in Africa.

This species is using the peninsula in two main ways. Firstly, it uses the eucalyptus forest north of the Salt Lake and the phrygana/grassland area within Akrotiri Merra as a roosting site. Secondly, it is taking advantage of the hot rising currents created by the Salt Lake and its surroundings to gain height in the air without wasting valuable energy needed to complete its journey.

8.4.2.6. The Western Marsh Harrier (*Circus aeruginosus*) is a common winter visitor at most wetlands in Cyprus, but also a passage migrant. Marsh Harriers strongly prefer shallow, standing, fresh or brackish waters fringed and extensively invaded by tall standing reeds, reed mace and other dense emergent aquatic vegetation, without many or widespread trees.

It is very sensitive to direct intrusion and disturbance and very vulnerable to agricultural poisons, wetland drainage, and persecution which caused its disappearance from many areas in Western and Central Europe. Wintering Marsh Harriers can be seen throughout the winter months hunting around Zakaki, and Fassouri wetlands as well as the Salt Lake.

Birds can be observed in other areas of the peninsula as well especially near Akrotiri Merra which is frequently used during their migration.

8.4.2.7. The Pallid Harriers (*Circus macrourus*) are common passage migrants that prefer entirely open terrains. The species' global numbers have declined significantly during the last decades mainly due to the use of harmful pesticides, insecticides and rodenticides and other toxic chemicals that limit their food availability and cause poisoning.

This species can be observed in the area during the autumn and spring migrations, and mainly uses the relatively open habitats such as Kouris riverbed, Akrotiri Merra area, as well as juniperus/maquis and phrygana/grassland habitats. It uses the peninsula as a staging area during the spring and autumn migration.

8.4.2.8. Large numbers of the Red-Footed Falcon (*Falco vespertinus*) are passing through the area during their autumn migrations in September-October.

This small sized falcon is one of the few raptorial species that are gregarious and live in colonies. It requires open areas, fringed or interspersed with stands of trees that are used for roosting and nesting.

It feeds primarily on insects which it mainly hunts in the air, which makes it very susceptible to insecticides. However, small rodents and reptiles are often consumed as well.

The species is using the area as a staging site, especially the Citrus plantations at the north part of the peninsula for roosting and occasional hunting. During their staging time in Cyprus, Red-footed Falcons are preying mostly on flying ants, but other insects are consumed as well.

Illegal shooting and the use of insecticides are the main threats to the species in the area. Other than the citrus plantations, Red-footed Falcons can be observed feeding in smaller numbers around Zakaki and Fassouri wetlands.

8.4.2.9. A significant number of the European population of Saker Falcons (*Falco cherrug*) are using Cyprus during their migration, either as a flyway, or as a staging site, even though small numbers of birds might choose to winter here.

The main habitat of this species is made of wooded steppes, or steppes bordering or overlapping with forests. It hunts over grasslands, open areas, cultivated lands and wetlands.

Near Akrotiri, it can be observed taking advantage of the thermal currents to gain height in the air with minimal efforts before leaving offshore and continuing the migration. It uses the eucalyptus forest, and the Phrygana/grassland area of Akrotiri Merra for roosting.

8.4.2.10. The Common Crane (*Grus grus*) is one of the largest and most impressive birds that are using the area as a resting site during their migration.

Crane numbers decreased dramatically in most of their European range during the last century, mainly because of long term human encroachment and disturbance, as well as habitat fragmentation and loss of many smaller traditional feeding, resting, and roosting sites essential during their long migrations.

This is leading to concentration of large flocks in other areas and therefore increasing competition and limiting survival.

Their migration routes involve regular use of staging points, thus their presence every year in the area. Like most of the raptorial birds found in the area, Cranes use the thermal currents of the area and often roost at Akrotiri Salt Lake and Akrotiri Merra.

Since the birds use the area to roost and rest overnight during their long migration, avoiding disturbance is very crucial to their survival.

8.4.2.11. Collared Pratincoles (*Glareola pratincola*) visit Cyprus during the autumn and spring migration. This species can be observed at different important wetlands around the island which it uses for a few days to rest during migration.

The species is mostly associated with flat, firm open areas with sparse short vegetation and warm shallow water, as found on damp salines, in river valleys or near seas or alkaline lakes.

It is threatened by the use of herbicides and insecticides as well as changes to its preferred habitats (changes in water levels, plunging of grasslands, artificial irrigation and fertilization, changes in traditional grazing regime, human disturbance and predation of nests by corvids).

Within the peninsula, Collared Pratincoles can be seen mostly around the freshwater wetlands of Fassouri and Zakaki, as well as Akrotiri Merra, which they use for resting during their migration.

8.4.2.12. The Slender-billed Gull (*Larus genei*) is a winter visitor, although more birds of this species will use Cyprus as a flyway when migrating from the Black Sea to the Egyptian coasts.

Migrating birds can be observed from September, but their numbering peak is usually during October. Outside the breeding season, Slender-billed Gulls tend to use coastal areas where they fish in large numbers, although fishing far out at the sea is not uncommon.

The species suffers from disturbance caused by local people and tourists, as well as habitat loss from tourist development. Due to the narrow nature of the peninsula, Slender-billed Gulls can be observed anywhere, but they use more often the Lady's Mile coast and the entire Salt Lake.

8.4.2.13. The Gull-billed Tern (*Sterna nilotica*) inhabits lowland coast estuaries, deltas and lagoons, and also inland lakes and deltas. It occurs generally near water but is less aquatic than most Sternidae spp..

On migration it typically forages over saltpans, coastal lagoons, mudflats, marshes and wet fields. It overwinters on estuaries, saltpans, lagoons and salt marshes.

The species is threatened by deterioration and loss of habitat through wetland drainage, agricultural intensification, pesticide pollution, fluctuating water levels, beach erosion and development and modification of its preferred foraging sites.

It can be observed near Akrotiri mostly during the migration and wintering months. Zakaki and Fassouri wetlands are usually preferred but foraging on Lady's Mile coast and the main Salt Lake is common when the conditions are appropriate (water levels, availability of food).

8.4.2.14. The Squacco Heron (*Ardeola ralloides*) prefers still fresh waters, especially small ponds or pools, canals and ditches flanked by dense aquatic vegetation, often including some woody shrubs, climbing plants, or scrub trees that are found in lowland valleys, floodplains, wetlands, deltas and estuaries.

Its greatest threat is the loss and deterioration of natural and man-made fresh water habitats and wetlands. It is a very common passage migrant of the area, which it will use for a few days to rest and refuel before continuing migration.

It uses all fresh water wetlands of the area (Zakaki, Fassouri, and Bishop's pool), as well as the Salt Lake and the bordering salt meadows. Furthermore, it can be observed at Lady's Mile coast as well as Akrotiri Merra and its surrounding salt meadows, especially when arriving on the area during migration.

8.4.2.15. The Demoiselle Crane (*Anthropoides virgo*) prefers during its breeding season sparsely vegetated plateaus in steppe and semi-desert zones. It is not dependent on open water but chooses breeding sites no further than 1.5 Km from access to water.

The European population uses Cyprus during their migration, especially during the autumn where hundreds pass over the island (and smaller numbers in the spring), well before Common Cranes arrive.

This species uses the area as a resting stop every year. It can be observed roosting mainly in the Salt Lake, but sometimes it can be seen using Akrotiri Merra, Fassouri wetland and the Bishop's farm.

Like the Common Crane and some raptorial species, Demoiselle Cranes take advantage of the thermal currents created by the Salt Lake and the other sandflats and mudflats of the area to gain altitude with minimal efforts before flying offshore on migration. Since the species use the area for overnight resting, disturbance of the birds at their resting area can be very crucial to their survival.

8.4.2.16. The Common Shelduck's (*Tadorna tadorna*) choice of habitat is salt or brackish water, either on shallow coasts and estuaries, or inland seas and lakes.

It needs foraging areas of high biological productivity, especially sand and mud flats over which shallow water alternates with drying through tides and evaporation. The species' main threat is habitat loss.

Because of the existence of the Salt Lake and the numerous surrounding saline pools, Shelducks use the area primarily for wintering, although many birds will use it as a staging area during their migration.

The main Salt Lake and the surrounding saline pools along Lady's Mile are most commonly used, but during periods of high precipitation, when the Salt Lake becomes too deep at some points for feeding, Akrotiri Merra can become a very suitable habitat that is readily used by the species.

8.4.2.17. The Greater Sand Plover (*Charadrius leschenaultii*) is a species breeding predominantly on desert or semi-desert. Outside the breeding season it shows preference for littoral habitats with mixed sand and mud substrata.

It is found on sheltered sandy, shelly or muddy beaches, large intertidal mudflats, sandbanks, salt-marshes, estuaries, coral reefs, tidal lagoons and pools near the coast.

During migration, the species will occasionally utilize inland habitats such as Salt Lakes and brackish swamps.

It is threatened by destruction of wetlands through drainage and water extraction for irrigation, and disturbance from tourism.

It uses Cyprus as a flyway or a staging area during migration, even though some birds might choose to over winter here. All fresh and salt water wetlands and pools in the area are used by the species as well as the two coasts of the peninsula.

8.4.2.18. The Little Stint's (*Calidris minuta*) breeding habitat is confined to shallow freshwater or salt water pools, lakes or river deltas, with sparsely vegetated shores.

On migration it is found along the muddy edges of reservoirs, sewage farms, river banks, seasonal pools as well as coastal mudflats and seashores. It is threatened by habitat degradation by diminishing rainfall and disturbance by humans.

It is a very common wintering bird that can be observed in large numbers during some years, although most birds will use the island as a flyway and a staging area.

Like the Greater Sand Plover, all fresh and salt water wetlands/pools are used by the species in the area as well as the eastern and western coasts of the peninsula. It can be often seen in mixed groups of Dunlins (*Calidris alpina*), and Kentish Plovers (*Charadrius alexandrinus*), foraging or resting along the shores of a coast or a wetland.

8.4.2.19. The Ruff (*Philomachus pugnax*) is a species breeding in lowland of high and low Arctic and sub Arctic, in areas of damp meadows, often with small pools or ditches, on wet heaths or moors and on swampy low-lying meadows. Outside its breeding season it prefers muddy margins of lakes, pools, rivers and other watercourses, irrigated levels, flood lands and marshes including brackish, saline or alkaline water, but less frequently seashores and tidal mudflats.

It is vulnerable to habitat changes through reclamation, drainage, and other alterations in land use, increased use of fertilizers, and illegal hunting. It is a common passage migrant in spring and autumn with migrating numbers being at their peak during September and April.

It uses Cyprus as a staging area. It can be commonly observed at Zakaki and Fassouri wetlands as well as the Lady's Mile and Akrotiri Merra coasts and the Salt Lake and its surrounding salt meadows, which are used for resting and refueling.

8.4.2.20. The White-winged Black Tern's (*Chlidonias leucopterus*) habitat is confined to natural shallow flooded grasslands or swampy standing water, often bordering with large rivers, or lakes which may be freshwater or alkaline with open areas bordered by stands of reeds, sedge, and other aquatic plants.

Outside its breeding season, it also occurs along coasts, on lagoons and mangrove swamps, but mainly along rivers and by lakes. It is heavily dependent on natural breeding habitats like fishponds or rice fields.

Consequently, habitat destruction and water regulation form the greatest threats to the species' survival. Due to its strong association with fresh water wetlands, it is primarily found on and around the fresh water wetlands of the peninsula (Zakaki and Fassouri marshes, and Bishop's pool).

Migrating birds are commonly observed, especially during the autumn migration when there is a peak in their numbers, although some birds will choose to stay in the area during the winter months.

8.4.2.21. The European Bee-eater (*Merops apiaster*) prefers warm open landscapes like valleys with vertical river-banks, open areas containing bushes or isolated trees, steppes, marshy terrain, rice-paddies and ponds wherever insect life is abundant.

It is threatened by the wide use of insecticides which limits the species' food supply or causes direct mortality both at its breeding and wintering grounds. During migration it crosses the Mediterranean from several traditional flyways, one of which is Cyprus.

Big numbers of Bee-eaters can be observed in the area especially during their autumn migration in September-October. Some birds will just rest overnight and some will stay for a few days to rest and refuel.

During their presence on the peninsula, they use all areas for feeding except the main body of the Salt Lake, which is used for thermalling only to gain easy lift and high altitude before flying offshore.

The eucalyptus forest on the north side of the Salt Lake is commonly used for roosting by the birds.

Furthermore, a few birds might choose to breed in the area at the old quarry near the Bishop's pool since its high vertical banks are ideal for nesting. Bee-eaters are illegally shot in the area. They also suffer a threat from the use of insecticides.

8.4.3. Sensitivity and ecology of other species

The Stone Curlew (*Burhinus oedicephalus*) and the Cyprus Warbler (*Sylvia melanothorax*) are two important avian species that occur at Akrotiri, the interest of which in the area requires further information and assessment.

8.4.3.1. The Cyprus Warbler, an endemic bird species, is associated with warm, dry, and sunny climates, and areas covered with shrubs and scrubs.

It prefers maquis habitats vegetated with *Pistacia lentiscus*, as well as *Rhamnus*, *Cistus* and *Cypripedium* species, where it nests under the dense cover provided by such plants.

This bird species apparently avoids open ground (including cultivations) as well as dense forest, wetlands and citrus plantations, but it can readily use forest edges and areas with scattered pine, and oak stands.

During the breeding season and the rest of the warm period it can be found at high altitudes, moving to lower elevation during the cold season.

Birds breeding in the lowlands tend to stay in the same area year round. It is also known that some birds migrate to Israel and surrounding areas during the winter.

The main threat of this species in Cyprus is habitat loss through human development or wildfires which have been becoming more common and intense during recent years, burning the dense cover required for the ecology of the species.

Furthermore, it is believed that the Cyprus Warbler is affected by competition for habitat from the Sardinian Warbler, whose population on island is on the rise. This could be attributed to the alteration of the true habitat of the Cyprus Warbler through summer wildfires and other anthropogenic causes, but this issue requires further investigation.

The main areas used by this species at Akrotiri are at the southern part of the peninsula where Pistacia and juniper dominate the vegetation.

8.4.3.2. The Stone Curlews, or Eurasian thick knees are primarily ground birds preferring open arid areas, with low precipitation and vegetation, giving them the ability to have all-round visibility of their surroundings.

They use pastures grazed by livestock, especially goats and sheep, heath lands mixed with short grasses, sand dunes with sparse low vegetation, poor stone pastures including steppes and desert margins, areas cleared from tall vegetation, and areas that go through a wet-dry cycle like salt meadows.

In general the species favours areas adjacent to wetlands or surface water. Because the species is mainly nocturnal and crepuscular, its observation and accurate population estimation is hard.

Stone Curlews have declined throughout their geographical range, mainly because of breeding habitat loss from human development, intensification of farming practices, and reduction of sheep and goat grazing. Also, as this species feeds primarily on terrestrial invertebrates, the extensive use of insecticides could be one of the reasons for its decline.

Stone Curlews can be found in various areas of the peninsula including RAF Akrotiri, the salt meadows surrounding the Salt Lake and Akrotiri Merra.

In the past, significant numbers of birds were using the Kouris riverbed, but the site has now been essentially abandoned due to the intensive hunting in the area.

8.5. Reptiles

8.5.1. Marine turtles

Breeding populations of two species of marine turtles, the Loggerhead (*Caretta caretta*) and the Green (*Chelonia mydas*), use the turtle nesting beaches at Akrotiri for nesting and the sea around Akrotiri Peninsula for mating.

Non-breeding populations of the same species probably use sea habitats around Akrotiri Peninsula as foraging grounds. The non-breeding interest has not been confirmed in detail, but surveys are currently underway to that effect.

8.5.1.1. Ecology and sensitivity of marine turtles

Turtles return to their natal beach to nest. Green turtles are specific to their nesting site. Loggerheads are less specific but they always come to the same area.

The mating season in Cyprus starts at the end of April and turtles mate at about 1km from the shore. Nesting starts in the middle of May and continues until the middle of September.

Female turtles usually come to beaches to lay eggs late at night. Hatchlings emerge about seven weeks later, usually at night. Sexual differentiation of hatchlings depends on incubation temperatures.

Nests that incubate at temperatures higher than 30°C produce more females whereas lower temperatures produce more male hatchlings. When hatchlings emerge they are drawn to the sea using their vision to find the brightest point which should be the sea.

Hatchlings and juvenile turtles are carnivores and they feed on macro-planktonic animals. Green turtles become herbivores after their 2nd to 4th year and they feed on sea grasses such as *Cymodocea nodosa* and *Posidonia oceanica*.

Adult Loggerheads feed on benthic invertebrates (crabs, sea urchins, molluscs, etc).

It is estimated that only one in a thousand turtles will survive to adulthood. Major threats to turtles are as follows:

- According to IUCN, there are over 150,000 captures (all turtle species) as incidental fisheries by-catch per year and in excess of 50,000 deaths per year.
- Intentional killing after capture at sea is relatively widespread in the Mediterranean.

- Boat strikes
- Dynamite fishing
- Predation on eggs and hatchlings by foxes. This can be a serious problem as foxes can destroy entire nests.
- Predation on hatchlings by ghost crabs on their way to the sea.
- Artificial light sources disorientate hatchlings
- Coastal development and loss of nesting sites.
- Night activities on the beach involving a lot of people and artificial lights disturb nesting females which may as a result return to the sea without nesting.
- Vehicle movements which compact the sand, making the digging of the nest difficult. Vehicle movements can also lead to the collapse of a nest.
- Illegal sand removal
- Rubbish on the beach
- Power boats and jet skis can disturb female turtles coming to the shore.
- Shade created by umbrellas and sun-beds on the beach can change the temperature of the sand and thus alter the sex-ratios.

The nesting beach at Akrotiri is somewhat isolated; vehicular access is only available using the dirt tracks through Akrotiri Forest.

There are no structures affecting the area with the exception of the Akrotiri Fishing Shelter which hosts the fishing boats of about seven professional fishermen.

The fishing shelter has recently gone through upgrade works which involved the installation of a low intensity lighthouse operating with photovoltaic cells and four low intensity lamps.

The nesting beach is not a popular bathing area; probably, due to its inaccessibility.

Apart from the low intensity lighthouse there are no artificial light sources in the area as development other than the fishing shelter is not permitted.

There are occasions when vehicle driving on the sand has been reported; such reports are investigated by the SBA Police.

Accumulation of rubbish, which is mainly washed up from the sea is also an issue; Akrotiri Turtlewatch organises an annual campaign to clean the beaches especially at the start of the season.

The major terrestrial threat to the nests is fox predation. In the past large proportions of nests were destroyed by foxes. In the last two years Akrotiri Turtlewatch are protecting nests by placing Hessian sacks around them and the measure has proved to be quite effective.

Whilst the main marine threat in the area is entanglement in fishing nets and occasional deliberate killing following capture in fishing nets. Long lines as well as strikes on jet-skis and power boats also cause damage, but this threat is not as serious as the fishing nets.

8.5.2. Schreiber's Fringe-fingered Lizard

The preferred habitat of Schreiber's Fringe-fingered Lizard (*Acanthodactylus schreiberi*) is made of coastal dunes or light soil close to the dunes.

Furthermore, it can be found in newly created cultivated areas with sandy soil. It feeds primarily on insect and beetles. Like many lizards, fringe-fingered lizards are excellent prey for many bird species as well as mammals and snakes. It is listed as endangered because of a serious population decline, estimated to be more than 50% over the last 3 generations. The main reasons for this decline are anthropogenic.

The threats to this species at Akrotiri include the following:

- Development related to beach recreation such as the parking and other facilities of the restaurants at Lady's Mile.
- Human disturbance in periods of high visitor activity such as Lady's Mile in the summer.
- Off road driving and race tracks at Lady's Mile area and Akrotiri Merra
- Extraction of sand in Kourris riverbed and estuary

8.6. Mammals

8.6.1. Mediterranean Monk Seal (*Monachus monachus*)

The Mediterranean Monk Seal is usually found along coastal waters, especially on coastlines of islands.

They are often found in caves with submerged entrances when the female is giving birth or rearing young, where it stays away from disturbances such as boats. It is a diurnal species that feeds in shallow coastal waters on a range of fish including eels, sardines, lobsters, flatfish, mullets and species of cephalopods.

It spends most of its time in a limited range and does not migrate large distances.

Persecution by fishermen who see them as competitors and many kills from fishing-net entanglements are the main reasons for their large decline during the last decades.

Pollution from human waste and boat traffic are also a problem for the species. Increasing boat traffic close to the areas occupied by the seals results in more collisions and disturbance. Furthermore, illegal use of dynamite for fishing is another direct threat for the species.

At Akrotiri, fishing - especially sport fishing, boating and diving/snorkeling near the southern cliffs constitute the main threat to the seals. These activities have been increasing during the last few years.

8.6.2. Bottlenose Dolphin (*Tursiops truncatus*)

The Bottlenose Dolphin occurs in a range of habitats from open water to lagoons, rocky reefs, large estuaries, river deltas, harbours, bays and other coastal regions, occasionally ranging far up into rivers.

It tends to be primarily coastal, but can also be found in pelagic waters. It is found around the world in the tropical and temperate regions, and feeds primarily on fish and squids.

The species is threatened by human disturbance, entanglement in fishing nets, by-catch of tuna fishing, captivity industry for aquarium trades, and like all cetaceans it is vulnerable to chemical and noise pollution. Intentional killing was probably the most important cause of mortality until the 1960's due to exterminating campaigns to reduce competition for fish, followed by habitat degradation and over fishing.

At Akrotiri there are no data available relating to the local threats to this species.

8.6.3. Egyptian fruit-bat (*Rousettus aegyptiacus*)

The Egyptian fruit-bat inhabits a variety of habitats, from arid to tropical areas, but is reliant on adequate supply of fruit trees and suitable roosting sites. Unlike other fruit bats, Egyptian fruit bats roost in caves, as well as similar man-made structures like irrigation tunnels, ruins and mines, and they form the largest colonies of all fruit bats.

In Cyprus they can be observed from sea levels to the Troodos Mountains, and in countries with higher altitude mountains can be observed up to 4,000 meters of elevation.

Like their name suggests, Egyptian fruit bats feed on a variety of soft fruits, as well as flowers, pollen and some leaves. For that reason they are likely to be a very important plant pollinator and seed dispenser.

Fruit bats are threatened by deforestation, increasing disturbance from tourists into their roosting caves and persecution.

In some countries within their range, fruit bats are considered as pests for eating fruits and they are persecuted, even if recent researches suggest that only small amounts of the fruit bat diet consist of commercially grown fruits. Despite this, caves that have been used by fruit bats as roosting sites are often fumigated or destroyed and in some cases bats are even poisoned and shot.

The colony at Akrotiri suffered severe damage from organized campaigns in past decades, when fruit-bats in Cyprus were officially declared as a pest and persecuted by fumigation, shooting and other methods. This colony seemed to be recovering since the end of the persecution, but in the last three years it has been declining as most colonies of this species in Cyprus. The reasons for this decline are not yet known.

8.6.4. Common Bentwing Bat (*Miniopterus schreibersii*)

The Common Bentwing Bat is a colonial bat species that roosts mostly in caves and mines as well as human-made tunnels, ruins and some buildings.

During the breeding season they prefer large warm caves and during the winter when they hibernate caves with constant microclimates. This species forages in a variety of habitats, varying from open to semi-open natural and artificial habitats, including suburban areas.

It feeds mainly on moths, grasshoppers and occasionally flies. It is very sensitive to disturbances and may be locally eradicated by human workers and tourist activities. In its European range, disturbance and habitat loss of underground habitat (caves), as well as pesticide and insecticide use are threatening the species with local extinction in some countries.

Mass mortality events have been observed in several counties but the reason has not been identified yet.

The two roosts at Akrotiri are relatively safe from disturbance as access to one of them is extremely difficult and the other has been protected via a locked door with a mesh which allows access to the bats.

8.6.5. Lesser Horseshoe Bat (*Rhinolophus hipposideros*)

The Lesser Horseshoe Bats naturally roost in caves, but with the spread of human population into their habitats, they have found homes in man-made structures, including roofs, tunnels, attics and cellars.

They are generally solitary bats, except when forming maternity roosts in the summer. During this time, groups of 10 – 100 individuals, consisting mostly of females, come together to raise their young.

The preferred habitat of the species consists of shrub land valleys, open grassland and woodland edges. They prey primarily on small insects, such as mosquitoes, crane flies and spiders, which they hunt near water, damp wooded areas, riparian vegetation, and along hedgerows.

Lesser Horseshoe Bat's major threats include habitat loss due to human disturbance, including disturbance or destruction of roosts, pollution, loss of suitable foraging habitat, and change in prey dynamics by the wide use of insecticides, which reduces prey availability.

Further work is required to confirm the status of this species at Akrotiri and its sensitivity.

8.6.6. Greater Horseshoe Bat (*Rhinolophus ferrumequinum*)

The Greater Horseshoe Bat is the larger of the two horseshoe bats found in Europe. It seeks roost in caves, cave-like spaces under rocks and boulders, but sometimes can form roosts, especially for maternity, in man-made structures.

Its preferred habitat is traditionally managed farmlands, grazing pastures, broad-leaved vegetation, open trees, areas of limestone and scrub near water. In the last 100 years over 90% decline of the population has been observed, mainly because of habitat loss, habitat fragmentation and isolation.

Furthermore, intensive farming methods, destruction of woods and roosting sites, and the use of chemical insecticides, which contributes to the reduction of available prey, have all contributed to the population decline of the species.

Further work is required to confirm the status of this species at Akrotiri and its sensitivity.

8.7. Amphibians

The Mediterranean Tree Frog (*Hyla savignyi*) is probably one of the most heat-tolerant species of all the Palearctic treefrogs, living in very hot and dry regions.

Its natural habitats include temperate shrub land, subtropical, or tropical dry shrub land, Mediterranean type shrubby vegetation, temperate grassland, subtropical, or tropical dry lowland grassland, rivers, freshwater lakes, intermittent freshwater lakes, freshwater marshes and springs, temperate deserts, rural gardens, canals and ditches.

Even though it is found in many kinds of habitats, freshwater wetlands are the most preferred ones due to the abundance of insect prey. The species goes in the water only for breeding.

During the cold winter season (November - March), hibernation occurs on land, in burrows in the soil and other hiding places.

This species is threatened by habitat loss, severe droughts, drying from water extraction, water pollution and anthropogenic changes of habitat and overgrazing which in combination with habitat loss has led to localized declines. In arid regions, the presence of freshwater wetlands seems to be a critical factor for the existence of the species.

Zakaki, and Fassouri wetlands, as well as the Bishop's pool area are the preferred areas of this species near Akrotiri, but it can also be found in smaller numbers in other areas like the eucalyptus forest and the acacia stands as well as the citrus plantations. This species has an important role in its ecosystem.

It consumes large amounts of insects, but most importantly is an excellent food source for many waterbirds, as well as some small raptors and snakes. Its role can be characterized as crucial for some bird species (especially the ones that are using the area for staging), as an important source of food.

The main threat for this species at Akrotiri is currently the prolonged lack of standing water at Fassouri Marsh. Other possible threats include pollution – especially of the water and lack of information on its migration/hibernation grounds, which could be under threat.

8.8. Invertebrates

The fairy shrimp *Brachinella spinosa* occurs mainly in the Salt Lake.

Besides water availability and quality, which are primary factors for the ecosystem of the wetlands at Akrotiri, the lifecycle of *Brachinella spinosa* depends largely on the seasonal variation of the water chemistry in the Salt Lake, particularly salinity and pH.

8.9. Fish

The Mediterranean Killifish (*Aphanius fasciatus*) is restricted to coastal waters including islands. It is found in numerous habitat types although mostly inhabits coastal waters such as lagoons, salt marshes, and first order stream in areas where submerged vegetation and/or filamentous algae grows thickly.

It is highly adaptable and tolerant of a wide range of salinities from pure freshwater to hyper saline conditions, and feeds mainly on small invertebrates.

It is threatened by habitat destruction and eutrophication, and like most aphanius species is out competed by *Gambusia affinis* and other introduced species at some parts of its range while habitat degradation and pollution continue to affect others.

Some populations have probably been wiped out already and studies suggest that the situation is only likely to deteriorate in the future.

At its main site at Zakaki, the species is under threat from pollution and habitat degradation. Recently, big numbers of *Gambusia* sp. have been observed, first at Zakaki, and subsequently in wider areas. It is presumed that the unlicensed introduction of this species aimed at controlling mosquitoes, following the unusually high precipitation during 2011-2012. It is now necessary to monitor how the local ecosystem will react to this introduced species, in order to manage accordingly.

Further work is also required to confirm details of its lifecycle, especially during the drier periods. Local information suggests that in the past, when there was more water in the area, this species was abundant in the Fassouri Marsh. This is supported by the observation of very big numbers of this species in this marsh during the period when the ditches between the marsh and the Salt Lake were blocked.

Therefore, the deterioration of Akrotiri aquifer and the drying out of Fassouri Marsh must have had a profound impact on this species and the food chain it supports.

9. Hydro-geology

9.1. Geology

The underlying geology of the peninsula consists of two formations, those of Pakhna (Miocene) and Athalassa (Pliocene), with calcareous sandstones, grits and conglomerates, and gypsum beds, chalk and chalk marls. These are mostly covered by sedimentary, alluvium materials.

Akrotiri Peninsula has taken its present form through sedimentation in a double tombolo process, combined with land uplift and sea retreat. This joined the former limestone islet of Akrotiri to the mainland of Cyprus via sedimentation from Garyllis and, mainly, Kourris Rivers on the east and west side respectively.

The islet joined with the mainland on the western side earlier than the eastern one. Maps such as Ortelius 1573 show the eastern side still open to the sea and Kourris River with two distributaries, the eastern one of which used to flow into what is today the Salt Lake.

This eastern branch eventually blocked through sedimentation, but also a local tectonic fault may have played some role in the shift of the river outlet to the sea. The remnants of the two tombolos include coarse grained gravel and sand deposits, whereas the central deposits of sands silts and clays are finer.

The western coast is subject to clock-wise coastal drift which could explain the deposition of finer sandy materials on the south-western coves of the peninsula.

The geochemical characteristics of soil based on soil classification and the underlying lithology have recently been surveyed by the Cyprus Geological Survey Department in the preparation of a Geochemical atlas of Cyprus, which includes Akrotiri.

9.2. Climate

The climate at Akrotiri is Mediterranean with dry summers and mild winters. The warm season covers the period mid-June to late September, when precipitation is low.

The cold season is from early December to late March, when precipitation is relatively high. The average annual precipitation over the last 40 years has been 370 mm with a slightly increasing trend, unlike the total diminishing trend for the whole of Cyprus (average 480 mm) which has dropped by about 80 mm during the last century.

The air humidity of the area is quite high, especially during the summer. The winds are typically light to moderate and the prevailing directions are from the west.

Mediterranean climate, rainfall records, high evaporation in the Salt Lake with strong bias towards the summer months. Modeling studies have predictions for desertification of the wider area.

Average temperature in Cyprus has risen by almost a degree Celsius and annual precipitation dropped by about 80 mm during the last century. The trends for mean sea level rise are difficult to predict in the area.

9.3. Hydrological compartments

9.3.1. Fassouri and Zakaki marshes

The marshes north of the Salt Lake from Zakaki to the east up to Fassouri Marsh to the west are the remnant of extensive marshes, drained and reclaimed in the past century to create agricultural land and eucalyptus plantations.

Fassouri Marsh is the discharge receptor of Akrotiri aquifer, but the level of the surface water at the marsh is not necessarily the same as that of the aquifer. Zakaki Pool with its surrounding marshes form an eastern geographical mirror image of Fassouri Marsh, which is supplied with water mainly via rainfall.

9.3.2. Akrotiri Salt Lake

Akrotiri Salt Lake is a saline lagoon covering about 10 Km² with a much bigger catchment area around it. Most of its water comes from direct rainfall and runoff mostly from the north and less from the south.

It also receives water via drainage channels from Fassouri Marsh, Akrotiri Merra and the western aerial farm. It is also subject to limited inundation from the sea after periods of eastern winds and resulting swell. In recent years it has been receiving water from storm sewers that feed Zakaki Pool from the north.

It mostly dries out during the summer months and has a maximum depth of 2.7 metres below sea level. Water levels are up to 70 cm at the maximum depression and salinities are variable, but generally high to very high.

9.3.3. Coastal lagoons

These include lagoons east of the Salt Lake towards Lady's Mile, which are natural depressions, and lagoons formed by quarrying near the western coast within Akrotiri Merra. All the lagoons most probably have underground connections with the sea.

9.3.4. Bishop's pool

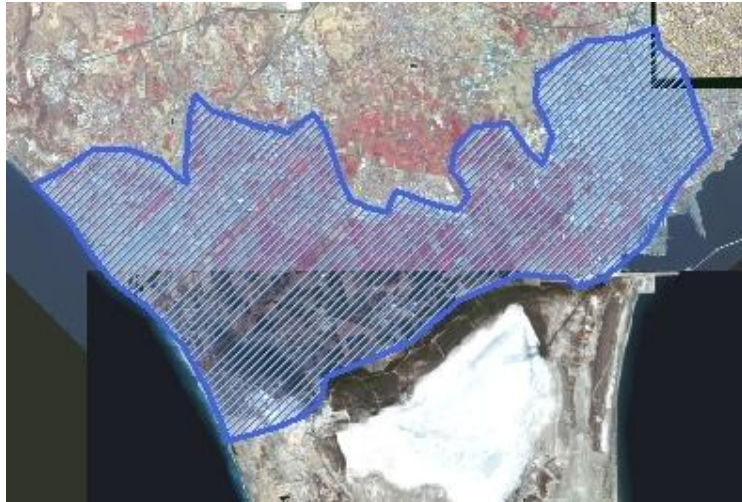
The pool at the Bishop's farm is man-made and was constructed for irrigation purposes. It is supplied with water from Limassol and the RAF sewerage farm.

9.3.5. Akrotiri aquifer

Akrotiri Aquifer is based on the Nicosia - Athalassa formation rocks and the overlying alluvial deposits of silts, sands and gravels and its extent is shown on map 96. It is believed that the aquifer consists of two separate parts, the western one extending roughly up to Asomatos being fed by Kourris and the eastern one by Garyllis.

Akrotiri aquifer has an estimated average depth of 60 meters, with a maximum of 110 -130 meters at its southern boundary. It is one of the biggest aquifers in Cyprus with an estimated capacity of 500,000,000 cubic metres.

During the last decades, as a result of the construction of Kourris Dam, the abstraction of water through hundreds of boreholes and the intense agricultural activity, the aquifer has been deteriorating in both quantity and quality of water with salinisation and nutrient enrichment. The water levels in the aquifer fluctuate, depending on precipitation, but the quality of water deteriorates continuously and becomes more and more irreversible.



Map 96: Akrotiri aquifer

9.3.6. Hydrological model

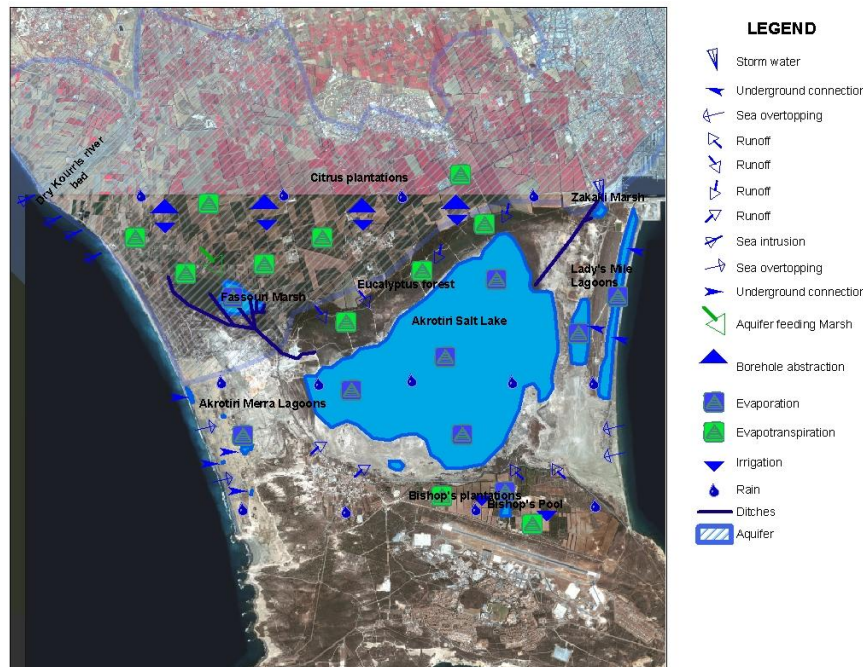
A rough conceptual model of the hydrology of the area can be seen on map 97.

The main input to the aquifer and wetlands is from precipitation. Other input components include storm sewers, storm overtopping, irrigation and sea intrusion.

The losses include evaporation, evapotranspiration and abstraction via boreholes.

Internal movements of water include drainage ditches and surfacing of aquifer at Fassouri Marsh.

Current knowledge suggests no significant underground flow from the aquifer to the Salt Lake. Some flow is attributed to capillary action, with some surfacing water that evaporates quickly in the summer without forming any ponds.



Map 97: Hydrological model

9.3.7. Hydro-geological risks

9.3.7.1. Coastal erosion

Most areas between the former Akrotiri islet and mainland are currently under sea level mainly as a result of the construction of the river dams, extensive quarrying of gravel and sand in the past.

As a result, the coastal areas, especially the western and southern coasts, which are exposed to prevailing winds, have been suffering from erosion. Also, sea level rise and tectonic processes could be playing a significant role in the coastal erosion processes. Some areas such as the southern cliffs are also subject to aeolic erosion.

Soft measures have been implemented along the western coast, including mechanical movement of pebble material from the dry Kourris riverbed to certain parts of the coast near the river estuary, as well as the construction and maintenance of two embankments along the western coast of the quarry area.

9.3.7.2. Silting of the Salt Lake

There is no monitoring system in place, but anecdotal information suggests that the Salt Lake is subject to a silting process, especially from the north.

9.3.7.3. Water quantities

The reducing trends for precipitation in combination with the construction of Kourris dam in 1989 and the intensive abstraction of ground water for agriculture and potable water have been causing a drop of the water table at Akrotiri, estimated at 20m at the Kourris River recharge area, 1-2 m across most of Akrotiri aquifer and about 1m near Fassouri Marsh.

This aquifer has been suffering from sea intrusion and the levels of surface water at Fassouri Marsh have been dropping over the last few years. This is having obvious and significant impact on the marsh ecosystem.

There is no systematic monitoring and the trends of water quantities in the Salt Lake system, but previous studies have suggested that the Salt Lake is mostly dependent on precipitation.

Zakaki Marsh has benefited in the last few years from storm sewer projects for the south-western part of Limassol and has been providing alternative habitat to bird and other interest in the dry conditions at Fassouri Marsh. However, there has been much debate on the quantities of water from storm sewers that would be fed into the wetlands and decisions have been made for significant quantities to be disposed of at sea.

9.3.7.4. Surface water levels

Besides the direct effect of water availability, surface water levels in different areas depend much on the management of the drainage ditches.

The most important ditches are the ones that drain water from Fassouri Marsh to the Salt Lake through the aerial farms and the ditch that joins Zakaki Marsh with the Salt Lake.

The lack of a maintenance and management scheme for these ditches has caused various problems in the past, especially with water-logging during periods of high precipitation.

9.3.7.5. Water quality

The reduction of the water table to below sea level for most parts of the aquifer has been causing sea intrusion and irreversible salinisation. In addition, nitrate and phosphate enrichment from agriculture has been affecting the quality of water in the aquifer and the wetlands.

Other water quality risks include the extensive use of pesticides in the agricultural estate north of the wetlands, the planned golf course development north of the Salt Lake, the possibility of pollutants in the storm water at Zakaki Marsh, the operation of an industrial area at Kato Polemidhia and the burial of PCB transformer oil at a site a few kilometres north of the Salt Lake.

9.3.8. Objectives and management

9.3.8.1. Water quantities

Sufficient quantities of water need to be secured to ensure sustained wetland functions, including:

- Re-charging of Akrotiri Aquifer through the recharge ponds in Kourris river bed, using primarily recycled water and water from Kourris Dam when possible. The level of the aquifer should be adequate to ensure surface water at Fassouri Marsh during the late autumn-winter-early spring.
- Abstraction from the aquifer should be strictly regulated. Irrigation of the plantations and supply of potable water should be maintained from other sources, including recycled water for the former and desalination for the latter.
- Supply of storm-water to Zakaki Marsh should be maximised, subject to quality factors. Other sources of water during drought conditions should be considered.
- Water availability at the Bishop's Pool should be sustained.

9.3.8.2. Surface water levels

- Appropriate water levels should be decided and maintained through controls on the main ditches from Fassouri and Zakaki marshes to the Salt Lake. The ditches should be cleared regularly to maintain their drainage capacity.
- The end of the ditch through Pluto antennae should be provided with a herring bone outlet to ensure appropriate dispersion of water and resolve ponding issues.
- Consideration should be given to digging out parts of Fassouri Marsh in order to maintain surface water during drought conditions.

9.3.8.3. Water quality

- The quality of water supplied to Zakaki Marsh through the storm-sewer should be managed through mechanical means and biofiltering.
- The quality of recycled water to be supplied to the aquifer should be managed through treatment and filtering.

- The storm overtopping connection of Lady's Mile should not be interrupted.
- Measures should be considered to monitor and improve the quality of run-off from the plantations and the golf course development.
- The provisions of the waste management Ordinance should be strictly implemented to prevent water pollution from fly-tipping and other waste disposal activities.

9.3.8.4. Water ecology

- Consultants have been commissioned by the SBAA to propose appropriate parameters for monitoring the wetland quality through the connection of biotic with abiotic parameters. Proposals will also be made in terms of further studies and research to fill knowledge gaps for the ecological functions of water in relation to the important environmental features of the peninsula.
- Appropriate management measures should be decided based on the above work, to ensure appropriate cycles in the lake's hydrology in terms of seasonal quantities, salinity etc. to support its ecological functions.

9.3.8.5. Water monitoring

The monitoring system outlined in 9.3.8.4 will include water parameters such as levels, flows, properties etc.

9.3.8.6. Erosion

- An integrated coastal zone management plan is required for the whole of Episkopi Bay and Akrotiri Peninsula, in parallel with the existing plan of the RoC for the rest of the Cyprus coastal zone.

9.3.8.7. Silting

- A monitoring system is required for the Salt Lake, Fassouri Marsh and Zakaki Marsh, to establish the rate of silting and help decide appropriate measures.

10. Historic environment

10.1. Archaeology

Human activity has been documented on the Akrotiri Peninsula as far back as the Pre-Neolithic period (10,000-8,500 BC) up to the present day.

The site known as Aetokremmos, hosts the earliest recorded archaeological site in Cyprus; a hunter-gatherer site dating back to 12,000 years ago. Findings have included bones of pigmy hippos and elephants.

The wider area includes many other archaeological and religious sites of later periods such as churches, rock-cut tombs and catacombs.

The many-recorded archaeological sites clearly demonstrate that the area has been inhabited during different historic periods.

Aetokremmos has approximately 1500 recorded rock-cut tombs dating from the Roman, Byzantine and Early Christian periods.

There are also many other archaeological sites on the Peninsula, dating from Hellenistic, Roman, Byzantine and Christian periods.

10.1.1. Legislation

10.1.1.1. The Antiquities Ordinance (12/1975)

The Ordinance prescribes the procedure for declaring ancient monuments and prohibits activities which are damaging to antiquities.

The Administrator may by notice under the Ordinance order that no building be erected, reconstructed, repaired or demolished, no tree felled and no advertisement displayed in the area of an ancient monument without a permit from the Area Officer.

Subject to the provisions of the Ordinance, all immovable antiquities lying undiscovered in or upon any land within the Areas shall be the property of the Crown and all movable antiquities found in excavations or discovered in or upon any land within the Areas shall be the property of the Republic.

It is an offence to knowingly remove any antiquity without being in possession of a licence. Any person discovering an antiquity should in the first instance report it to the SBAA Area Office.

It is also an offence to make any alterations, additions or repairs affecting the architectural character to such ancient monument or demolish, leave any refuse, rubbish litter or fell any tree growing within the boundaries of the same or shall do anything which might injure or destroy the archaeological importance or structure of such ancient monument save in accordance with the terms of a written permit from the Chief Officer.

The Administrator, may by notice to be published in the Gazette order that, within an area of an ancient monument, no building shall be erected, reconstructed, repaired or demolished and no tree shall be felled save in accordance with the terms of a written permit from the Area Officer.

It is an offence to export antiquities without a licence.

The Chief Officer upon receiving notice of the discovery of an antiquity in the Areas, must report it to the appropriate authorities in the Republic and enquire whether they wish to acquire the said antiquity for the Cyprus Museum in the Republic and in such case, if the antiquity is not already in their possession, cause the antiquity to be delivered to such authorities and after consultation with such authorities, pay to the finder on their behalf such sum in the form of a reward as appears to him reasonable in the circumstances.

No person shall excavate or cause excavations to be made whether on his own land or elsewhere for the purpose of discovering antiquities without a licence.

The SBA/MOD and their partner contractors operate a minimum watching brief for any construction project that involves the breaking of the ground.

There are a total of sixteen scheduled ancient monuments sites within the Peninsula, ten within the first schedule (part II) and six in the second schedule.

10.1.1.2. Protection and Management of Nature and Wildlife Ordinance (26/2007)

Any new project, such as an archaeological excavation, which has the potential to either directly or indirectly affect a Special area of Conservation must be subjected to an Appropriate Assessment under the provisions of section 10 of the Ordinance.

The project will only be approved if the AA concludes that there will be no adverse effect on the integrity or character of the SAC.

In certain circumstances, notwithstanding that the AA concludes that the project may have an adverse effect on the integrity of the SAC, it may be approved based on the absence of any satisfactory alternative (for example the antiquity may be lost due to coastal erosion).

10.1.2. Resource evaluation

10.1.2.1. The Pre-Neolithic period (10,000-8,500 BC)

The isolated nature of the Island of Cyprus in the prehistoric periods has meant that knowledge of boat-building and some degree of seamanship would have been required to have simply reached the Island. Due to this isolation and the absence of any firm evidence to the contrary, the general view held by archaeologists up to the 1980s was that pre-Neolithic occupation of the Island (before 8000 BC) was unlikely (Simmons 1999). However, excavations at Akrotiri Aetokremnos on the southern cliff-edge of the Akrotiri Peninsula revealed the remains of a small rock shelter with 'in situ' stratified deposits, including the remains of worked stone tools in association with the remains of pygmy hippopotamus (Simmons 1991 and 1999). The importance of this site was confirmed with radiocarbon dates of approximately 10,000 BC, making the site the earliest inhabited site found so far in Cyprus. Fieldwork in 2010 undertaken by Dr A. H. Simmons as part of

the Akrotiri Dunes Project re-examined sites first identified by Wing Commander Pile and concluded that these small sites are most likely related to Aetokremnos, based on artifact similarities. Furthermore, the team considered that of these sites had been badly damaged by natural and cultural forces.

10.1.2.2. The Neolithic and Chalcolithic (Copper Age) periods (8000-2900 BC)

Relatively few firmly dated or systematically recorded sites or find-spots from these periods have been recorded within the study area, a finding that is somewhat at odds with the reporting of 'some quantity of early Chalcolithic pottery, flint and ground stone artifacts' from the area of the RAF base (Heywood 1982). The most likely explanation is that the absence of recorded material from the study area may reflect the bias for archaeological survey within the RAF base where Pile identified and recorded numerous lithic and ceramic sites of early prehistoric date (Pile 1980) Further undiscovered sites dating to these periods may exist within the southern area of the Peninsula although Simmons has found that these fragile and vulnerable sites have largely disappeared as a result of erosion and human activity.

A stone axe was found in 1943 close to the Monastery of St. Nicholas of the Cats and at least one large Chalcolithic site has been identified from surface remains in the southeastern area of the Peninsula at Xenotaphin.

10.1.2.3. The Bronze Age (2900 BC – 1050 BC)

Only one Bronze Age site is recorded within the study area - that of the Late Bronze Age settlement and cemetery site at Asomatos Fassouri, excavated in the 1960s, just to the east of the village of Asomatos (Catling 1963). The site presently lies close to the northern edge of the Salt Lake, although within the Late Bronze Age this location would have been on the edge of the shore.

Within this period, the area of the Larnaca Lowlands and coastal region has been shown to play a major role, especially in Late Bronze Age trade (Blue 1994). Closer to the Akrotiri Peninsula, Late Bronze Age sites have been excavated at Episkopi Phaneromeni and Episkopi Bamboula, both within 8km of the Pluto aerial site.

Although these sites appear to have not played as prominent a role as those in the Larnaca region, the area may still have still formed an important outlet for the distribution of copper. A number of copper production sites have been identified, running northwards up the Kourris Valley, which until recently contained one of the Islands major rivers.

It has been suggested by Blue that the area to the north of Akrotiri Island may have provided a sheltered anchorage, which may have been utilised by the site at Asomatos Fassouri (Blue 1994, 37).

10.1.2.4. The Cypro-Geometric and Classical periods (1050 BC–c. 310BC)

The period spanning the end of the Bronze Age and into the Cypriot Iron Age saw the rise of powerful city-states. Immediately to the northwest and northeast of the Peninsula, the cities of Kourion and Amathus (now Limassol) were associated with harbours and

anchorage and played prominent roles in the history of Cyprus, under Persian rule. In contrast, the isolated offshore island of Akrotiri and the mainland shoreline may have appeared relatively unattractive.

10.1.2.5. The Hellenistic period (c. 310 BC – 50 BC)

In the years following the death of Alexander the Great, Cyprus flourished under Egyptian Hellenistic rule. Unlike the preceding periods, the Akrotiri Peninsula starts to provide some widespread evidence for activity, mainly focused on the south and southeast areas of the Peninsula. The absence of systematic excavation of these sites, together with the often ambiguous dating obtained, does make it difficult to define the exact nature and extent of the activity during this period.

A possible Hellenistic sanctuary site was noted during the 1954 survey, close to the Monastery of St. Nicholas of the Cats. Further buildings, quarries and rock-cut chambers along the south of the Peninsula have also been suggested as dating to this period (Heywood 1982; Haggerty 1985 and 1986a). At least two separate harbour or anchorage sites have been located at Dreamers Bay and Tarratsos which, although producing only Roman material, are of a structural type common in the Hellenistic period.

It has been noted that during antiquity, there were many more harbours in Cyprus than today (Nicolaou 1966). Many of these would have been artificial due to the lack of natural gulfs and suitable anchorages, the nearest known harbour to Akrotiri being the Roman square harbour at Amathus. It is also possible that Curium may not have had a formal harbour, but a simple anchorage, thus making any harbour installation on the Akrotiri Peninsula of particular importance.

Gravel extraction in 1977 at Limnes Tou Ayiou Yeorgiou uncovered Hellenistic or Roman material 150m inland, less than 1.5 km to the southwest of the mast site (Heywood 1982). An important implication of this discovery is the suggestion that the finds may have come from a shipwreck site, implying that this area was still submerged in this period (Blue 1994, 37; Collombier 1987). However, the assumed association of these finds to a shipwreck has been disputed (Parker 1992, 49). Whatever the source of the finds, it is likely that either within this period or very soon after, the former Akrotiri Island may have been reconnected with the mainland by a permanent narrow alluvial land-bridge.

No major settlements of this period have been positively identified. However, it is entirely possible that the known Roman settlements at Pano and Kato Katalimata and the associated harbour site at Dreamers Bay may have had their origins within this period.

10.1.2.6. The Roman period (c. 50 BC - AD 324)

The Roman and Byzantine periods provide the majority of the remains found within the Akrotiri Peninsula, mainly focused along the southern half of the Peninsula occupied by the RAF Akrotiri base. At least two unexcavated Roman settlements, Pano Katalimata and Kato

Katalimata (see above paragraph) have been located in the heart of the base although they may have been, together with the nearby harbour installation, founded in the Hellenistic period.

Almost immediately to the south of the two settlements a large number of sites have been identified along the steadily eroding cliffs which line the southern edge of the Peninsula. These include quarries and up to 1,500 rock-cut tombs have been identified, linked by fragments of a Roman trackway. While many of these sites are likely to date to the Roman and Byzantine periods, an earlier date again cannot be ruled out. Excavations at some of the rock-cut chambers at Lania found possible evidence for Hellenistic construction and later Roman refurbishment and reuse, possibly for ritual purposes (Haggerty 1985 and 1986a).

Also located on the southern edge of the peninsula at Dreamers Bay, evidence of a large harbour and associated installations, are gradually coming to light. These include the foundations of possible warehouses and at least one large high status domestic building and a possible boundary wall.

An on-going survey of exposed remains carried out by the WSBA Archaeological Society has identified at least nine additional buildings or small settlements/ 'farmsteads' and a possible fort. These have been focused mainly within the southeastern section of the peninsula, although one settlement and fort were found close to Akrotiri village.

At least one communication route has been associated with this period, i.e. the southern coastal trackway. With the presence of at least two substantial Roman settlements at Pano and Kato Katalimata and numerous smaller 'farmsteads', including the nearest one to the Site at Akrotiri, a network of road or trackways is likely to have existed.

At least one route is likely to date to the Roman or Byzantine period, the trackway to the south of the Salt Lake, which connects the Monastery of St. Nicholas of the Cats to Akrotiri village. It is not impossible that this track would have connected with other roads/trackways from the main Roman settlements at Pano and Kato Katalimata. If this is the case, it may have eventually ran north across the land-bridge to the mainland, joining the main Curium Road, known to have linked the cities of Kourion and Amathus.

Another activity famously associated with the Salt Lakes of Cyprus was the production of salt. Antigonus of Carystus commented on salt collection from the Salt Lake at Kition in the 3rd century BC and Pliny mentions salt collected from Kition and Salamis, in the 1st century AD. The salt from Cyprus was highly prized, not only for its use in food preparation and as a preserver but also as a valuable treatment for certain skin diseases. Salt extraction continued to be recorded beyond the medieval period until recently (Gifford 1978).

10.1.2.7. The Byzantine, medieval and Venetian periods (AD 324 - AD 1571)

The widespread activity found throughout the southern area of the Peninsula does appear to have continued, at least, into the Byzantine period. At least one major settlement has been located at Katalymata Ton Plakoton in the southwestern part of the peninsula where the well-preserved floor layers of an important ecclesiastical building of the 6th or 7th century have been revealed by excavation (Dr. E. Procopiou – Department of Antiquities website). A mosaic floor uncovered close to the grounds of the Princess Mary Hospital to the south suggests that this settlement may have been extensive in size.

At about this time, the Monastery of St. Nicholas of the Cats is traditionally thought to have been founded by Basilian monks sent to Cyprus by the Emperor Constantine in AD 325, although the present building fabric dates to the 13th-15th century (Heywood 1982, 171).

A series of at least three major earthquakes hit the area in the 4th century AD. These had a serious affect on the City of Kourion, parts of which were either abandoned or extensively rebuilt. Arab raids, which started in the early 7th century, did lead to the final abandonment of Kourion and possibly other existing settlements on the Peninsula.

From the 9th century, the Arab threat had largely diminished, and up to the 13th century, large numbers of churches and monasteries were constructed under the patronage of various Byzantine officials (Papanikola-Bakirtzis and Iacovou 1998). Recent excavations at a likely monastic establishment at Fassouri have dated it to the 12th century, if not earlier. This establishment is likely to have been the focus for an associated chapel at Ayios Dhimitrianos, an early phase of the church at Asomatos and the church at Ayios Yeorgios. While the exact nature of the monastic establishment is not certain, it may not have been associated with a local lay settlement.

The Stylos order associated with the monastic establishment were well-known for their austere and isolationistic nature and the site may have functioned as a hermitage or, at the very least, a self-contained community. Within this period, the Akrotiri Peninsula was well known as an inhospitable area, filled with snakes and mosquitoes and a 'tainted and poisonous air', with the Monastery of St. Nicholas of the Cats famous for its snake-hunting cats (Heywood 1982). It may well be that the relatively uninhabited and hostile peninsula may have attracted such religious communities in their quest for solitude and isolation from contemporary society.

During the Venetian period, 1489-1571, further activity is evident within the peninsula. A watchtower is thought to survive on the southern edge of the coast, part of the early warning system constructed to counter the threat from the growing Ottoman Empire. Quantities of Venetian material have also been found at Lania, in-filling a Hellenistic well.

One activity, which may have left its mark on the peninsula, was the sugar trade, which was centred on Kolossi. Sugar cane was introduced to Cyprus in the 10th century and may have been grown around Kolossi as early as AD 1210. It was certainly intensively cultivated from the 14th-16th century, forming the major Cypriot export. As part of this trade, barges were used to move the product to harbours (Solomidou-Ieronymidou 1998).

Archaeological survey has identified an 8m wide canal connecting the Salt Lake with Akrotiri Bay, at the eastern edge of the Peninsula. This has been identified as possibly dating to the Venetian period, used to maintain a channel into the Salt Lake, at a time when the natural access into the sea must have been rapidly closing.

Across the western edge of the Salt Lake a bridge dating to the same period crosses a second 8m wide canal section which bears many similarities in size and orientation to the eastern canal. On an aerial photograph this western canal, now mostly in-filled, clearly continues southeast towards the Salt Lake. The canal also continues northwest when, just beyond the limits of a cluster of antennae, it abruptly turns to the north, in the general direction of Kolossi (Photo AKR/017 G5/02). Both the bridge and canal have been extensively repaired and maintained, removing many of their original features.

Known throughout Europe as gifted mapmakers, it is not surprising that the Venetian period saw the production of the first detailed maps of Cyprus, (Iacovou 1998). The most successful of the early maps was a survey in the 1560s, which was used by Abraham Ortelius. His Map of Cyprus (1573) continued to be a major source map until the 19th century. His map shows the Peninsula as relatively uninhabited, with the area to the east of the Salt Lake open to the sea via a narrow natural channel. Both the Monastery of St. Nicholas and Akrotiri village are marked, but the rest of the area is bare. There is also no reason why edges of the Salt Lake should not have contained temporary jetties and quays. A number of Venetian maps do show ships/barges moored within the Salt Lake.

10.1.2.8. Post-medieval and Modern era (AD 1571 – present)

The Island came under Ottoman control in 1571, a situation which continued until the end of the 19th century, when the administration of Cyprus passed to the British and finally to independence in 1960.

The Akrotiri Peninsula continued to be sparsely occupied until the construction of the RAF base in the mid 1950s, although Seigneur de Villamont reported in 1589 that fish entering from the sea were caught in the Salt Lake. This activity is echoed by Roux's map of Limassol (1764), which refers to the Salt Lake as a 'Fishpond'. Akrotiri village remained relatively small throughout this period, its main industry in the 1880s being the production of mats and weaves from rushes collected from the Salt Lake (Goodwin 1984). Under Ottoman control, the Monastery of St. Nicholas of the Cats was soon abandoned, although this may have been hastened by two serious earthquakes in 1567 and 1568 (Heywood 1982, 171).

Within this period, if not earlier, the gradual enclosure of the Salt Lake was completed, with a continuous landbridge to the east of the Salt Lake. In contrast to Ortelius's map of 1573, Oliva's map of Island of Cyprus (1638) shows the Salt Lake as being enclosed, with the canal leading into Akrotiri Bay and towards a line of moored ships (Iacovou 1998). Although the general accuracy of Oliva's map is rather poor by today's standards, his observations on the Salt Lake may be accurate, the English author and traveler Pococke was able to travel by mule-train completely around the Lake in 1738 (Heywood 1982, 165).

The Captain of HMS Volage, Thomas Graves, produced a detailed map in 1849 which depicts the Salt Lake as completely enclosed. The next detailed map produced, The Kitchener map of 1882, still forms the basis for map production today. This map was the first to accurately display such features as road/tracks and churches, in addition to the main settlements. The Peninsula continues to be shown as only sparsely occupied.

At Fassouri, the majority of the present village only dates to 1931 when the Cyprus Palestine Plantations Co. began operations. Major steps appear to have been taken in reclaiming land, and reducing the mosquitoes, from the Salt Marshes, with the use of drainage systems and Eucalyptus trees which appear within the northern edge of the Site (letter dated 1964, Akrotiri archive). From the 1980s, the area has been used for extensive citrus groves and vineyards.

The greatest impact within the Peninsula, as a whole, in this period was the construction of RAF Akrotiri in the 1950s, which brought a scale of activity last seen in the Roman and Byzantine periods.

Much of the recent information relating to the Historic Environment on RAF Akrotiri is derived from two principal sources: research undertaken by members of the Western Sovereign Base Area Archaeological Society and a Desk Based Assessment undertaken by Wessex Archaeology in 2002. The Wessex archaeology Assessment presents a synthesis of the archaeological surveys and investigations undertaken in recent times on the Akrotiri Peninsula.

10.1.3. Quantification

A total of 39 sites have been identified within the Akrotiri. The sites have been identified by a combination of documentary searches, field reconnaissance and consultation with the RoC.

The current database of sites is unlikely to be exhaustive and it is almost certainly the case that as yet undiscovered sites are present.

10.1.4. Condition

Seven of the 39 sites included in a baseline condition survey, were in good condition, 10 in moderate condition and 22 in poor condition. Only four of the Scheduled Ancient Monuments were surveyed, two were in a moderate condition and two were in a poor condition.

In 23 cases (59%) the cause of a site's poor condition was scrub encroachment, with cliff erosion and disturbance by people as contributory factors.

10.1.5. Current and proposed excavations

10.1.5.1. Current excavations

The only current excavation is carried out at Katalymmata ton Plakoton. The project is undertaken by the RoC Department of Antiquities. Excavations began in 2007, and continue to the present day. The research is supported by the SBAA Environment Department and the Akrotiri Community Council.

10.1.6. Threats

Threats include both natural and anthropogenic factors e.g. erosion, looting, development, vehicular access and various other damaging activities.

A relatively large group of lithic and ceramic findspot sites of prehistoric date, discovered by Pile in 1980 along the southern coastal cliffs, have disappeared as a result of both erosion and human activity.

There are two designated sites Agios Markos and Pano Katalymata which are located in the centre of RAF Akrotiri both are surrounded by buildings and infrastructure. These sites are potentially vulnerable to encroaching development on their margins, scrub encroachment and people activity.

10.2. Fossils

There are many interesting fossil deposits to be found within the Akrotiri Peninsula, particularly within the station boundaries. The collection of fossils is a practice that is currently non-regulated by any Ordinance. At present this finite asset is not deemed to be at any serious risk but due consideration should be given to regulating this activity.

10.3. Environmental Archaeology

It is the study of the long-term relationship between humans and their environments. Various sub-disciplines are involved to document and interpret this relationship, including paleoethnobotany, zooarchaeology, geophysics, landscape archaeology, human biology and human ecology.

It is recommended that future studies, surveys and excavations should consider including some of these disciplines.

10.4. Military training activities and historic environment

The Military stewardship in terms of the Historic Environment is delivered through a strategic land management plan known as 'integrated rural management plan' (IRMP). The IRMP has three main outputs:

- a strategic framework to inform decision-making where changes to military and other requirements are planned
- a series of specific management plans (e.g. military use, historic environment) to identify current and proposed future management, that are integrated to ensure conflicts are resolved and synergies prioritize; and
- a prioritized action plan to improve current condition.

10.5. Management recommendations

- Ensure all archaeological plans and projects which could, either individually or in combination with other plans and projects, have a significant effect on a SAC, SPA or Ramsar will be subject to the Appropriate Assessment screening.
- Ensure that work on nature conservation takes into account any impact on antiquity sites.
- Promote antiquity sites and their integration with environmental features for ecotourism.
- Educate the general public with respect to archaeological matters by way of archaeological exhibits in the Akrotiri Environmental Education Centre, seminars, public lectures, and popular articles and publications.
- Facilitate the free exchange of archaeological research data among the various entities of the archaeological fraternity.

11. Landscape

11.1. Definition

The European Landscape Convention (ELC) defines landscape as: “An area as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. (Council of Europe 2000)

11.2. Legislation

11.2.1. SBAA Ordinances

11.2.1.1. The Environmental Impact Assessment Ordinance, 26/2010

Subject to the provisions of the Ordinance Environmental Impact Assessments must identify, describe and assess the environmental impact of the project on the natural, historic and anthropogenic landscape.

Infrastructure projects within landscapes which have been declared or characterised as protected under any legislation require at least a Preliminary Environmental Impact Assessment Report.

11.2.2. Conventions

11.2.2.1. The European Landscape Convention, 2000

The Convention has not been extended to the SBAs. As a result no formal landscape character assessment study has been carried out pertaining to the Akrotiri Peninsula.

The Convention is the first international convention to focus specifically on landscape. Created by the Council of Europe, the convention promotes landscape protection, management and planning, and European co-operation on landscape issues.

Signed by the RoC in November 2001, the convention became binding from October 2006. It applies to all landscapes, towns and villages, as well as the open countryside; coastal and inland areas; and ordinary or even degraded landscapes, as well as those that are afforded protection.

Cyprus has implemented the provisions of the convention through various planning policies and laws, such as the Town and Country Planning Law, the Environmental Impact Assessment Law, and the Strategic Environmental Assessment Law.

11.3. Landscape character map

The RoC has commissioned a Landscape consultant to produce a landscape character map for the whole island, including the SBAs.

At present, phase one has been completed. This phase included the amalgamation of individual landscape units into Landscape Types. The Landscape Types associated with Akrotiri Peninsula are:

- Salt Lake: Bare land in an undrained natural basin, periodically inundated with salt water;
- Coastal Dunes: Low hills of unconsolidated sand, associated with a strip of bare sand/pebbles, along the coast. This is an unsettled, 'wild' landscape with a covering of shrubs and other semi-natural vegetation, although patches of bare ground are a feature in places;
- Lowland Maquis: A rolling, largely unsettled, lowland landscape with a covering of shrubs and other semi-natural vegetation;
- Lowland citrus: A settled and cultivated, low lying landscape on the coastal plain, characterised by extensive groves of irrigated, intensely cultivated tree crops such as citrus, avocado, banana and pecan;
- Lowlands Cultivated: A settled and cultivated, lowland landscape, characterised by discrete rural villages, in places surrounded by a dense scatter of dwellings and other buildings. Although mostly low lying, with a gently rolling topography, this landscape also includes a scattering of prominent, small hills.

These Landscape Types can be further divided into the following Key Features and Attributes:

- Coastal and Halophytic Habitats;
 - Open sea and tidal areas
 - Sea cliffs and shingle or stony beaches
 - Salt marshes and salt meadows
- Coastal Sand Dunes and Inland Dunes;
 - Sea dunes of the Mediterranean coast
- Fresh Water Habitats;
- Maquis:
 - Juniperus formations;
 - Olea and Ceratonia forests.
- Phrygana:
 - Cisto-Micromeretea phrygana.
- Forest:
 - Mediterranean forests with endemic Mesogean pines;
 - Non-indigenous eucalyptus, pine and acacia plantations
- Agriculture;
 - Citrus plantations and cultivated land
 - Rotational Crops (Potatoes, Soft Fruits etc)
 - Grazing Areas
- Archaeological Sites
- Agricultural Areas
 - Citrus Plantations
 - Grazing Areas
- Akrotiri village:
 - Housing;
 - Restaurants;
- Built Heritage
 - Churches
- Limassol Port
- Beach Restaurants
- Tree Lined Field and Road Boundaries (Predominately Cupressus Spp.)

- Bishops Pool
- Abandoned Quarries
- Seasonal and Climatic Features
- Military Occupation:
 - Airfield
 - Technical Site (Hangers, Offices, Workshops, Fuel Depots etc)
 - Domestic Site (Service Families Accommodation, Single Living Accommodation)
 - Amenities (Shops, Sports Fields, Hospital, Health Care Facility,
 - Training Areas (Dry Training and Live Firing)
 - Encroachments (Go-cart track, Saddle Club, Beach Clubs)
 - Aerials and communication masts; including the Salt Lake Site and British

11.4. Landscape ecology

In terms of landscape ecology the features and attributes covered in 11.3. can be further divided into specific groups. This would improve our knowledge on the relationships between ecological processes in the environment and particular ecosystems.

11.5. Management recommendations

- Consider extending the European Landscape Convention to the SBAs. Adopting the provisions of the Convention would aid the decision-making process in terms of planning proposals.
- Commission a detailed Land Character Assessment for Akrotiri Peninsula once relevant methodologies have been fully developed in the RoC.
- Commission a detailed landscape ecology study of the site specifically looking at the composition, structure and function of landscapes.

12. Land ownership

12.1. MOD controlled sites

MOD controlled sites cover the following areas:

- RAF Station Akrotiri
- The Salt Lake aerial site
- The British Eastern Mediterranean Relay Station (BEMRS Station) at Lady's Mile

The sites are shown on map 98.

12.2. Akrotiri Merra land

Akrotiri Merra land covers part of the western side of the peninsula, as shown on map 98. It is communal grazing land, which under its current status, can only be used as communal grazing grounds.

12.3. Zakaki Merra land

Zakaki Merra land covers the north-eastern corner of the peninsula. It is communal grazing land, but if part of the of it ceases to be communal property as a result of a declaration under the Immovable Property (Tenure, Registration and Valuation) Ordinance compensation must be paid by the Administrator for the benefit of the inhabitants of Zakaki.

12.4. Forest land

Forest land - clear of any rights - covers the Eucalyptus plantations north of the Salt Lake, and minor forest south-west of the Salt Lake, surrounding Akrotiri Village. Forest land without rights is shown on map 98.

12.5. Forest land with rights

Forest land subject to Akrotirian rights covers areas around the Salt Lake and the Fassouri Marsh. It is shown on map 98. The rights were given to Akrotiri Community under a Court settlement of 1943.

12.6. Crown land

Crown land covers the following areas:

- the Salt Lake
- the Foreshore
- the Kourris riverbed.

The areas are shown on map 98.

12.7. Private land

Private land covers the following areas:

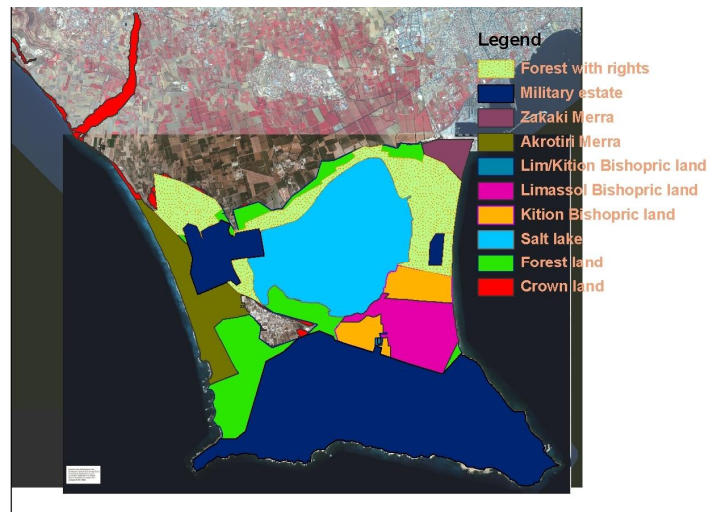
- The residential area of Akrotiri village and areas north of the peninsula. It consists of many small plots, owned by various individuals, mainly from Akrotiri village.
- Agricultural land north of the peninsula and at Fassouri Marsh.

- Agricultural land at Akrotiri village.
- Land consolidation which consists of Akrotiri Phase I (north of the Fassouri Marsh) and Akrotiri Phase II.

Private land is shown on map 98.

12.8. Church land

Church land consists of the estates of the Bishopric of Limassol and the Bishopric of Kition. It covers (area) and is located between Lady's Mile Beach, the Salt Lake and RAF as shown on map 98.



Map 98: Land ownership

13. Existing infrastructure

13.1. Pipe irrigation schemes

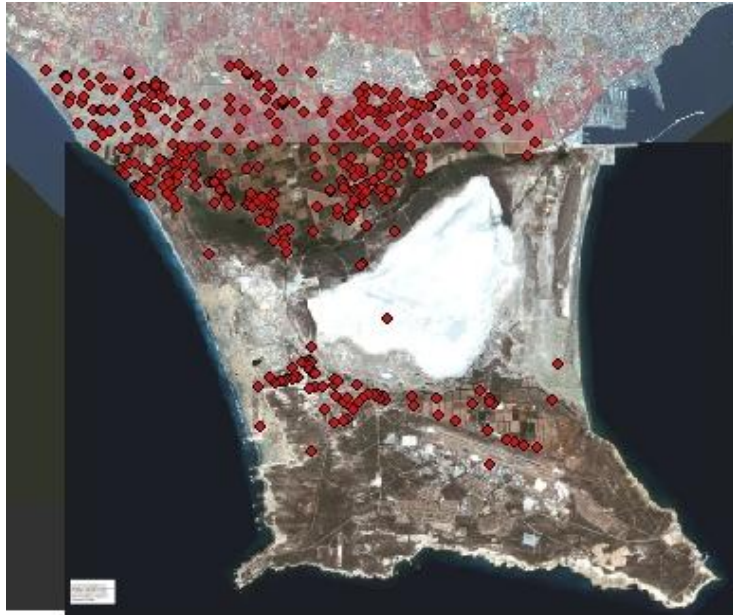
Irrigation for agricultural purposes includes two main projects: 'The Southern Conveyor Project' and the 'Polemidthia – Yermasoyia Project'. These projects use water from the Kourris Dam and the Polemidthia/Yermasoyia dams respectively. These irrigation schemes cover the agricultural land north of the peninsula, Akrotiri Village and Bishop's Farm. Map 99 of the Water Development Department shows the scheme but does not include the irrigated area at Akrotiri Village.



Map 99: Irrigation

13.2. Wells/boreholes

There are many boreholes in the area, mainly within the agricultural land north of the peninsula, as shown on map 100.



Map 100: Wells/boreholes

A big number of the well/boreholes shown on the map are illegal or disused.

13.3. Reservoirs

There are two water reservoirs in the site: The Fassouri Reservoir and the Bishop's Reservoir shown on map 101. The Fassouri Reservoir has a capacity of 500,000 cubic metres and the Bishop's Reservoir about 150,000 cubic metres. The reservoir within the Bishop's Farm collects water from the runoff from RAF Station, but is also supplied with water from the Yermasoyia – Polemidhia Irrigation Project.

Water is pumped from the reservoir to the plantations within the farm. There is a second reservoir within the Bishop's Farm, constructed a few years ago (in combination with heavy quarrying), but this has not yet been used as such. The size of this is about 200,000 cubic metres.

The Fassouri Reservoir receives water from the Southern Conveyor Project for aquifer recharging purposes.



Map101: Reservoirs

13.4. Road network

The road network is shown on map 102.



Map 102: Roads

13.5. Asphalt roads

The main road in the peninsula is the Kolossi – Akrotiri road. Other asphalt roads include the Asomatos – Zakaki road, M1, Trakhoni – Limassol road and the narrow Fassouri Marsh road. There are also a number of asphalt roads within RAF Station Akrotiri, where access is controlled. Ayios Georghios track, Fassouri Marsh track and part of the track road leading to the Bishop's Farm have been asphalted.

13.6. Earth tracks

There are a number of earth tracks as shown on map 103.



Map 103: Tracks

13.7. Footpaths and other access routes

There are no formally designated or clearly indicated footpaths. Instead, there are many seasonal, haphazard paths and other routes providing access to various areas as shown on map 104.



Map 104: Access routes

13.8. Sewerage

There is a tertiary sewerage system within RAF Station Akrotiri. Akrotiri Village is not covered by a sewerage system and relies on individual septic tanks and cesspools. The same applies to the restaurants at Lady's Mile. The RoC is currently considering the establishment of a common sewerage system for the villages of Ypsonas, Kolossi, Trakhoni, Erimi and Episkopi. Consideration may be given to include Akrotiri Village as well.

Also, the intention is for proper waste treatment plants to be established at the restaurants at Lady's Mile.

13.9. Rubbish disposal

There is a collection service at Akrotiri village for domestic rubbish twice a week and disposal to the Limassol Municipality Rubbish Tip. There is currently no licensed area for disposing of non-domestic rubbish such as rubble, furniture, prunings.

The RoC is in the process of establishing Green Spots where non-domestic waste will be collected and disposed of. It is expected that the Green spots will be in place in 2013. Currently it is planned that a Green Spot will be constructed at Colossi. There is a proposal for the construction of a Green Spot within the Eucalyptus Plantation.

Rubbish at Lady's Mile Beach is collected daily during the summer period and once a week during the rest of the year by a BFC Contractor in plastic bags. Rubbish is disposed of properly at the rubbish tip of the Limassol Municipality.

Rubbish from the turtle nesting beaches is collected by Turtlewatch volunteers and disposed of by the Akrotiri Community Council. Fly-tipped waste at environmentally sensitive areas such as the Eucalyptus Plantation, Phassouri Marsh and around the Salt Lake is cleaned once a year.

13.10. Disposal of dead animals

Akrotiri Community Council undertakes the burial of dead animals washing up on beaches within the Peninsula and other animals found within the community.

13.11. Ports

The main Limassol Port is located at the north-east of the peninsula. There is also a fishing shelter at the western coast of the peninsula, which has been recently upgraded. There is a military port on the eastern coast, within RAF Station Akrotiri. In addition, there is the military airport of RAF Station Akrotiri. They are shown on map 105.



Map 105: Ports

13.12. Fuel supply

There is only one commercial petrol station in the area, the BP Station within RAF Station Akrotiri. There is also service fuel supply within RAF Station Akrotiri and a fuel receiving facility for supply of the Station from ships.

14. Impact of existing land uses and activities on the important features and current management arrangements and controls

A variety of activities are taking place within Akrotiri Peninsula, which impact on its important features. This impact can be positive or negative, direct or indirect, temporary, short-term or long-term, natural or anthropogenic and can have different degrees of significance.

This section focuses on the impact of existing activities on the important features along with the existing management arrangements and controls with a view to propose appropriate management actions. The list of activities is not exhaustive and will be supplemented during the evolution of the management plan.

14.1. Unregulated access

One of the most important sources of impact is the unregulated access of cars and people to all areas of the peninsula on or off the numerous dirt tracks. In addition to the direct impact of this activity to important features, uncontrolled access causes disturbance and is associated with other impact activities.

The main areas of concern are shown on map 104.

14.1.1. Impact on important habitats

Unregulated access affects a variety of habitats including priority ones, in particular lagoons, pseudosteppes and juniperus coastal dunes. This creates direct damage to the ecosystem, such as habitat loss, degradation and fragmentation. Indirect impact on the ecosystem includes changes in hydrology, compacting of soil, propagation of invasive species and pollution.

14.1.2. Impact on important plants

Taraxacum aphrogenes, *Achillea maritima*, *Convolvulus lineatus*, *Coronilla repanda subsp. repanda*, *Crypsis factorovskyi*, *Ipomoea imperati*, *Juncus littoralis*, *Juncus maritimus*, *Lotus cytisoides*, *Ophrys kotschyi*, *Cistanche phelypaea*, *Pancreatium maritimum* and *Vulpia brevis*, are all threatened directly and indirectly by unregulated access in the area, especially by car, due to the sensitivity described in 8.2.

14.1.3. Impact on important birds

Akrotiri Merra, which covers most of the eastern site of the peninsula is a very important site for migrating and staging birds as well as for breeding of the important Kentish Plovers.

During migration seasons, a lot of birds will use the area to rest for a few hours or roost before flying south, or even for staging for a few days if refueling is necessary (e.g. Golden Plovers, Glossy Ibises, Curlews).

Avoidance of disturbance is very crucial for the survival of some bird species. Flying is a major natural element of their lives but because birds use a lot of energy, if they need to fly more as a result of disturbance, could affect their survival (Davidson and Rothwell 1993), especially at areas such as Akrotiri, where their next migrating route is over water expanse.

Migratory waders are dependent on the availability of suitable wetlands for successful completion of their annual movements between breeding and non-breeding areas (Wilson and Barter 1998).

The waders most likely to be affected by habitat loss are those which fly long distances between staging sites. Such species typically collect in large numbers at a few sites (Cramp and Simmons 1993), the loss of which may seriously affect their ability to migrate successfully and, therefore, to breed and maintain a viable population.

Furthermore, the area is used by Kentish Plovers for breeding during the spring and early summer months. Kentish Plovers will nest on the ground in loose conspecific aggregations, depending on good camouflage to avoid detection. Since the nests are so well camouflaged, accidental run over by cars due to unregulated and uncontrolled access is one of the main reasons for nesting failure. Furthermore, Kentish Plover chicks rely on their camouflage to avoid predators, thus they tend to freeze and stay still when predators or other dangers are approaching. This exacerbates the running over by cars.

Unregulated access is also affecting the salt meadows surrounding the Salt Lake, the area between the Salt Lake and the Lady's Mile coast and even the main Salt Lake when it is dry during the summer months.

Disturbing wildlife in these areas is also crucial, especially during certain seasons when some bird species are visiting the area and are very susceptible to disturbance like the Greater Flamingos and the Demoiselle Cranes. In addition, the Salt Lake and its surrounding salt meadows constitute important breeding habitat for Kentish Plovers, which face the same threats from uncontrolled access as at Akrotiri Merra.

14.1.4. Impact on important reptiles

Acanthodactylus schreiberi, is directly affected by unregulated access of any type of vehicle. Like all reptiles, these lizards are taking advantage of the warmth of open areas like roads, to bask and raise their body temperature. As a consequence, direct kills by run over is very common. Furthermore, the wide road network is reducing, fragmenting and damaging the natural habitat of the species, threatening its survival and its role in the local ecosystem.

14.1.5. Impact on important mammals

This is minimal, as there are no important terrestrial mammals.

14.1.6. Impact on important amphibians

Even though the Mediterranean tree-frogs (*Hyla savignyi*) are not seriously threatened by direct run-over mortality, habitat degradation, fragmentation and damage affects the species to a certain degree in particular areas.

Possible direct impact could occur at Fassouri Marsh where past observations included massive local migration between the fruit farms and Fassouri Marsh over the marsh road.

14.1.7. Impact on important invertebrates

This is assessed to be minimal.

14.1.8. Impact on important fish

This is assessed to be minimal.

14.1.9. Management Arrangements and Controls

SBA Police, Environmental Wardens and Area Office Field Assistants patrol the area and warn or report people who are driving on sensitive habitats. Offenders can be prosecuted under the Protection and Management of Nature and Wildlife Ordinance and the Game and Wild Birds Ordinance but only if deliberate damage to a protected flora or fauna species can be proved. Prosecution is therefore very difficult. Management Orders must be made under the two Ordinances prohibiting the activity at designated areas.

Furthermore due to the existence of numerous access points in the whole of the peninsula it is currently impossible to control the problem. Certain access points will need to be closed to ensure protection of important habitat and to make policing more feasible.

14.2. Off road racing

Because of the topography and physiology of the area (sand dunes, sand flats, muddy areas), off road driving with motocross motorcycles and 4x4 cars is a common phenomenon, both between the Salt Lake and the Lady's Mile coasts as well as along the Merra coast. For this reason, several race tracks have been created in these areas, adding more pressure on the wildlife. The main areas of concern are shown on map 106.



Map 106: Off road racing

14.2.1. Impact on important habitats

Racing takes place in five sites at the east and west parts of the peninsula, seriously affecting directly and indirectly habitat types 2260, 5420, 1420, 1210, 2110, 2250 and 2120. The habitats in most parts of the racing tracks have degraded substantially and need recovering.

14.2.2. Impact on important plants

Achillea maritima, *Coronilla repanda* subsp. *repanda*, *Crypsis factorovskyi*, *Ipomoea imperati*, *Juncus maritimus*, *Lotus cytisoides* and *Ophrys kotschyi* are all threatened directly and indirectly by unregulated access in the area, especially by car, due to the sensitivity described in 8.2.

14.2.3. Impact on important birds

Off road racing has the same type of impact on bird populations, as uncontrolled access. However, the size of the damage in this case is much bigger, because of the intensity and scale of racing activities. Besides the direct damage to bird habitats and nests, nesting birds such as Kentish Plovers will fly away from their nests when disturbed and will not return before silence is restored.

This time will be in most cases enough for the eggs to get cold and hatching to fail, or chicks not to get enough food supply, minimizing their survival chances. Disturbance by vehicle off road activities in open areas like the Salt Lake and the Merra, are higher than other wooded areas because the birds are directly and visually affected by these activities. Prolonged, intense disturbance at these sites might result in abandonment of wintering sites by some waders (Lafferty 2001).

14.2.4. Impact on important reptiles

Same as section 14.1.4.

14.2.5. Impact on important mammals

Same as section 14.1.5.

14.2.6. Impact on important amphibians

Same as section 14.1.6.

14.2.7. Impact on important invertebrates

Same as section 14.1.7

14.2.8. Impact on important fish

Same as section 11.1.8

14.2.9. Management arrangements and controls

Organised off road racing may only be permitted under certain conditions through a procession licence issued by the Area Office.

Individual off road racing on sensitive habitat is reported by SBA Police, Environmental Wardens and Area Office Field Assistants but due to the existence of numerous race tracks it is very difficult to control.

Offenders can be prosecuted under the Protection and Management of Nature and Wildlife Ordinance and the Game and Wild Birds Ordinance but as indicated in 14.1.9. deliberate damage must be proved. Management Orders must be made to prohibit this activity in sensitive areas.

14.3. Harvesting of natural resources (excluding hunting which is dealt with separately)

Harvesting natural resources like asparagus, mushrooms, snails and firewood, are common seasonal activities, involving many people in some occasions. Residents of the surrounding communities and not only, engage in these activities depending on the season and availability of resources.

14.3.1. Impact on important habitats

There is no significant impact, except impact relating to uncontrolled access by car.

In addition, consideration should be given to promoting cutting down invasive acacia bushes for firewood, under wider acacia management schemes.

Furthermore, *Pinus halepensis*, which provides firewood, is an introduced species in Cyprus and further assessment is required to establish its status and the necessary management, including the possibility to promote re-establishment of juniper.

14.3.2. Impact on important plants

The plants used for soft basketry include the important *Cladium mariscus*, *Juncus littoralis* and *Juncus maritimus*. These activities could be positive or negative to these species depending on the scale, methods used, seasons etc.

Further monitoring and assessment is required in this case. Basketry together with grazing are also believed to be related to deliberate fires in certain areas such as Fassouri Marsh. Fire can have positive and negative elements as discussed in 14.24.

14.3.3. Impact on important birds

Firewood collection takes place mostly during the autumn and winter months. The eucalyptus forest north of the Salt Lake and the pine stands south of Akrotiri village are the more popular areas for this activity, which requires a permit from the RoC Department of Forests and the SBA authorities.

The important species using the eucalyptus forest are mostly raptorial birds that mainly use the eucalyptus forest for roosting. Since these birds are only passage migrants and use the area only during September – October, management of this activity during this period will minimize disturbance to these birds. During years with high precipitation, Black-winged Stilts are nesting around the salt meadows at the northern part of the Salt Lake which is adjacent to the eucalyptus forest. Management of firewood cutting during the nesting period in April may be required, since the loud noise of chainsaws could be very disturbing for the nesting birds, probably causing them to abandon the site.

The pine stands near the village do not have significant importance for the avian fauna of the area, even though Cyprus warblers do occupy the site. The native Cyprus warbler that lives around the pine stands is a shrub land bird and occupies large area in the peninsula including the juniperus forest. Removing the introduced pine and re-introducing junipers, would benefit the Cyprus warblers.

Mushroom collection is not a regular activity, due to the very specific weather conditions under which mushrooms grow. This activity does not cause concern to the avifauna at Akrotiri.

Wild asparagus picking is very popular in the area, and contrary to mushroom harvesting can generate several issues for the birds of the area. Akrotiri Peninsula is considered to be one of the best areas in Cyprus for this activity due to the abundance of asparagus. Asparagus grow in many areas and different habitats and the activity takes a small commercial character in some cases. The fresh sprouts collected by people grow from mid winter (January) to the end of spring, which coincides with the sensitive breeding season of birds. Black-wing Stilts and mainly Kentish Plovers are the breeding birds mostly affected by the disturbance of asparagus collection. The collection takes place at any time of the day and increases considerably during afternoons and weekends.

Besides disturbance from human presence, cryptic Kentish Plover nests are subject to accidental trampling with devastating consequences. Furthermore, repeated visits at certain sites can force the birds to abandon the area. People engaging in this activity often take their dogs with them, which increases significantly the disturbance pressure on the breeding birds.

Snail collection takes place in many areas, but mostly in the salt meadows and phrygana around the Salt Lake, the flat cereal plantations north of Fassouri Marsh, Kouris riverbed and the plantations (citrus, vineyards etc). This activity does not cause concern to bird interest in some areas, but in others it can be catastrophic especially when it happens at night to take advantage of the activeness of snails.

The impact is significant during the bird breeding and migrating season. Disturbing a nesting bird at night or a migrating bird that is roosting can have big consequences. Causing a bird to fly away from its nest during the night can cause nesting failure because the bird will not be able to return to its nest before sunrise. As a result the eggs or the chicks will get cold and die. Accidentally trampling of the nest is also an impact from this activity.

Furthermore, spooking a roosting migrating bird will prevent it from getting the required amount of rest needed to complete its journey. In general, this activity requires further monitoring and assessment for appropriate management.

Collection of vegetation for basketry is today of very small scale, as opposed to the past, and does not seem to be of concern to the bird interest.

14.3.4. Impact on important reptiles

Some of these natural resource harvesting activities can cause some disturbance to *Acanthodactylus schreiberi*, but it is not estimated to be causing a major threat to the species.

14.3.5. Impact on important mammals

Some bat species could be affected by the removal/cutting of old trees which may be used for roosting, but further information is required to make an assessment.

14.3.6. Impact on important amphibians

No significant impact is expected.

14.3.7. Impact on important invertebrates

Same as 14.1.7. In addition, particular quantities of dead wood should be retained in the ecosystem as it is very important to the general invertebrate and other ecosystem interest.

14.3.8. Impact on important fish

Same as 14.1.8.

14.3.9. Management arrangements and controls

Felling of trees for firewood is controlled through the issue of licences by the RoC Department of Forests and the SBA Administration. Other activities (asparagus, mushroom and snail collection) are monitored by the Environmental Wardens to ensure that they do not become unsustainable, but further assessment and regulation is required for sensitive areas.

14.4. Flying air models

The sandflat area southeast of the Salt Lake, shown on map 107, is used by aircraft modeling hobbyists.



Map 107: Air modeling

14.4.1. Impact on important habitats

There is no significant impact on habitats.

14.4.2. Impact on important plants

There is no significant impact on important plants.

14.4.3. Impact on important birds

Any kind of flying object has an impact on bird behaviour. Planes, helicopters and aircraft models are causing disturbance to birds. Almost all species of birds have to live with the threat of dangerous predators swooping on them out of the sky.

The fastest possible escape flight as soon as a predator appears is the only sensible reaction in many cases. Airplanes can also prompt birds to take flight, even though aircraft do not appear as predators. In experiments on birds with different dummies, it was found that escape flight reactions are the natural response to all flying objects.

From the birds' point of view, aircraft over flights can be an important source of disturbance. Such disturbances are especially problematic in nature protection areas where bird concentrations are significantly larger. Major disturbance is likely to lead to impacts on the health, breeding performance and survival of individual birds, and perhaps bird colonies.

Negative effects to birds by over flying aircrafts are loss of suitable habitat, increased energy consumption, lower food intake and resting time and in consequence an impaired body condition.

The specific area is used by different species of birds for different purposes throughout the year. Migrating birds (especially birds of prey) will fly over the sandflats to take advantage of the rising thermal currents to gain altitude before flying off. Therefore, the ability to use the specific site can be characterized as crucial for these birds.

Furthermore, in years with high precipitation the level of water within the main body of the Salt Lake can be too high for some wading species, which then start using the sandflats which become the only available open space area around the Salt Lake.

Kentish Plovers, Little Stints and Dunlins can be observed in large numbers in this area when the conditions are appropriate, including minimized disturbance. In addition, the area near the model aircraft flying site is one of the most important areas for breeding Kentish Plovers.

The salt meadows adjacent to open flat areas are the perfect breeding habitat for this species, where disturbance can be very detrimental to the long term usage of this area for breeding purposes. Monitoring this activity and setting up seasonal time frames where bird disturbance created by the aircraft is minimized, is very important for the avian diversity of the area.

14.4.4. Impact on important reptiles

There is no significant impact on reptiles.

14.4.5. Impact on important mammals

There is no significant impact on mammals.

14.4.6. Impact on important amphibians

There is no significant impact on amphibians.

14.4.7. Impact on important invertebrates

There is no significant impact on invertebrates.

14.4.8. Impact on important fish

There is no significant impact on fish.

14.4.9. Management arrangements and controls

The activity requires a Model Control Licence under the Wireless Telegraphy Ordinance. Nevertheless the legislation in question is out of date and the relevant Republican legislation which contains modern standards needs to be mirrored.

The activity has become popular over the last few years and requires more regulation. As a result the SBA Administration has contacted the Limassol Aero Club in an effort to raise awareness on the sensitivity of the area and to explain the requirements which need to be fulfilled for the activity to be sustainable. However, further assessment and regulation is required as the activity does have impacts on birds.

14.5. Dog walking and training

Akrotiri Peninsula is a site free from development, close to Limassol, with areas of wilderness readily accessible to people who walk their dogs. Off-leash activities and free running of dogs is commonly observed. Additionally, most of the peninsula is a game reserve.

As a result, the European Hare population which is the main game species in Cyprus is much higher than other areas of the island and Akrotiri is considered as one of the best areas for training hunting dogs.

Dog walking is worldwide among the most popular recreational activities, attracting millions of people to natural areas each year with diverse benefits to human and canine health. However, dogs, or their closest ancestors, have evolved as top predators in many ecosystems and hunt a wide range of wildlife. As a result, wildlife sees dogs as potential predators and abandons their natural habitats (Banks and Bryant 2007).

The main areas of concern are shown on map 108.



Map 108: Dog walking and training

14.5.1. Impact on important habitats

No significant impact on habitats besides factors relating to access.

14.5.2. Impact on important plants

No significant impact on habitats besides factors relating to access.

14.5.3. Impact on important birds

Dogs allowed to roam freely, especially during the breeding season, can cause ground-nesting and other birds to leave nest, resulting in loss of clutches and broods. Ground-nesting species are also particularly vulnerable to dog-attacks. Even dogs wandering in and out of verges can cause significant disturbance and loss.

The sensitivity of shore-birds to dogs is illustrated by the observation that Kentish Plovers react at twice the distance to dogs that they do to pedestrians. Although dogs do not remove habitat or kill birds directly, disturbance cause birds to suspend feeding and/or expend energy in

flight, movement or vigilance (Lafferty 2001). Birds that forage slowly or ineffectively may not build the requisite fat reserves that are especially important to stressed and depleted migrants who must rest and feed to successfully resume their migratory journey.

Dog walking is taking place pretty much everywhere in the peninsula except the main body of the Salt Lake which is flooded by water in the winter and mostly very muddy in other seasons. This causes significant impact on the important bird interest of the area, including the migrating staging birds as well as breeding species, especially the Kentish Plover, of which Akrotiri is the most important breeding site in Cyprus. Long term studies suggest that these birds could abandon their breeding grounds in the disturbed sites and experience significant local population declines.

Appropriate management of this issue should be one of the priority actions in the area.

14.5.4. Impact on important reptiles

It is common for dogs to chase reptiles, especially fleeing lizards, but more information is required in order to form an assessment of the possible impact on *Acanthodactylus schreiberi*.

14.5.5. Impact on important mammals

Only non-important mammals are impacted by this activity like hares and foxes.

14.5.6. Impact on important amphibians

There is no significant impact on important amphibians.

14.5.7. Impact on important invertebrates

There is no significant impact on important invertebrates.

14.5.8. Impact on important fish

There is no significant impact on important fish.

14.5.9. Management arrangements and controls

Dog bathing is prohibited under the Foreshore Protection Ordinance. More and more people are bathing their dogs at beaches within the Peninsula and when approached by the SBA Police they request that an area on the foreshore is designated for dog walking and dog bathing. The issue will be addressed by designating a dog bathing area at the eastern side of Curium Beach.

Training of hunting dogs is prohibited under the Dogs Ordinance and there is a fixed penalty for the offence. Training can only take place in areas designated under the Ordinance but there is no intention to designate any areas within the peninsula. More policing effort must be put into dealing with the problem as more and more people are training dogs at sensitive areas and dogs are destroying bird nesting sites.

Roaming of dogs in game reserves and public places off their leashes is prohibited under the Dogs Ordinance and there is a fixed penalty for the offence. This type of activity is very similar to the training of hunting dogs and most times it is not easy to distinguish between the two. More policing effort is required to enforce the prohibition on walking dogs off their leashes. Furthermore, walking dogs in general (including on their leashes) should be prohibited in sensitive areas, particularly important bird nesting sites.

14.6. Stray cats and dogs

Stray dogs and cats have been observed roaming around the peninsula, especially in the area between the Salt Lake and Lady's Mile coast, shown on map 109 and even if they are not in big numbers they can have a significant impact on wildlife.



Map 109: Stray cats and dogs

14.6.1. Impact on important habitats

There is no significant impact on important habitats.

14.6.2. Impact on important plants

There is no significant impact on important plants.

14.6.3. Impact on important birds

Stray dogs and cats are causing the same types of disturbance to birds as walked dogs. Furthermore, since stray dogs and cats struggling for survival, might adapt to hunt some species and target their nests and chicks with catastrophic consequences especially for colonial nesting birds like the Black-winged Stilt. Stray dogs can be constantly present, including before dark, which can totally eliminate nesting success for some species.

Birds pushed away from their nests before nighttime cannot navigate back to the nest until next morning. This results in chicks dying from exposure to cold conditions and egg hatching failure. Furthermore, cats can be very successful bird hunters. Cats are estimated to kill 27 million birds every year in Britain, so they can have a significant influence on regional populations of certain species that are easier to catch.

Therefore, stray dogs and cats should be removed as soon as they are detected, to protect both the wildlife and the stray animals. Furthermore, stray dogs in Cyprus are known to carry diseases like Leishmania and Erlichia Canis, which can spread to house dogs of the nearby communities.

14.6.4. Impact on important reptiles

Feral cats can have a huge impact on terrestrial reptile populations. Cats can be characterized as the ultimate killer of small reptiles and their presence in the area will definitely have an impact on *Acanthodactylus schreiberi*.

14.6.5. Impact on important mammals

No significant impact on important mammals.

14.6.6. Impact on important amphibians

No significant impact on important amphibians.

14.6.7. Impact on important invertebrates

No significant impact on important invertebrates.

14.6.8. Impact on important fish

No significant impact on important fish.

14.6.9. Management arrangements and controls

The competent authority for dealing with stray dogs under the Dogs Ordinance is the Community Council.

The Community Council must keep stray dogs at premises approved by the Chief Officer for at least 96 hours and if the owner is not found the dog may be given to someone else or put to death by a veterinarian. This provision is currently not enforced very well and the community council does not maintain premises for stray dogs. Until recently the SBA Police was dealing with the problem of stray dogs but since the beginning of 2010 the responsibility was passed on to the community council in accordance with the Ordinance.

The SBA Administration must agree with the Akrotiri Community Council on the premises and the Community Council must fulfill its obligations under the Ordinance as the issue of stray dogs is becoming more and more prevalent within the entire peninsula. The competent authority for dealing with stray cats under the Welfare of Animals Ordinance is the Chief Officer. He has the power to reduce the number of stray cats if they entail a serious risk to public health and safety.

14.7. Parking of trailers

Trailers that use the nearby Limassol Port have started using the area close to Zakaki Marsh at the northern edge of Lady's Mile a few years ago and they have been steadily spreading southwards with catastrophic consequences to the local ecosystem. They also pose a serious safety threat to cars and pedestrians in the area including bird watchers and sea bathers. The main areas of concern are shown on map110.



Map 110: Illegal trailer parking

14.7.1. Impact on important habitats

Trailer operators have been destroying protected habitat to create parking areas. They have also been creating new access tracks over protected habitat. Habitat loss, damage and fragmentation have mainly been affecting habitat types 1150, 5420 and 1420.

14.7.2. Impact on important plants

No important plants have been affected so far.

14.7.3. Impact on important birds

In addition to their impact on significant bird habitat, trailers create loud noises which are another source of disturbance for the avian species of the area.

Disturbance by traffic has recently been shown to have a significant impact on important breeding bird populations of many species in different habitat types. The area encroached on by trailers is one of the most important bird sites of the peninsula. Zakaki wetland hosts a variety of birds all year round.

It is considered to be the most important breeding area in Cyprus of the Ferruginous Duck, which is the most threatened breeding species of the area. During years of reduced precipitation this site is the only breeding site of this species.

Furthermore, next to the trailer parking encroachments by Lady's Mile, there are saline winter pools used by a wide range of bird species for foraging and resting. Large numbers of gull species are using these pools for resting especially during the winter months when the sea is rough. Furthermore, these pools sometimes hold small amounts of water during the summer months and they become the most important food source of Kentish plovers, Little Stints and Dunlins, which depend largely on these saline pools. The trailer disturbance combines with that of normal traffic on Lady's Mile track.

14.7.4. Impact on important reptiles

The trailer parking activities result in habitat loss, damage and fragmentation, disturbance and possibly direct kills of *Acanthodactylus schreiberi*.

14.7.5. Impact on important mammals

There is no significant impact on important mammals.

14.7.6. Impact on important amphibians

Trailer parking causes habitat loss, damage and fragmentation for *Hyla savignyi*. Also, it poses pollution risks to their wetland habitat.

14.7.7. Impact on important invertebrates

Pollution forms the main risk to *Brachinella spinosa*.

14.7.8. Impact on important fish

Trailer parking has been causing direct impact on *Aphanius fasciatus* by reducing its freshwater habitat at Zakaki and creates pollution risks to the water.

14.7.9. Management arrangements and controls

This has become a very serious problem which is spreading rapidly to new areas. The SBA Administration and SBA Police have been discussing the issue with the Zakaki Community Council and the Municipality of Limassol (the problem extends to the Republic as well) but without substantial success as no alternative suitable area has been agreed.

Furthermore it is very difficult to prosecute the offenders as deliberate damage to protected habitat must be proved. A management Order must be made under the Protection and Management of Nature and Wildlife Ordinance to prohibit the activity. Additionally an alternative parking area must be identified as a matter of priority; a permanent solution is required for this problem rather than a continuous chasing up of the offenders.

14.8. Restaurants at Lady's Mile: Car parking, operation hours, events

Summer recreational activities at Lady's Mile beach have been becoming more and more popular. In addition the restaurants at the beach have been extending their capacity and services offered, attracting more people to the beach in general, but also concentrating the visitor interest near the restaurants rather than spread along the coast.

As part of their increased capacity the restaurant owners have been illegally extending their parking areas against protected habitat and other important interest. Some restaurants have also illegally extended their working hours/periods and have changed their use as a beach restaurant to night clubs. Some also organize illegal events which attract big numbers of people.

The parking areas at Lady's Mile are maintained every year before the summer period and are designed to accommodate ample parking and stop people from driving and parking on sand dunes and other protected habitat on the foreshore. However, in many occasions, people do not comply with these arrangements and encroach on protected habitat to get nearer to the sea.

The main parking areas, both legal and illegal are shown on map 111.



Map 111: Parking areas at Lady's Mile

14.8.1. Impact on important habitats

The parking extensions and illegal parking are directly impacting on habitat types 1210, 5420, 2120, 1110, 1420 and 1150. The impact includes habitat loss, damage and fragmentation.

14.8.2. Impact on important plants

The important plants suffering significant impact from these activities are *Lotus cytisoides*, *Pancratium maritimum* and *Cistanche phelypaea*. Besides direct mechanical impact, the local populations of these species are subject to damaging changes of the parameters as outlined in 8.2.

14.8.3. Impact on important birds

The saline pools east of the Lady's Mile track hold water much earlier than the Salt Lake and are used by many wading birds during the autumn and early winter months. Important numbers of migrating waterbirds will use this site for staging, which plays an important role to their successful migration. The habitat shrinkage and fragmentation caused by the parking extensions could be critical for the survival of some species.

14.8.4. Impact on important reptiles

The extended parking and illegal parking activities cause habitat loss, damage and fragmentation and probably direct kills of *Acanthodactylus schreiberi*.

14.8.5. Impact on important mammals

There is no significant impact on important mammals.

14.8.6. Impact on important amphibians

There is no significant impact on important amphibians.

14.8.7. Impact on important invertebrates

There does not appear to be an impact on *Brachinella spinosa*, but further consideration should be given to possible alteration of the hydrological conditions and increased pollution risks from parking extensions west of Lady's Mile track.

14.8.8. Impact on important fish

There is no significant impact on important fish.

14.8.9. Management arrangements and controls

The restaurants at Lady's Mile are currently operating under hut licences and a business licence.

In an effort to regularize the restaurants and implement proper construction, hygiene, health and safety and environmental standards the SBA Administration has decided to issue conditioned building permits to all existing restaurants. The restaurants must contain their

premises and parking to the area prescribed by the building permit. This regularization will result in a more effective control. Furthermore, prosecution of any offences will be simplified as charges can be brought against the offenders under the Streets and Buildings Ordinance.

It is currently very difficult for the SBA Police to enforce parking restrictions. Parking has extended to several areas on the foreshore and the number of cars illegally parked is steadily increasing. The new Foreshore Ordinance will prohibit parking on crown and communal land and parking on private land will not be permitted on sensitive habitat. The designated parking areas must be marked and signposted in order to achieve effective policing. The illegal extension of parking areas by restaurant owners should be dealt with under their respective licences and the management orders under the Protection and Management of Nature and Wildlife Ordinance.

14.9. Rubbish fly-tipping

Akrotiri Peninsula, especially the areas shown in map 112, has been suffering from illegal disposal of domestic and other waste. Several, costly cleaning operations have been carried out in the past, but this has not discouraged dumping.

The main concerns with this activity are pollution of the wetlands, habitat loss and damage, access to sensitive areas with heavy vehicles during the dumping and the cleaning activity, introduction and propagation of alien invasive species and attraction of predatory foxes and crows.



Map112: Fly-tipping

14.9.1. Impact on important habitats

Dumping of rubbish creates direct loss or damage to habitat types 1150, 1420, 5420, 5212, 1410, 6220, CY02, 92DO

14.9.2. Impact on important plants

The important plants affected by this activity are *Convolvulus lineatus*, *Coronilla repanda* subsp. *repanda*, *Crypsis factorovskyi*, *Linum maritimum*, *Ophrys kotschyi* and *Serapias aphroditae*.

14.9.3. Impact on important birds

Besides loss or damage to bird habitats and disturbance related to uncontrolled access, rubbish dumping attracts predatory/scavenging foxes and hooded crows. These are opportunistic hunters taking advantage of every available food source they find and their attraction increases the predation pressure on wildlife.

14.9.4. Impact on important reptiles

The impact on *Acanthodactylus schreiberi* includes habitat loss and damage, run over mortality and attraction of predators such as foxes and crows.

14.9.5. Impact on important mammals

There is no perceived direct significant impact on important mammals, but pollution affects the whole ecosystem including mammals.

14.9.6. Impact on important amphibians

The main impact on *Hyla savignyi* is pollution. Most amphibians, which are characterized as key indicator species for ecosystem health are very sensitive to wetland pollution.

14.9.7. Impact on important invertebrates

Similar issues apply as in 14.9.6.

14.9.8. Impact on important fish

Similar issues apply as in 14.9.6.

14.9.9. Management arrangements and controls

There is an SBAA Rubbish Management Plan in place which provides for the regular cleaning of fly-tipped waste at the sensitive areas (mainly at the Eucalyptus Plantation and Akrotiri Merra).

The sensitive areas are patrolled by the SBA Police, a dedicated Area Office Field Assistant and the Environmental Wardens. The increased patrolling of the sensitive areas has led to a decrease in the amounts of fly-tipped waste but the problem is still present.

The Management Plan makes provision for the blocking of certain access points in order to facilitate policing. The longer term plan for dealing with the problem of fly-tipped waste is the establishment of green spots where non domestic waste can be collected and recycled. The project is undertaken by the RoC Ministry of the Interior and it is expected that the green spots will be installed in the next two years.

14.10. Poaching

Poaching activities in the peninsula include mistnetting, night hare-hunting, hunting out of season and/or in game reserves, shooting protected birds and use of playback calls.

Poaching takes place mainly within the areas shown on map 113.



Map113: Poaching

14.10.1. Impact on important habitats

Poaching creates risks for lead pollution of wetlands and pollution from the discarding of spent shells. It also causes habitat damage relating to uncontrolled access, especially by car.

14.10.2. Impact on important plants

There is no significant impact on important plants, besides impact related to uncontrolled access, especially by car.

14.10.3. Impact on important birds

Poaching activity varies in intensity, methods as well as areas and species targeted, according to the season. Different methods are used for different species, with some being very difficult to identify and prevent. Use of mistnets for catching warblers and thrushes, night hare-hunting with the use of spotlights, out of season hunting, shooting of protected species, hunting within game reserve areas and use of playback calls are the most common poaching practices.

Mistnetting in the autumn for warblers (especially blackcaps) and thrushes, is a common illegal practice in Cyprus that proliferated in recent years. This has become a multi-million dollar industry, especially in the eastern parts of the island. At Akrotiri it occurs at a lower scale within parts of citrus plantations, especially in the Bishop's farm.

This indiscriminate trapping method damages a wide range of avian species. The trapping effectiveness is often enhanced with playback calls which attract birds in the vicinity of the nets. Mistnets set within the thick citrus plantations can be very difficult to detect and the issue may be having much bigger dimensions than what it appears to be.

Trapping birds with limesticks also occurs, but this practice is not as common as it used to be in the past, and not as efficient and detrimental as trapping with mistnets.

Hare hunting attracts many poachers at Akrotiri, where hare populations are high due to the game reserve status of most parts. European Hares are the main game species in Cyprus and the financial gain involved is a poaching incentive; hares cost close to 100 euros each, up to 130 for live ones, which can be used to train hunting dogs in enclosures.

Poachers use spotlights to detect, shoot or trap hares alive in the area. This takes place particularly in the spring and early summer months when the number of hares is higher after breeding and leverets, which are much easier to catch, are abundant. Driving cars outside the roads can be a significant stress agent for the roosting and resting migratory birds, as well as breeding birds.

The rich waterfowl, especially wintering duck species at Akrotiri wetlands also attract poaching. Zakaki Marsh is the main area for such activity, due to its accessible location. Waterfowl hunting is more successful at night time, especially in stormy weather since ducks fly around all the time to find more sheltered areas. Poaching in these conditions is very difficult to detect.

The species under immediate risk from these activities is the very important Ferruginous duck, with three pairs breeding at Zakaki Marsh during the last six years. Furthermore, illegal hunting could cause lead poisoning of the birds of the marsh, as poachers are using the cheaper lead rather than steel shots required for legal/safe waterfowl hunting. Waterfowl poaching also takes place within the Bishop's Pool area with similar consequences to the avifauna.

Another common poaching activity is the illegal use of playback calls mimicking targeted species. The main area where this takes place is the northern part of Akrotiri Merra and Kouris riverbed, where hunting is allowed everyday from mid-August to end-February. The main targeted species during the autumn months are common quails (*Coturnix coturnix*), and turtle doves (*Streptopelia turtur*), and during the winter months mainly thrushes and skylarks (*Alauda arvensis*).

Common quails and skylarks are very attracted to the mimicking voices and very easily harvested in big numbers, which can cause serious population declines in the long term. Migrating quails coming into the island at night gather around the playback devices where hunters can literally exterminate them in the morning. The same is happening with skylarks during the day. Furthermore, the same areas suffer from illegal shooting for consumption of protected species such as warblers, finches, larks, pipits, wagtails and bee-eaters. Shooting of other protected species like stone curlews and some raptors is less common, but does take place such as in the case of the shooting of 52 Red-footed falcons within the Fassouri Plantations in 2007.

During the autumn migration in September and October, large flocks of Bee-eaters numbering hundreds of individuals are passing through everyday. These birds commonly concentrate near the apiculture sites of the area, where intensive poaching takes place. The main area for this activity is the eucalyptus forest north of the Salt Lake, which hosts more Bee-eaters than any other area in Cyprus. Poachers take advantage of the coverage provided by the forest, the numerous access points and the adjacent administrative boundary between the SBAs and the RoC, which complicates policing issues.

Poaching also includes the use of net traps to catch finches sold as pets, which although takes place at various areas, is relatively small scale.

14.10.4. Impact on important reptiles

There is no significant impact, besides the issues relating to uncontrolled access.

14.10.5. Impact on important mammals

All bat species can be trapped within mistnets.

14.10.6. Impact on important amphibians

There is no significant impact, besides the issues relating to uncontrolled access.

14.10.7. Impact on important invertebrates

There is no significant impact.

14.10.8. Impact on important fish

There is no significant impact.

14.10.9. Management arrangements and controls

The SBA Police issues and implements an action plan every year in cooperation the SBAA Environment Department, Area Office and the RoC Game Fund. Emphasis is given to problematic game reserves and shooting of protected species (bee eaters at the Eucalyptus plantation, ducks at Zakaki pool etc) and poaching using mistnets and limesticks.

The situation is generally under control but the aim should be to restrict the daily hunting at the area covered in map 114, to make the policing more feasible and to protect many protected species which use the area as a flyway and do get shot. Also more emphasis should be given to joint SBA/RoC patrols at adjoining areas which fall within the two jurisdictions.



Map 114: Hunting area near Fassouri Marsh

14.11. Hunting

The main issue is related to the daily hunting allowed within the area shown on map 114. A secondary issue is the risk of lead poisoning of wetlands and pollution by discarded spent shells.

14.11.1. Impact on important habitats

Hunting near wetland areas creates a risk for water pollution with lead shots and general pollution with discarded spent shells.

14.11.2. Impact on important plants

There is no significant impact on important plants, besides impact relating to access, especially by car.

14.11.3. Impact on important birds

The part of the M1 hunting area shown on map 114 hosts a wide variety of migratory birds especially small finches that are using the area in hundreds and large waders like curlews, especially during the winter months and the migrating seasons. These areas are attractive to many hunters whenever the rest of the hunting areas do not appear to have much game interest. Allowing daily hunting in these areas makes the policing very difficult. As a result, many poaching activities take place as discussed in 14.10.3. Furthermore, this hunting site is right next to Fassouri Marsh, which is running a risk of pollution by lead shots.

14.11.4. Impact on important reptiles

There is no significant impact.

There is no significant impact.

14.11.5. Impact on important amphibians

There is no significant impact.

14.11.6. Impact on important invertebrates

There is no significant impact.

14.11.7. Impact on important fish

There is no significant impact.

14.11.8. Management arrangements and controls

Same as 14.10.9

14.12. Military activities

A variety of military activities are carried out both within and outside fenced areas. The management of these activities will be addressed in detail in a separate plan (Integrated Rural Management Plan for Akrotiri) but a brief reference for the activities outside RAF Akrotiri is made in this plan as well.

Such activities include flying of aircraft and helicopters, operation of communication sites at Pluto and Western Aerial Farm, and exercising at various sites. These activities have a potential impact on important habitats and species and need to be managed appropriately.

The particular environmental impact of the Pluto antennae has been assessed in a relevant EIA carried out in 2002 which proposed particular mitigation, compensation and monitoring.

14.12.1. Management arrangements and controls

When ongoing military activities may pose a risk at protected species (for example flying aircraft when Demoiselle cranes are roosting at the Salt Lake) the military is requested to amend, where feasible, their schedule of activities.

Any other activities or training which needs to take place near the Salt Lake or at Akrotiri Forest goes through the Appropriate Assessment process. The arrangements with the Military are generally running very smoothly and in most cases the Military accommodates the environmental needs.

There is a rigorous process in place under the EIA, Nature and Birds legislation for the assessment of military projects, but these issues will be covered in more detail in the Integrated Rural Management Plan for Akrotiri.

14.13. Deterioration of Akrotiri Aquifer

The deterioration of the aquifer has a direct, parallel impact on the hydrology of Fassouri Marsh. This relationship will be addressed in more detail in the component plan for Hydrology - Geology.

14.13.1. Impact on important habitats

The important habitats affected by the deterioration of Akrotiri Aquifer are 6420, CY02, 92DO, 6420, 3140 at Fassouri Marsh, which depend directly on the availability and quality of water.

The water-logging conditions between 2005 and 2008, and the lack of standing water in recent years has caused major habitat changes such as the proliferation of reeds and the damage to the eucalyptus part at the northeastern part of the Marsh. There are also clear trends for succession from wetland to scrubland with *Tamarix* species starting to occupy areas which were previously wet grasslands.

14.13.2. Impact on important plants

Ipomoea sagittata, *Mentha aquatica*, *Orchis palustris*, *Saccharum strictum*, *Schoenoplectus lacustris*, *Baldelia ranunculoides*, *Euphorbia pubescens*, are all important plants sensitive to hydrological conditions. The impact of the extraordinary fluctuations and deteriorating hydrological conditions is already evident from the damage to the populations of *Orchis palustris* and *Baldelia ranunculoides*.

14.13.3. Impact on important birds

The lack of standing water has had a remarkable impact during the last few years on the important avian interest at Fassouri Marsh.

The migratory, wintering and breeding interest (Spur-winged plovers and Ferruginous ducks) associated with the wetland value of the area has been diminishing.

14.13.4. Impact on important reptiles

No significant impact on important reptiles.

14.13.5. Impact on important mammals

The reduced wetland habitat is likely to decrease the food supply to the insectivorous bats.

14.13.6. Impact on important amphibians

Although there are no particular data available, *Hyla savignyi*, has most probably been affected by the contraction of its prime wetland habitat at Fassouri Marsh.

14.13.7. Impact on important invertebrates

Even though the prime habitat of *Brachinella spinosa* is in the Salt Lake, because of the connection of the lake with the marsh, the hydrological balance of the lake is likely to have been affected by the deteriorating conditions in the aquifer and the lack of water in the marsh.

14.13.8. Impact on important fish

Although today *Aphanius fasciatus* occurs mainly at Zakaki Marsh and the peripheral of the Salt Lake, its long term survival depends on the health of the wider wetland system. Indeed, during periods of extended flooding/water-logging, this species has been observed in very big numbers within Fassouri Marsh.

This is also supported by local information that the species had been abundant within the marsh when it was fed by Kouris River and a healthier aquifer. Therefore, restoring the aquifer to a healthy condition is likely to have a positive impact on this species and the food chain it supports, especially birds.

14.13.9. Management arrangements and controls

There are controls in place for the management of Akrotiri aquifer, under various pieces of legislation relating to wells, boreholes and water pollution. However, the end result is that the water budget of the aquifer is negative and is deteriorating fast.

14.14. Storm water drainage at Zakaki

Although a very important source of water for Zakaki and the wider wetland system, surface drainage can be a source of pollutants such as hydrocarbons, herbicides, silt and sediment, heavy metals, nitrate and phosphate. In addition, excessive storm water could affect the annual variation of salinity in the Salt Lake, but this needs further assessment.

14.14.1. Impact on important habitats

The primary habitats affected by the quality and quantity of storm water through Zakaki are 1150 and CY02.

14.14.2. Impact on important plants

There is no significant impact on important plants.

14.14.3. Impact on important birds

Zakaki Marsh is like a mirror image of Fassouri Marsh in relation to the Salt Lake. The deteriorating hydrological condition of the aquifer and the Fassouri Marsh has increased the importance to avifauna - both migratory and breeding birds - of storm water supply to Zakaki Marsh. Although the marsh ecosystem itself works as a biofilter for water pollutants, a monitoring system is required to inform the management of the storm water supply.

14.14.4. Impact on important reptiles

There is no significant impact on reptiles.

14.14.5. Impact on important mammals

There is no significant impact on mammals, except possible indirect benefits in terms of the food source for insectivore bats.

14.14.6. Impact on important amphibians

Water quantity and quality are important to *Hyla savignyi*.

14.14.7. Impact on important invertebrates

Water quantity, quality and seasonal variation in the Salt Lake, which is fed by Fassouri Marsh is important to *Brachinella spinosa*.

14.14.8. Impact on important fish

The hydrological conditions in Zakaki Marsh are important to *Aphanius fasciatus*.

14.14.9. Management arrangements and controls

There is some control of water flow, but no monitoring system in place for water quantities and quality of water in the storm water drainage at Zakaki, which includes the Miltonos storm sewer and a proposed sewer from the western part of Limassol.

14.15. Golf course development north of Akrotiri Salt Lake

A large scale development of golf course and houses north of the Salt Lake, within areas currently under agricultural activities, within the RoC has been approved.

14.15.1. Impact on important habitats

The long term effect of the changed use of land is indirect impact on habitat types 1150, 1310, 1410, 1420, 5420, 92DO, CY02, in terms of invasive species, water quality (eutrophication, pollution), increased visitors and activities to the nearby wetlands which increase various risks such as fire, pollution etc.

14.15.2. Impact on important plants

The effect on important plants includes possible indirect impact on *Cladium mariscus*, *Linum maritimum*, *Isolepis cernua*, *Crypsis factorovskyi*, *Juncus maritimus* and *Phyla nodiflora*, from invasive species, modifications of hydrological and other conditions important to plants, use of pesticides and increased visits and activities.

14.15.3. Impact on important birds

Development and maintenance of golf courses can impact different bird species in different ways. Turning thickly vegetated agricultural to more open areas will change dramatically the use of the estate itself by birds.

Today the man-made habitat of the plantations is used by Red-footed falcons and some raptorial species, which are using the wider area for roosting and resting. This interest will be affected by the changed land use. Furthermore, maintaining grassy areas and establishing extensive residential areas close to wetlands can lead to an extensive use of pesticides and insecticides which can be very detrimental to a lot of birds and other species in direct and indirect ways.

The golf activities and the new residential areas will also increase human presence in the area and pressure on the local ecosystem, including visual disturbance, noise, light and domesticated cats and dogs. Artificial light during the night and landscape changes could affect the migratory species, which choose to travel during the night to avoid predators.

14.15.4. Impact on important reptiles

The impact includes increased human induced pressure, especially through domesticated cats.

14.15.5. Impact on important mammals

The potential impact includes decreased food supply to the fruit bats, which are known to be using such fruit farms and to the insectivore bats through the use of pesticides.

14.15.6. Impact on important amphibians

Habitat loss, and similar to bats they are threatened by the use of pesticides and insecticides. Furthermore, frogs are among the most susceptible wildlife species from the use of chemicals in the environment. It is therefore crucial that golf course management is committed to be using only environmental safe chemicals and practices when managing their courses.

14.15.7. Impact on important invertebrates

Brachinella spinosa in the Salt Lake is likely to suffer damage in the long term through the use of pesticides.

14.15.8. Impact on important fish

Aphanius fasciatus is also likely to suffer long term damage from the use of pesticides.

14.15.9. Management arrangements and controls

The project is within the Republic but there should be a strict monitoring of the conditions imposed by the Environment Authority which include the preparation and implementation of management plans.

14.16. Farming activities north of Akrotiri wetlands**14.16.1. Impact on important habitats**

The agricultural activities are likely to be having an impact on the water quality of the wetlands with various risks such as change of water chemistry pollution and eutrophication.

14.16.2. Impact on important plants

The risk to the water quality and chemistry extends to the important plants at Fassouri Marsh and the northern edge of the Salt Lake. The changes in the important conditions for plants also include probable impact on pollinators from pesticides.

14.16.3. Impact on important birds

There is a direct impact risk on important birds such as the Red-footed falcon from the use of pesticides and an indirect risk through the impact of fertilizers and pesticides on the invertebrate interest of the area as a food source to birds.

14.16.4. Impact on important reptiles

There is no significant impact on important reptiles.

14.16.5. Impact on important mammals

The use of insecticides can have direct and indirect impact on *Rousettus aegyptiacus* and the insectivore bats.

14.16.6. Impact on important amphibians

Like most amphibians, the Mediterranean tree-frog is very sensitive to hazardous chemicals, which is one of the main reasons for population declines of different amphibian species all over the world. Thus, the use of certain pesticides could pose a threat to the Mediterranean tree-frog. Furthermore, the tree-frog is known to be using the agricultural areas around the wetlands for hibernation throughout the winter months.

During this time, it uses ground burrows and suitable isolated areas on vegetation. Application of pesticides as well as other agricultural activities could be posing a risk to this species. Further work is required to establish appropriate management. Also, the agricultural chemicals could be affecting the sensitive water chemistry in the wetlands with consequences on the tree-frog.

14.16.7. Impact on important invertebrates

The water chemistry and quality issues in the wetlands relate to *Brachinella spinosa* as well.

14.16.8. Impact on important fish

Aphanius fasciatus is facing the same issues with *Brachinella spinosa*.

14.16.9. Management arrangements and controls

There are currently no formal arrangements in relation to farming within the peninsula. The intention is to explore opportunities for members of the community to receive European funding for environmentally sustainable farming. A monitoring system for parameters such as use of pesticides and fertilisers is also required.

14.17. Farming south of Akrotiri wetlands

Intensive farming south of the wetlands takes place within the Bishop's farm. The farm used to be planted with citrus trees but recently it has been changing more into potato plantations and other seasonal crops. Runoff to the wetlands, which occurs during periods of high precipitation only, creates risks for pollution and impact on water chemistry. The Bishop's pool within the farm is part of the SPA of Akrotiri wetlands.

14.17.1. Impact on important habitats

The farming activities have been extending over the years over natural habitat within the Bishop's land. The remaining part of natural habitat, including priority habitats 6220 and 2250 is under such a threat.

14.17.2. Impact on important plants

There are indirect risks to the wetland system of the Salt Lake from the agricultural activities similar to the ones described in 14.16.2. In addition, the encroachment of agriculture on natural habitat is threatening *Aegilops bicornis*, *Ipomoea imperati*, *Lotus cytisoides*, and *Pancratium maritimum*.

14.17.3. Impact on important birds

The plantations within the Bishop's farm host Red-footed falcons in much smaller numbers than the plantations north of the wetlands. These birds face the same threats as described in 8.4.2.8.

The extension of farming onto natural habitat within the estate would have an impact on Cyprus warbler and Stone curlew, which use this habitat throughout the year.

The Bishop's pool attracts significant numbers of waterbirds, especially anatidae species.

Observations of Ferruginous duck have also become more common during the last five years, although there have been no breeding records in this location. This could be a result of the lack of adequate aquatic vegetation, required for the nesting of this species, due to the grazing of carps on aquatic vegetation.

14.17.4. Impact on important reptiles

Unlike the agricultural areas north of the wetlands, this area is closer to the coast and supports habitat and a good population of *Acanthodactylus schreiberi*. This species could be suffering impact from the use of pesticides. It is also facing the risk of direct and habitat damage from the expansion of agricultural activities.

14.17.5. Impact on important mammals

The threats are the same as described in 14.16.5

14.17.6. Impact on important amphibians

The threats are the same as described in 14.16.6

14.17.7. Impact on important invertebrates

The threats are the same as described in 14.16.7

14.17.8. Impact on important fish

The threats are the same as described in 14.16.8

14.17.9. Management arrangements and controls

Same as 14.16.9.

14.18. Grazing at Fassouri Marsh

Grazing, mainly cattle, around the Fassouri Marsh has been a traditional practice for many years with diminishing trends. Grazing reduces the amount of standing reeds and keeps them in control, hence creating open areas for many open areas species of many taxa.

14.18.1. Impact on important habitats

The impact is mostly positive for maintaining a habitat mosaic, controlling succession, controlling reed proliferation and maintaining open areas which are important for many species.

14.18.2. Impact on important plants

Although the impact is positive on many species, more work is required to establish its impact on certain species such as *Baldelia ranunculoides* and *Scirpus lacustris*. The latter under extended dry conditions appears to be more accessible to grazing.

14.18.3. Impact on important birds

Grazing at Fassouri Marsh controls the reeds and creates habitat for birds that favour open areas, including nesting habitat for some wader species that like to breed in open areas near water. On the other hand such species could be threatened with trampling of their nests by the grazing animals.

14.18.4. Impact on important reptiles

There is no significant impact on important reptiles.

14.18.5. Impact on important mammals

The open habitat benefits the activities of the insectivorous bats.

14.18.6. Impact on important amphibians

There is no significant impact on amphibians.

14.18.7. Impact on important invertebrates

There is no impact.

14.18.8. Impact on important fish
There is no impact.

14.18.9. Management arrangements and controls
There is no formal monitoring or assessment in place.

14.19. Grazing south of Akrotiri wetlands

Grazing takes place in most natural habitat areas south of the wetlands including Akrotiri Merra, Akrotiri Forest and RAF Akrotiri.

14.19.1. Impact on important habitats
Sustainable grazing could be positive for maintaining habitat mosaics, but over-grazing in certain areas, such as around animal husbandry units has obvious negative impact on habitats.

14.19.2. Impact on important plants
Sustainable grazing is positive for certain plants but further assessment is required to establish any impacts on certain species.

14.19.3. Impact on important birds
Sustainable grazing benefits most bird species, by creating small open patches of habitat within shrub land. These open habitats favour the growth of herbs which is the basis of the food chain followed by insects and birds. The most important bird species favoured in this way by grazing in these particular areas, are the insectivorous Stone curlew, and the Cyprus warbler.

14.19.4. Impact on important reptiles
There is no significant impact.

14.19.5. Impact on important mammals
There is no significant impact, besides the food source for insectivorous bats.

14.19.6. Impact on important amphibians
There is no significant impact.

14.19.7. Impact on important invertebrates
There is no significant impact.

14.19.8. Impact on important fish
There is no significant impact.

14.19.9. Management arrangements and controls
There is no formal monitoring or assessment in place. There are more than 50 sheep/goat folds within Akrotiri Forest, near Lady's Mile, and at Phassouri Marsh. A large number of them are no longer used as sheep/goat folds but instead they are used for keeping dogs, pigeons etc.

None of the sheep/goat folds is properly licensed but the Area Office is now in the process of dealing with the illegal folds. Recently, the SBA Administration authorized the relocation of a number of folds to the Akrotiri Forest following complaints for nuisance by some inhabitants of the village. The relocation has gone through the EIA and Appropriate Assessment processes. The grazing licensing process within RAF Akrotiri is currently under review to ensure sustainable stocking levels.

14.20. Operation of Akrotiri Fishing Shelter

14.20.1. Impact on important habitats
Although the shelter is located close to the most important turtle nesting areas at Akrotiri, direct impact on the nesting beaches is managed appropriately. Access and the parking facility for the shelter are also managed appropriately at the current capacity of the shelter. The prospect for increasing this capacity will inevitably put pressure on important habitats.

14.20.2. Impact on important plants
Although the area hosts *Taraxacum aphrogenes*, *Lotus cytisoides*, and *Achillea maritima*, the small size and good management of the shelter does not cause significant damage, but again any increase in its capacity would inevitably result in damages to these plants.

14.20.3. Impact on important birds
The fishing shelter facilitates considerable sport-fishing activity west and south of the peninsula, areas which would otherwise not be easy to access. The majority of the boats are using the area for fishing on weekends and holidays. This is likely to be creating a certain degree of disturbance on the breeding and feeding habitat of the European shag. Further assessment is required to establish this impact and inform necessary management.

14.20.4. Impact on important reptiles
Access to the shelter has some direct impact on *Acanthodactylus schreiberi* and causes fragmentation to its habitat.

The main impact on the reptile interest is the support of a fishing infrastructure, an activity which at the moment conflicts with the marine turtle interest. The study referred to at 7.6.1 is currently underway to assess the impact of the fishing activity on the two priority marine turtle species.

14.20.5. Impact on important mammals

The main issue here is the possible impact of fishing on the Mediterranean Seal, especially disturbance to the nesting sites. Fishing and other recreational activities close to nesting sites could create excessive disturbance which could result in abandonment of pups. Furthermore, seal pups are known to be easily getting tangled in nets and drowning.

Further risk assessment work is required for appropriate management decisions.

Other marine mammals that are known to be affected by fishing are dolphin species. Further information is required in this respect as well.

14.20.6. Impact on important amphibians

There is no significant impact.

14.20.7. Impact on important invertebrates

There is no significant impact.

14.20.8. Impact on important fish

There is no significant impact.

14.20.9. Management arrangements and controls

Premises and parking at the shelter are limited to the absolute minimum as it is situated at a very sensitive area. The Fishing shelter has been recently upgraded in accordance with the conditions imposed by the SBA Administration. Its operation must comply with the provisions of the Fishing Shelters Ordinance.

14.21. Fishing at sea

The areas around the peninsula, shown on map 115 are among the most popular sites for fishing activities in the wider area of Limassol. Fishing activities include mainly fishing with nets, long-lines, fishing-rod and spear-gun.



Map115: Fishing areas

14.21.1. Impact on important habitats

There is no significant impact on habitats, except for the relatively small scale impact on Posidonia beds from the anchoring of boats.

14.21.2. Impact on important plants

There is no significant impact, except the small scale impact on *Posidonia oceanica* outlined at 14.21.1.

14.21.3. Impact on important birds

Boating and fishing activities close to the coast have an impact on Shags as outlined in 8.4.1.5.

14.21.4. Impact on important reptiles

Fishing has been having a significant impact on sea turtles, both Green and Loggerhead. In the last two years about 50 dead turtles have been washing up every year within Akrotiri-Episkopi Bay, large part of which was juvenile Green turtles. The causes are being investigated, but many of these deaths are probably related to entanglement in fishing nets. The probable locations of these entanglements are also under investigation, as the bay is a collection basin for a much bigger region due to the prevailing winds and sea currents.

14.21.5. Impact on important mammals

Boating and fishing activities close to the southern cliffs have an impact on the Mediterranean Monk Seal as outlined in 8.5.1.

14.21.6. Impact on important amphibians

There is no significant impact.

14.21.7. Impact on important invertebrates

There is no significant impact.

14.21.8. Impact on important fish

There is no significant impact.

14.21.9. Management arrangements and controls

Fishermen at sea must comply with the provisions of the SBAA Fisheries legislation and must possess the relevant professional or amateur licence. The main problem with fishing is the incidental entanglement of turtles in fishing nets and one that is difficult to address other than ensuring compliance with the timings and depths fishing nets are permitted to be cast. However the sea turtle – fishing survey underway will shed more light on this issue.

Other forms of fishing including spear-gun fishing are also regulated by the Fisheries legislation.

14.22. Coastal erosion

Coastal erosion is affecting some of the important features of the peninsula, but in this case the time scales involved and the retreat and adoption of the ecosystem to accommodate changes is an important factor as well. Some of these issues will be addressed in the component plan for hydrology and geology.

14.22.1. Impact on important habitats

Erosion has an impact on all coastal habitats such as 1210, 1420, 2120, 1110, CY05, 1240, 1240, 8310, 8330 and 2110.

14.22.2. Impact on important plants

The impact of coastal erosion on important plants is focused on *Achillea maritima*, *Coronilla repanda subsp. repanda*, *Lotus cytisoides*, *Pancratium maritimum* and *Taraxacum aphrogenes*.

14.22.3. Impact on important birds

There is no significant impact except for the shrinking of coastal bird habitats, which, however, could be creating new bird habitat in some cases.

14.22.4. Impact on important reptiles

Erosion is affecting the habitat of *Acanthodactylus schreiberi*, but the impact requires further assessment.

14.22.5. Impact on important mammals

Erosion is affecting the sea caves used by the Monk seals, but the impact in this respect requires further assessment.

14.22.6. Impact on important amphibians

There is no significant impact.

14.22.7. Impact on important invertebrates

There is no significant impact.

14.22.8. Impact on important fish

There is no significant impact.

14.22.9. Management arrangements and controls

At the moment there is no formal monitoring of the coastal erosion. The intention is to undertake a coastal management plan which will deal with erosion. This could be part of a wider management plan covering the entire island.

14.23. Pollution

Most pollution issues on land are covered in other activities, but there are pollution threats at sea as well, such as oil slicks and marine debris.

Oil slick events occur mainly on the east coast of the peninsula and are related to the intense shipping activity within the Limassol Bay which includes the main harbour of the island. The west coast collects big volumes of marine debris due to the topography of the area and the prevailing southwesterly winds and currents.

14.23.1. Impact on important habitats

Oils slicks threaten the marine and coastal ecosystem which includes habitat types 1110, 1120*, 1170.

14.23.2. Impact on important plants

Important plants occurring on the coast are threatened by oil slicks. These include *Achillea maritima*, *Lotus cytisoides*, *Pancratium maritimum* and *Taraxacum aphrogenes*.

14.23.3. Impact on important birds

The main important bird species at risk from oils slicks are gulls and shags.

14.23.4. Impact on important reptiles

Oil slicks and marine debris, particularly plastic bags have an impact on marine turtles. Oil slicks also have an impact on the habitat of *Acanthodactylus schreiberi*.

14.23.5. Impact on important mammals

Oil slicks have an impact on seals and dolphins.

14.23.6. Impact on important amphibians

The impact of pollution in the wetlands on amphibians, which are highly susceptible to chemicals and pollution has been covered in other activities.

14.23.7. Impact on important invertebrates

The impact of water pollution on *Brachinella spinosa* has been covered in other activities.

14.23.8. Impact on important fish

The impact of water pollution on *Aphanius fasciatus* has been covered in other activities.

14.23.9. Management arrangements and controls

There is a Marine Pollution Spillage Plan in place implemented by the SBA Customs in the event of an oil slick in the sea.

14.24. Fire

Fires, depending on their size intensity and duration can affect:

- Soil properties, by killing soil microbes, destroying/damaging plant roots and seeds, destroying soil organic matter and altering soil nutrient and water status.
- Air quality, affecting humans and wildlife.
- Water quality in negative and positive ways.

14.24.1. Impact on important habitats

Fire can have devastating consequences on important habitat, but can also be a tool for management in certain cases such as reedbeds, where it can be used to reduce the building up of debris on the marsh floor, control succession, control reeds, increase habitat and food for waterfowl and increase nutrient mineralization.

In addition to the degradation and change of habitat structure and quality, fires encourage the proliferation of alien invasive *Acacia saligna* and in some cases accelerate erosion of habitats.

14.24.2. Impact on important plants

The response of plants to fire depends on the severity of the fire and the characteristics of the particular plant including the inherent resistance to damage and its ability to recover. Plants can survive a fire, sprout from the base or from undamaged buried parts, or establish from seed.

The alien invasive *Acacia saligna* generally benefits from fires and generally displaces indigenous vegetation.

Intensive fire can change soil properties important to plants such as nutrient and water up taking. For instance, it can cause hydrophobic conditions, by creating a water repellent layer on soil.

14.24.3. Impact on important birds

The impact of fires on birds can also be both negative and positive and requires management. Birds can literally be burned alive in hot uncontrolled summer fires, and their habitats can be completely destroyed. On the other hand, controlled, prescribed burning can improve habitats and benefit bird interest in areas such as Fassouri Marsh.

14.24.4. Impact on important reptiles

In most cases reptiles cannot outrun fires and cannot survive them unless there are safe spots providing refuge. Summer wild fires in certain areas have a significant impact on *Acanthodactylus schreiberi*.

14.24.5. Impact on important mammals

Summer, intense fires can kill most mammals. The important terrestrial mammals in the area are bats, the habitat and food source of which can be damaged from intense, uncontrolled fires. On the other hand, prescribed burning can benefit these species in the longer term.

14.24.6. Impact on important amphibians

The same principles as in 14.24.5 apply to amphibians as well.

14.24.7. Impact on important invertebrates

The only impact of fire on the ecology of the wetlands including *Brachinella spinosa* would be from the ashes and other burned material carried by the wind and runoff, an issue that requires further assessment.

14.24.8. Impact on important fish

The same issues as in 14.24.7 apply to *Aphanius fasciatus* as well.

14.24.9. Management arrangements and controls

The lighting of fires is controlled through the issue of fire permits under the Prevention of Fires in the Open Country Ordinance. There is a problem with deliberate lighting of fires at Fassouri Marsh. Currently there is joint action plan by the Fire Services, the SBA Police, the SBAA Environment Department and the Area Office and the Fassouri Marsh is patrolled on a regular basis. The longer term intention is to organize controlled fires in cooperation with the Akrotiri Community Council for reed management.

14.25. Introduction of alien invasive species

The main alien invasive plant species in the area include *Acacia saligna*, which is the most serious invasive species in Cyprus and to a lesser degree *Dodonea viscosa* and *Casuarina cunninghamiana*. In addition to these species, smaller scale planting initiatives are taking place out of ignorance, by individuals or groups. These initiatives, although carried out on good intention to promote vegetation, cause damage to indigenous flora and the ecosystem in general. Some of the areas planted so far are shown on map 116.



Map 116: Planting of alien invasive species

14.25.1. Impact on important habitats

Acacia is encroaching more and more on important habitats as outlined in 6.1.3. The habitats affected mostly include 1410, 5420, 1420, 5212, 2110 and 6220*,

14.25.2. Impact on important plants

Acacia is damaging biodiversity as discussed in 8.1.3.

14.25.3. Impact on important birds

The bird interest is suffering indirect impact from the habitat changes caused by acacia invasion.

14.25.4. Impact on important reptiles

The reptile interest is suffering indirect impact from the habitat changes caused by acacia invasion.

14.25.5. Impact on important mammals

The terrestrial mammal interest is suffering indirect impact from the habitat changes caused by acacia invasion.

14.25.6. Impact on important amphibians

The amphibian interest is suffering indirect impact from the habitat changes caused by acacia invasion

14.25.7. Impact on important invertebrates

The invertebrate interest is suffering indirect impact from the habitat changes caused by acacia invasion

14.25.8. Impact on important fish

Aphanius fasciatus is known to have been affected by the introduction of aquarium fish of the genus *Gambusia*, but this requires further assessment at Akrotiri.

14.25.9. Management arrangements and controls

At the moment there is no comprehensive policy or control in place for the introduction of alien invasive species. Also, an action plan needs to be drawn up in relation to the control of acacia.

14.26. Management of eucalyptus forest**14.26.1. Impact on important habitats**

The current management of the eucalyptus forest requires consideration in relation to the control of the invasive *Acacia saligna*. Also, due consideration may be required to assess the option to promote other native habitats to replace the stands of eucalyptus, acacia and casuarina.

14.26.2. Impact on important plants

Assessment of the forest management practices such as the construction of fire breaks, and track maintenance, is required in relation to their possible impact (positive and negative) on important plants such as *Linum maritimum*, *Cladium mariscus*, *Isolepis cernua*, *Crypsis factorovskyi* and *Juncus maritimus*.

14.26.3. Impact on important birds

The species that could be affected by the management of the eucalyptus forest are raptorial species and bee-eaters. This issue requires further assessment.

14.26.4. Impact on important reptiles

There is no significant impact.

14.26.5. Impact on important mammals

The bat interest within the eucalyptus plantation is not known and requires further surveys.

14.26.6. Impact on important amphibians

This impact could be addressed together with the issue on habitats covered in 14.26.1.

14.26.7. Impact on important invertebrates

There is no significant impact.

14.26.8. Impact on important fish

There is no significant impact.

14.26.9. Management arrangements and controls

The forest is currently managed by the RoC Department of Forests.

14.27. Archaeological excavations

The only active excavation site at Akrotiri is at the moment at 'Katalimata ton Plakoton'. Although, the excavations so far have been of relatively limited extent, the site appears to be much bigger and any further work will need to be properly assessed. In addition, the local community has been expressing interest in promoting the site to visitors, which is an issue which also needs to be assessed.

14.27.1. Impact on important habitats

The habitats in the wider area include 5212, 5420 and 6220*.

14.27.2. Impact on important plants

The important plants in the wider area include *Coronilla repanda subsp. repanda*.

14.27.3. Impact on important birds

There is no significant impact at the moment, but wider work and promotion will need to assess the impact on Cyprus warbler and Stone curlew.

14.27.4. Impact on important reptiles

There is no significant impact.

14.27.5. Impact on important mammals

There is no significant impact.

14.27.6. Impact on important amphibians

There is no significant impact.

14.27.7. Impact on important invertebrates

There is no significant impact.

14.27.8. Impact on important fish

There is no significant impact.

14.27.9. Management arrangements and controls

Excavations undertaken by the RoC Department of Antiquities outside MOD controlled areas do not need a licence from the SBA Administration as the power has been delegated to the RoC. If, however, for an excavation protected vegetation or trees need to be removed or if there is potential impact on the designated or candidate sites, the appropriate assessment process applies and/or a licence for removal is issued under the Protection and Management of Nature Ordinance or under the Forestry Ordinance.

14.28. Succession

Although succession is a natural process, human intervention has been intervening with it for a long time and has had positive and negative impact on biodiversity. Careful consideration is required to assess the need, scale and form of such intervention. One of the most common areas where such intervention and active management is required is areas where previous interventions have been causing changes, such as for example Fassouri Marsh, Zakaki Marsh and Akrotiri quarry areas.

14.28.1. Impact on important habitats

The hydrological issues and the need for water level management, reedbed management and general habitat management at Fassouri Marsh have been discussed in other sections. The same applies to Zakaki Marsh.

At Akrotiri Merra a scheme of dune stabilization had been undertaken by the Department of Forests in the past and this issue requires revisiting and assessment.

The quarry areas at Akrotiri Merra also require further consideration in relation to the possibility for re-instatement of habitat.

The silting of Akrotiri Salt Lake and its relationship with succession and possible proliferation of acacia is another issue that requires further assessment. The impact on succession of fires and the implications of acacia invasion has also been discussed elsewhere.

14.28.2. Impact on important plants

Succession has an impact on most of the important plants at the Fassouri Marsh as discussed in other sections and any management consideration should take account of this interest.

14.28.3. Impact on important birds

Succession issues for birds have also been covered in other sections and any consideration for management should take account of the bird interest. The same applies to the reptile, mammal, amphibian, invertebrate and fish interest.

14.28.4. Management arrangements and controls

At the moment there is no monitoring of succession trends.

14.29. Seasonal connection of Salt Lake to the sea

In the winter, after storms and strong easterly winds the sea overtops the sandbanks at certain locations along Lady's Mile and flows into the southeastern part of the Salt Lake and the surrounding areas. This connection is one of the important hydrological parameters of the lake ecosystem and the cycle relating to its water chemistry.

14.29.1. Impact on important habitats

There is a direct impact on the local habitats, particularly 1150* and 1420.

14.29.2. Impact on important plants

The relationship of this process with the important plants in the area requires further assessment.

14.29.3. Impact on important birds

The local important bird interest, particularly Kentish plovers and water birds is affected by the hydrological parameters of the area in terms of feeding and nesting habitat.

14.29.4. Impact on important reptiles

There is no significant impact.

14.29.5. Impact on important mammals

There is no significant impact.

14.29.6. Impact on important amphibians

There is no significant impact.

14.29.7. Impact on important invertebrates

This process is likely to be very important for *Brachinella spinosa* and its requirements of water cycle and chemistry.

14.29.8. Impact on important fish

The impact on *Aphanius fasciatus* requires further assessment.

14.29.9. Management arrangements and controls

There is no formal monitoring of the connection of the sea to the Salt Lake, other than incidental observations.

14.30. Drainage from Fassouri Marsh to Salt Lake

The relevant issues have been covered in 14.13.

14.30.1. Management arrangements and controls

A basic clearance of some of the ditches took place in recent years and basic flow controls and monitoring have been put in place. However, further work is required in this respect under a proper water level management scheme.

14.31. Drainage from Zakaki Marsh to Salt Lake

The relevant issues have been covered in 14.14.

14.31.1. Management arrangements and controls

Some maintenance of the ditch from Zakaki Marsh to the Salt Lake is being undertaken, but there is no consistent system in place for maintenance, control and monitoring.

14.32. Environmental education

Environmental education is one of the key conservation requirements, having long term and long lasting results, as it invests on the knowledge and awareness of the new generations.

The scale, timing and locations for field work are carefully chosen to avoid impact on sensitive, important features. This can be enhanced by appropriate infrastructure such as appropriate nature trails, bird-hides and signs.

14.32.1. Management arrangements and controls

The Akrotiri Environmental Education and Information Centre delivers education programmes to schools within the framework of the Cyprus network for environmental education. It also receives organized university and tourist groups. At the same time the Centre within the Bishop's land is carrying out independent education and information activities.

14.33. Eco-tourism

Eco-tourism can be a sustainable activity with conservation, economic, cultural and other benefits to the area and the local community. At the moment eco-tourism does not occur on an organized basis. Further initiatives are required for the promotion of the area, but this needs to be planned correctly and carefully based on the carrying capacity of the area as a whole and the particular sensitivities of different areas. Access is again an important parameter to be considered as discussed in 14.1.

14.33.1. Management arrangements and controls

Some eco-tourism is promoted through the Akrotiri Environmental Education and information Centre, but there is scope for much more work.

14.34. Bird watching

Bird watching is a very popular activity taking place at Fassouri Marsh, Zakaki Pool, the Bishop's Pool and the Salt Lake.

14.34.1. Management arrangements and controls

Bird watchers must comply with the provisions of the Game and Wild Birds Ordinance and Protection and Management of Nature and Wildlife Ordinance which prohibit deliberate disturbance to protected species.

14.35. Quarrying

Quarrying affected the Akrotiri Merra Area in previous decades in a very unsustainable manner, as it has removed tens of millions of cubic metres of gravel and sand and has reduced the level of extensive areas (a few square kilometers) to below sea level.

This, in conjunction with the damming of Kourris and Garyllis rivers, along with other processes such as tectonic movements and mean sea level rise, are compromising the long term future of the area, as coastal erosion will slowly but surely tend to restore Akrotiri to its previous condition of a separate island. These issues will be dealt with in more detail in the component plan for hydrology and geology. Smaller scale quarrying has also taken place in the past within the Bishop's Farm.

There is no information available on the ecosystem and the important features of the area before the heavy quarrying at Akrotiri Merra, but it can be assumed that the small, isolated plant communities found in various locations would be remnants of the past. The coastal lagoons dug out are an exception to all the negative impact of the quarrying activity.

14.35.1. Management arrangements and controls

There are currently no active quarries within the peninsula, but such activities are regulated under the Mines and Quarries Ordinance.

14.36. Marine aquaculture

There are two fish farms at the northwestern coast of Akrotiri which operate only shore facilities. Fish farming in sea cages exist off the northern edge of Lady's Mile just outside the SBA boundary.

14.36.1. Impact on important habitats

There appears to be a localized impact of the fish farming activities on the western coast relating to the discharged waste in the sea at shallow depths. However, there are no important habitats in this area.

The impact of the fish-farming in sea cages at Lady's Mile on *Posidonia oceanica* requires further assessment.

14.36.2. Impact on important plants

There could be a localized impact on *Posidonia oceanica* and *Cymodocea nodosa* plants.

14.36.3. Impact on important birds

Fish farms at sea attract big numbers of waterbirds, like cormorants and herons, which feed on the fish, causing significant economic losses to farms. Globally, farm owners take a number of measures, including shooting the birds. Common cormorants can cause considerable damages to the farms and are widely persecuted for this reason. Unfortunately, the same campaigns target European shags as well, although their numbers are smaller and they do not cause damage anywhere near the ones of the common cormorants. The situation at the fish farm at Lady's Mile requires further assessment.

14.36.4. Impact on important reptiles

There is no significant impact, besides the localized effect on *Posidonia oceanica* and *Cymodocea nodosa*, which support the Green Turtle interest.

14.36.5. Impact on important mammals

Internationally, fish farms have a conflict with seals and dolphins, which cause financial losses to aquaculture, but the situation at Akrotiri requires further assessment.

14.36.6. Impact on important amphibians

There is no significant impact.

14.36.7. Impact on important invertebrates

There is no significant impact.

14.36.8. Impact on important fish

There is no significant impact.

14.36.9. Management arrangements and controls

The two fish farms must comply with the provisions of the Fish Farming Ordinance. Operation licences are issued by the RoC Department of Fisheries and Marine Research. Further work is required to check whether they are complying with their licences, particularly the conditions for waste disposal to the sea.

14.37. Desalination

The desalination plant under construction close to the Kourris estuary has gone under a full EIA process for its impact on both the terrestrial and the marine environment. The main issues on the important features are highlighted here.

14.37.1. Impact on important habitats

There is no significant impact.

14.37.2. Impact on important plants

There is no significant impact, except possible localized effects on *Cymodocea nodosa* at the brine outlet points.

14.37.3. Impact on important birds

There is no significant impact.

14.37.4. Impact on important reptiles

The terrestrial infrastructure will have an impact on the habitat of *Acanthodactylus schreiberi*. Direct impact on the species will be minimized through mitigation incorporated in the construction methodology.

The impact on *Cymodocea nodosa* from the operation of the plant could have a knock on effect on Green Turtles, but further assessment is required to evaluate how significant this impact could be. Appropriate measures should be applied during the construction phase of the marine pipes, to minimize the impact on marine turtles.

14.37.5. Impact on important mammals

There is no significant impact.

14.37.6. Impact on important amphibians

There is no significant impact.

14.37.7. Impact on important invertebrates

There is no significant impact.

14.37.8. Impact on important fish

There is no significant impact.

14.37.9. Management arrangements and controls

The construction of the desalination plant must comply with the conditions imposed on the Approval issued by the SBA Administration.

14.38. Pest control

The main pest control measure in the area is regular mosquito control, focused on larvicide application, to minimize human health risks. The impact of the mosquito management on the wetland ecosystem has been assessed and approved. However a system needs to be put in place, in order to monitor the effectiveness of mosquito control and the possible impact on sensitive features such as amphibians and fish. This needs to be based on an integrated pest management system under wide stakeholder co-operation.

Other measures include the control of rats and the pine-moth, but these are carried out on a much smaller scale. Aerial spraying for the pine-moth has been discontinued in the last few years and the whole issue requires further assessment.

14.38.1. Management arrangements and controls

Mosquito control is undertaken by the Joint Services Health Unit and the relevant standards are complied with. Further work is required to co-operate with other stakeholders on the basis of an integrated pest management system. Current proposals include:

- Mapping of mosquito breeding grounds under a hydrological model
- Research on mosquito species and their spatial and temporal distribution and the associated health risks
- Treatment focused on wetland approved larvicides, with adulticides used only in special circumstances
- Promotion of appropriate biological control
- Reduction of mosquito breeding resource (e.g. through appropriate drainage management)
- Administrative measures with informed decision-making for development and activities
- Public education
- Monitoring of effectiveness and ecological impact

Last year, Cyprus experienced unusual weather conditions of high precipitation and extension of the rainy season into the spring which led to high mosquito breeding, with numerous complaints for nuisance and concerns over health risks. As a result, a joint working committee has been formed between the SBAs and the Republic of Cyprus, which is carrying out survey work in order to prepare a report with suggestions on how to manage better the issue.

The management of pine moth control needs further assessment.

14.39. Sporting activities at sea

The sporting activities at sea create similar issues to the fishing activities at sea outlined in 14.21. Most of the recreational activities at sea concentrate at Lady's Mile during the summer. Episkopi-Akrotiri Bay has been becoming more popular in recent years for sports like kite-surfing, but this interest at the moment is focused in areas away from the peninsula, which have easier car access.

14.39.1. Management arrangements and controls

Organised sporting activities on a commercial basis will not be permitted in accordance with the new SBAA Foreshore Policy. Individual sporting activities are permitted provided there is compliance with the Foreshore Ordinance and the Fisheries Legislation. These activities are under control and offenders are warned or prosecuted.

14.40. Horse Farms

There is only one horse farm, the Hawaii Farm north of the Salt Lake.

14.40.1. Management arrangements and controls

The horse farm is not controlled and no licences are issued.

14.41. Apiculture

The main area used for apiculture is the Eucalyptus forest north of the Salt Lake and between the Salt Lake and the Fassouri Marsh.

14.41.1. Management arrangements and controls

Apiculture is regulated the Apiculture Ordinance which requires the issue of a certificate by the Area Office to persons who wish to keep bee-hives. This power has been delegated to the RoC Department of Forests.

14.42. Storage areas

There are three commercial, large scale storage areas within the peninsula. Two of them (Kaisis, Sofocles) include the storage of scrap materials. The third at Bishop's Farm is used to store farming equipment and materials. Recently a store for aromatic plant close to Fassouri Marsh has been approved. Provided these storage areas are properly monitored and managed they don't have an adverse impact on the important features.

14.42.1. Management arrangements and controls

Storage areas need to comply with the conditions imposed on their building permits and comply with the provisions of relevant Ordinances (Waste Management Ordinance, etc). Proposal for new storage areas have to go through the Appropriate Assessment process.

14.43. Sewage at Akrotiri Village

There is no sewerage treatment at Akrotiri Village and it is likely that the cesspit system will have a long-term impact on the wetlands. Various proposals have been made in the past for incorporating Akrotiri in various sewerage treatment systems.

14.43.1. Management arrangements and controls

The intention is to include Akrotiri village in a sewerage treatment system but at the moment there is no progress on the issue.

14.44. Sewage at the restaurants at Lady's Mile

The restaurants at Lady's Mile do not have biological sewage treatment systems but merely cesspits which do not comply with modern hygiene and environmental standards. These facilities are watertight and are emptied periodically.

14.44.1. Management arrangements and controls

The SBA Administration is in the process of legalizing the restaurants and building permits will be issued. One of the conditions will be the introduction of a biological sewage treatment system.

14.45. Protected species and licences

Certain projects which may have an impact on protected habitat and/or species are approved on grounds of overriding public interest. Such projects may entail disturbance to bats in the case of demolition of buildings and removal of protected trees.

14.45.1. Management arrangements and controls

A licence to disturb protected species is required under the Game and Wild Ordinance or the Protection and Management of Nature and Wildlife Ordinance. Project proponents must comply with all the conditions in the licence which include compensation and mitigation.

14.46. Current conservation studies and surveys

There is a number of studies and surveys undertaken at different periods of the year for research and conservation purposes. These may have an impact on some habitats or species if not undertaken at a certain period or using non intrusive methods. The studies include the following:

14.46.1. Eleonora's falcon survey

The survey is undertaken at Akrotiri cliffs every year during the breeding period by Birdlife Cyprus in cooperation with the SBAA Environment Department and the RoC Game Fund.

14.46.2. Raptor survey

Raptor surveys during the migration periods are undertaken by Birdlife Cyprus and occasionally by consultants who are doing bird strike surveys.

14.46.3. Red-footed falcon survey

A detailed Red-footed falcon was done in 2008 by the SBAA Environment Department, Birdlife Cyprus, the RoC Game Fund, the RoC Environment Department and consultants employed by the Fassouri Plantations Company.

14.46.4. Demoiselle crane survey

A Demoiselle crane survey is undertaken during the summer-autumn migration season by the SBAA Environmental Wardens.

14.46.5. Wetland birds survey

Wetland bird surveys are undertaken on a regular basis by Birdlife Cyprus, the Akrotiri Environmental Education and Information Centre and the RoC Game Fund.

14.46.6. Red book plant survey

The SBAA Environment Department has started surveying red book plants in areas where distribution had not been surveyed due to access restrictions. The data is mapped and communicated to the RoC Department of Forests.

14.46.7. Bird flight path survey

The SBAA reports to the Bern Convention annually on the bird strikes on the aerial sites. As a result bird flight path surveys are undertaken during the autumn migration for the last few years. The last survey was undertaken in September 2010. Results will be analysed and recommendations will be extracted following consultation with the relevant stakeholders.

14.46.8. Bat surveys

A number of surveys for identification and monitoring of bat roosts have been undertaken by the SBAA Environment Department in the past.

14.46.9. Studies and surveys by RoC Departments

A number of studies and surveys are being undertaken in the area by various RoC departments such as the Antiquities Department, the Fisheries and Marine Research Department, the Water Development Department, the Department of Forests, The Game Fund, the Geological Survey Department and other. The reports on these studies and surveys need to be collated and used properly in the management plan.

14.46.10. Independent studies

A number of studies have been undertaken by independent researchers and university students on various environmental issues. Most of these studies have been properly licensed under the Nature and Birds Ordinances, but there are cases where the proper procedure has not been followed. The reports for all these studies need to be collated and used for management purposes.

14.46.11. Management arrangements and controls

Most of the studies require a protected species licence under the Protection and Management of Nature and Wildlife Ordinance or the Game and Wild Birds Ordinance which contains strict conditions.

14.47. Conservation activities

A number of conservation activities are taking place which are monitored through the SBAA Environment Department.

14.47.1. Turtles

Only persons who are appropriately trained and hold a licence under the Protection and Management of Nature and Wildlife Ordinance 2007, issued by the SBAA Environment Department may engage in nest detection, protection, excavation and relocation. The licensable

activities must strictly follow the guidance set out in the Manual on Marine Turtle Conservation in the Mediterranean (1995) and associated Addendum 1 (Conservation Practices) (2008) and the Marine Turtle Nest Monitoring and Protection Protocol, issued by the SBAA Environment Department.

14.47.2. Vultures

The vulture nesting interest at Episkopi is monitored every year with a view to keep records and rescue hatchlings from the sea if required. These activities need to be put on a more systematic basis.

14.47.3. Sand dune stabilization

A project for the stabilization of sand dunes at Akrotiri had been undertaken in the past by the Department of Forests, but was discontinued at some point. The issue needs further consideration.

14.47.4. Control of invasive acacia

A number of tests for the control of acacia have been undertaken by the SBAA Environment department using different methods at different local conditions. These experiences need to be accommodated in the wider plan for acacia management.

14.47.5. Control of reeds

Experimental control of reeds has been carried out by the SBAA Environment Department and the experiences gained can be used for the wider management plan for reeds.

14.47.6. Control of crow species

Licences have been issued under the Birds Ordinance to SBA Police for the control of crows, but this has mainly been based on complaints from farmers. The need for wider crow control requires further assessment.

14.47.7. Bird ringing

Bird ringing has been licensed under the Game and Wild Birds Ordinance at Fassouri Marsh and Bishop's Pool to Birdlife Cyprus and RAF Ornithological Society (RAFOS).

14.47.8. Emergency procedures for oil slicks

There is a Marine Pollution Spillage Plan in place implemented by the SBA Customs in the event of an oil slick in the sea.

14.48. Development issues

Development could have a significant impact on important features if not effectively controlled. At the moment there is a lot of pressure for development at many areas within the peninsula.

Residential development is controlled through the issue of building permits under the Streets and Buildings Legislation.

14.48.1. Management arrangements and controls

All applications for developments are controlled through the Area Office Akrotiri. Depending on the nature of the proposed development it needs to comply with the Streets and Buildings Legislation, and/or the Environmental Impact Assessment Ordinance and where necessary the Appropriate Assessment process.

Additionally, development is controlled by the SBAA Policy on non military development. In general development is well regulated and there is compliance with the necessary processes in place.

One of the values of the management plan will be the holistic approach to the assessment of the impacts of development on nature conservation interest, which is a requirement of both the EIA and the Appropriate Assessment processes.

Certain development issues, which are at the plan/programme level such as the modification of the SBA policy on non-military development and the wide interest on renewable energy projects, need to be assessed at the strategic level under the SEA legislation.

15. Objectives and actions

15.1. The generic objective is to maintain or restore all the important features at Akrotiri Peninsula at a favourable conservation status, taking into account economic, social and cultural requirements and local characteristics.

According to the Habitats Directive favourable conservation status of a natural habitat occurs when:

- Its natural range and areas of coverage within that range are stable or increasing
- The specific structure and functions necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future
- The conservation status of its typical species is favourable

A species will be considered to be in a favourable condition when:

- According to its population dynamics, it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- Its natural range within a site is neither being reduced nor is likely to be reduced for the foreseeable future

- There is, and will probably continue to be, an adequate size of habitat to maintain its population in the long-term.

15.2. Proposed development prescription

15.2.1. Legal and policy framework for development

15.2.1.1. Legislation

The main legislation regulating development within the SBAs is the Streets and Buildings Ordinance 7/1984, under which the authorities can define development zones. The only area where such zones have been defined so far within the peninsula is Akrotiri Village with a scope to satisfy the needs of Akrotiri Village, but at the same time safeguard military interest. The environmental interest was taken into account in a very generic manner when the last revision of the zones at Akrotiri took place.

Another example of zoning within the Western SBA s under this legislation is the protection zones around Symvoulas Dam at Sotira.

The Protection of the Environment Ordinance 9/1998 replicates parts of the planning legislation of the RoC with a view to provide for the protection of the natural and man-made environment and the amenity, convenience and welfare of the public. Amongst other provisions the authorities have the power to define white zones in order to protect areas of natural beauty and special character or interest. In these zones existing uses are to remain unchanged and further development is to be limited to the essential needs of the area.

In the Republic the provision for white zones has a temporary character, as more permanent arrangements are made in due course under the development zoning system. No white zones have been defined so far under this Ordinance.

The Environmental Impact Assessment (EIA) Ordinance, 26/2010 provides for environmental approval of projects of a scheduled type, following a relevant assessment of their impact on the environment. This requirement applies everywhere (both within SPAs/SACs and not designated sites) and aims to ensure that decisions on proposed projects are made with a full knowledge of the likely significant environmental impacts and that any negative effects are prevented, reduced or offset, while positive effects are enhanced.

The scope is wider than the nature conservation legislation below and includes impacts on human beings, fauna and flora, soil, air, water, climate, landscape, material assets, cultural heritage etc. The EIA Ordinance is, therefore, an environmental management tool at the project rather than the planning level.

On the other hand, the Game and Wild Birds Ordinance (21/2008) and the Protection and Management of Nature and Wildlife Ordinance (26/2007) (Nature Ordinances) include provisions for designation and management of SPAs and SACs respectively, and impose a need for

an Appropriate Assessment of the implications of projects - the definition of project being wide and including any intervention in the environment - on such sites in view of the site conservation objectives.

The objective is to avoid adverse effects on designated or candidate SPAs/SACs and maintain the integrity of the network of protected sites and their features. The focus in this case is more specific than the EIA process and is based on the ecological features for which the sites have or will be designated.

The Appropriate Assessment (AA) is a useful tool for development planning, as any decision making process at this level needs to be based on this assessment. In effect, all provisions of this management plan are subject to the AA process.

Equally, the management plan, which is one of the measures that can be prescribed for the management and protection of SPAs/SACs under both of the Nature Ordinances, will facilitate the AA process by integrating various issues and addressing the requirement for cumulative assessment.

The AA process is outlined in Annex B, and the scope of the AA requirement covers projects outside the designated/candidate sites, sometimes at a considerable distance, which may have an effect on such sites.

For the purposes of development planning, the boundary is shown on map 117. Development outside this boundary, which may have an effect on the protected sites at Akrotiri Peninsula, will include specific issues such as hydrological modifications, wind farms etc.



Map 117: SPA and cSAC boundary

The Environmental Impact Assessment of Certain Plans and/or Programmes (so called Strategic Environmental Assessment -SEA) Law enacted in the Republic, has not yet been replicated by SBAA. However, it is an essential piece of legislation for the assessment of plans and programmes and builds elements of cumulative impact assessment, which is a requirement of both the EIA and the Appropriate Assessment process. Any zoning or development policy revision would need such an SEA in addition to an Appropriate Assessment.

Various types of development and activities are regulated by other Ordinances as outlined in section 2.

15.2.1.2. Non-military development policy

The policy on non-military development is outlined in section 3. The main provisions in this policy, which aim to satisfy local needs relate to the eligibility criteria, the natural expansion areas and a certain degree of discretion under particular circumstances for development outside these natural expansion areas.

Within the peninsula, Akrotiri Village has been covered in this policy through the designation of the building zones around Akrotiri Village (map 3) and Asomatos through the definition of a natural expansion area (map 118).

The overall policy is based on the undertakings of the UK Government towards the RoC under the 1960 Treaty of Establishment, regarding the administration of the SBAs, and is subject to objections relating to the military interest.



Map 118: Asomatos natural expansion area and proposed expansion area

15.2.1.3. Military interests

Any proposal for development is subject to objections on military interest grounds and each application is scrutinised by the military authorities on a case by case basis.

The current military interest outside RAF Station Akrotiri is outlined in paragraphs 5.11 and 5.12, but these maps are subject to review and modification due to changes in operational requirements and standards. In addition, the safeguarding maps do not include all military interests, such as for example restrictions for radar and other signals which require specific studies depending on the nature of each development proposal.

15.2.2. Land ownership and aspirations for development

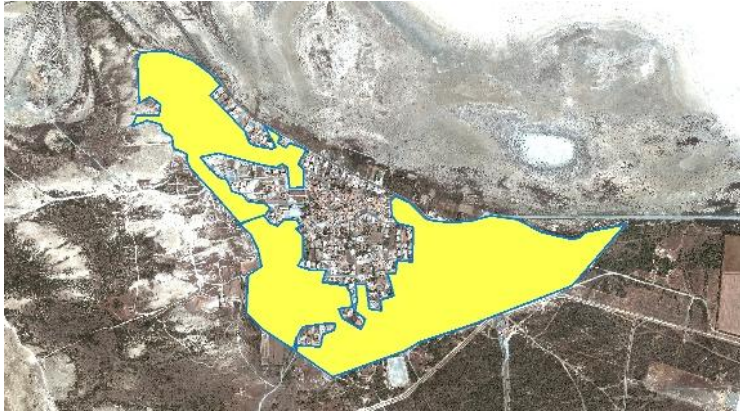
Besides Crown (Forest, Salt Lake, Hali) land and military controlled sites, the peninsula includes private and communal land, with existing or potential aspirations for development. There is also extensive interest for particular projects on all types of land ownerships – Crown, private and communal, as shown in paragraph 15.2.3.4.

15.2.2.1. Private land

15.2.2.1.1. Private land around Akrotiri Village has all been included in zoning for development as shown in map 3. A very big part of the land with development prospective under the current zoning has not been developed yet as shown in map 119.

Development of this land can accommodate more than double the population of Akrotiri Village, satisfying the local housing needs for the foreseeable future. At the same time, the increased population will put more pressure on the natural environment with additional human pressure.

The envelope of land within the current building zones, in the past included Crown land, which was parcellated into building plots for needy families as shown in 120. There is also much land, which on older cadastral maps was shown as Crown land (Hali) but now appears to be private. Also, as outlined in section 14, much Akrotirian non-domestic development has been encroaching on forest land, mainly in the form of sheepfolds, storage areas, sporting facilities etc.



Map 119: Undeveloped area



Map120: Building plots for needy families

15.2.2.1.2. Church land

Church land comprises an estate owned by the Bishopsrics of Limassol and Kition. A big part of this estate has been turned into agricultural land with citrus and other plantations, whereas the rest of it remains in a semi-natural condition of high ecological value as explained in sections 6 and 7.

The plantations include an artificial pool with SPA interest, whereas most of the natural habitat area is included in the Akrotiri Wetlands SPA. This land includes an area which was quarried in the past and an Environmental Centre. Part of this land in the south-eastern side, has been used as a security buffer for RAF Station under an agreement with the owners.

The only expressed interest for development other than agricultural on this estate has been an application by the Electricity Authority of Cyprus and the Bishopric of Limassol for a thermal-solar power plant and the interest of the Bishopric of Kition for a similar project.

15.2.2.2. Communal land

15.2.2.2.1. Zakaki Merra land lies within Cherkez Chiftlik. Zakakians have communal rights on this land, but the actual land ownership and general legal status needs to be confirmed. The rectangular area in the north-eastern part, adjoining Limassol Port is a result of reclamation from port dredging operations and its status also needs confirmation.

As outlined in sections 6 and 7 the ecological value of this whole area is very high. At the same time, this area is subject to significant impact from human activities as discussed in sections 8 and 14. The human activities in this area have passed the carrying capacity of the area and have been affecting the integrity and character of the SPA and the candidate SAC.

Numerous applications and expressed interest for development have been rejected on environmental grounds in the past, including a public utility and a private desalination plant, the relocation of the Limassol zoo, football pitches, beach restaurants etc. The area has a lot of potential for managed eco-tourism and sustainable recreation due to its inherent ecological and wilderness value and its proximity to Limassol.

15.2.2.2.2. Akrotiri Merra is owned by the Community of Akrotiri and is regulated by the Akrotiri Village (Special Provisions) Ordinance, 3/1966. The land had been subjected to heavy quarrying in the past which has exacerbated the impacts from the construction of Kourris dam and other factors contributing to the erosion risks of the peninsula.

Big parts had been acquired for military installation purposes. Akrotiri Merra is now used for grazing and reed collection.

Many applications for development had been rejected in the past on environmental or military grounds. The Merra Committee also rejected various proposals such as for the relocation of animal husbandry units. The only occasion where the provisions for land use change were applied, was for quarrying sand and gravel in part of the Merra from the mid-50s until the late-80s. Akrotiri Merra has high ecological value as described in this plan. At the same time, it provides opportunities for eco-tourism, research and education due to its inherent ecological value and the proximity to Akrotiri Village.

15.2.3. Management principles and proposals for development

15.2.3.1. Statutory requirements and assessment processes

Development, including planning for development is subject to the statutory requirements outlined in section 15.2.1 above. The basic principles in the assessment processes which also need to be built in the management approaches are:

- The conservation objectives for the designation interest for the SPAs/SACs.
- The ecological integrity and character of the SPAs/SACs

The SPAs have already been designated and their conservation interest and objectives are more definite than the ones for the SACs, which have not yet been designated. The precautionary principle is applied in respect of the candidate SACs under Admin Sec's policy statement of 2007. However, it is now essential to proceed with the designation process, which will confirm the designation interest and conservation objectives for the SACs as well. This will facilitate any future planning process for development.

15.2.3.2. Relationship of development with conservation interest and objectives

15.2.3.2.1. Direct habitat loss

15.2.3.2.1.1. Habitat loss for the designated SPA and the bird interest

All natural habitat areas within the designated SPAs of Akrotiri Wetlands and Akrotiri Cliffs are indispensable for most of the SPA designation birds and there can be no significant loss of such habitat.

The northern part of Akrotiri Wetlands SPA consists of man-made habitat, which is mainly agricultural land. The designation interest in this part is confined to the Red-footed falcon - which uses the area mainly during the autumn migration - although the habitat is used by other birds of the designation such as Eleonora's falcon and other raptors as well as the Bee-eater.

The Red-footed falcon uses other agricultural area north and south of the Salt Lake, which has not been designated but which needs to be considered under a management regime in terms of the habitat needs of this species, including the flexibility for potential habitat loss.

The SPA designation did not cover completely the habitats used by the following SPA qualifying birds, due to the lack of information: Pallid harrier, Marsh harrier, Bee-eater, Eleonora's falcon, Peregrine falcon, Stone curlew and Cyprus warbler.

The areas with suitable habitat for these birds include RAF Akrotiri, Forest land south of Akrotiri Village, the Church land and the agricultural land north-west of Fassouri. The areas within RAF Akrotiri, the Forest land south of Akrotiri and part of the Church land overlap with the SAC interest, but the rest of the Church land and the agricultural land north-west of Fassouri Marsh have no SAC interest.

Any considerations for development in these areas must take account of this bird interest.

15.2.3.2.1.2. Habitat loss for the candidate SAC and its associated interest in habitats and species.

The natural habitats proposed for SAC designation include most of the peninsula, excluding built-up areas and man-made habitat (see map 2). The proposed SAC habitats include priority habitats which are strictly protected.

All the SAC habitats of the peninsula are shown in context with the rest of Cyprus in maps 12-36. Any habitat loss (non-priority habitats) in development planning should take account of the importance of the particular habitat in the Cyprus context, the habitat quality, the sizes involved and location, which is of primary importance for the consideration of habitat fragmentation.

Planning for development should also take account of the direct impact on the habitat of important species – other than birds covered in 15.2.3.2.1.1. above (flora, reptiles, mammals, amphibians, invertebrates and fish), which are outlined in sections 6 and 7. Priority species are afforded strict protection and the other important species should be considered in context with their importance in the Cyprus context.

15.2.3.2.1.3. Integrity/character

The integrity and character of the designated/candidate sites is a generic parameter which needs to be considered in any development project or plan. Integrity is defined in Annex B but as a general rule, development should amongst other considerations avoid habitat fragmentation and promote concentrated rather than scattered human presence, with appropriate buffer zones to sensitive features. A rule of thumb would be to accommodate local development needs within or adjoining existing areas such as the built-up area of Akrotiri and Asomatos Villages.

15.2.3.2.1.4. Indirect impact

Development planning needs to take account of indirect impact on the designation features and objectives. Besides the immediately obvious impact - such as access, pollution, light, noise, introduction of alien invasive species, hydrology alteration etc - development increases human pressure in different forms.

Residential and other development in or near wetlands has an inherent conflict of nuisance and health risk to humans from pests such as mosquitoes, rats etc. The issue of mosquitoes has been highlighted recently in numerous occasions, including the increased activity of the beach restaurants at Lady's Mile, the operation of My Mall and the plans for the Golf Courses north of the Salt Lake, putting pressure for more pest control measures.

Also, residential development in or near SPAs, increases recreational and other human activities, which, amongst others, have a significant impact on nesting birds. According to literature, a major issue is the disturbance of visitors to ground nesting birds, especially through walking and/or training of dogs. A useful case study which demonstrates these issues is the Thames Basin Heaths SPA and the associated development plans, summarised in Owen (2007).

15.2.3.2.1.5. Land morphology

Planning for development needs to consider various parameters which in lowland areas create high risks, which are exacerbated by climate change, including erosion, flooding and sea inundation. At the same time, these factors in many cases form crucial functions of the ecosystem. The most vulnerable area to these processes/risks is the middle zone of the peninsula including Akrotiri Merra, Zakaki and Lady's Mile.

15.2.3.3. Proposed general principles for development planning

The wetland nature of the peninsula and environmental interest in the area create specific requirements for the management of development, but at the same time offer opportunities for sustainable development.

The statutory requirements for assessment of cumulative impacts and consultation with stakeholders can be addressed under an integrated approach, which will define the basic principles for the future of the area, with a view to achieve as much agreement as possible.

Initial proposals for such principles can include the following:

Subject to conservation and military restrictions, priority to development will be given to local community needs, environmental education-information-research and eco-tourism initiatives. Under this principle, development not-relating to the needs of the area on private land will be given lower priority, and such proposals on Crown land will have the lowest priority.

15.2.3.4. Outstanding applications for projects

A list of projects is shown below which includes the ones for which a final decision has not been made yet.

- Solar thermal project at the land belonging to the Bishopric of Limassol
- Solar thermal project at the land belonging to the Bishopric of Kition
- Tarmacking of Lady's Mile track by the Municipality of Limassol
- Tarmacking of track from the Monastery of the Cats to Arab's Gate at Lady's Mile
- Undersea cable system at Lady's Mile by PRIMETEL
- Photovoltaic projects at Akrotiri Merra
- Photovoltaic projects within the Fassouri farmland
- Replacement of part of the irrigation pipe serving the Bishop's Farm
- Basketball and volleyball pitches within Akrotiri Forest
- The extension of stacking facilities of the Ports Authority
- Proposed Green Spot at Cherkez Tsiflik

Some projects have been rejected at the enquiry level on generic environmental grounds, as a matter of policy – in the lack of specific legislation and processes at the time, such as wind turbines at various locations within or near the peninsula, water skiing within Akrotiri Merra lagoons, the relocation of the Limassol Zoo at Zakaki Merra etc. Option studies for other projects, such as the Episkopi Desalination Plant, excluded the whole of the coastline of the peninsula (excluding RAF Station), on environmental grounds.

Other projects, such as the development of the two Pluto antennae, have created much controversy and were approved under an EIA process in the lack of nature legislation at the time, based on military/security interest, with extensive mitigation and (still ongoing) compensation. A number of applications for renewable energy projects are still pending decision. Currently there is no definite policy on renewable energy development within the SBAs.

The decision on some of the proposed projects, such as the upgrading of Lady's Mile track, has been deferred, at the EIA stage, for further consideration under this management plan.

Some projects or project types have been included in Cyprus-wide strategic environmental assessments, such as the Zakaki Green Spot and the EAC Thermal-solar Plant. There has been a consistent principle to these SEAs, namely to preclude development in SPA/SAC sites.

Proposed projects are based on a piece-meal approach, which needs to be integrated under the management plan. An example of such approach is the tarmacking/upgrading of sections of the Lady's Mile – Akrotiri Village track. This started with tarmacking the part from

Akrotiri Village to the Monastery of St Nicholas based on the Monastery's visitor interest, included the pressure for upgrading/tarmacking the part from Limassol to the southern end of Lady's Mile for the benefit of Lady's Mile visitors, and the pressure to tarmack 400 metres past the Monastery, whereas there was expressed longer-term interest and intention from various parties to eventually join Akrotiri Village and RAF Station to Limassol via Lady's Mile.

Another example is a number of separate applications from Akrotiri Village for infrastructure (roads, animal husbandry, workshop area, sports fields etc), within Forest and other Crown land, without an overall plan. The same applies to various other applications for both public and private infrastructure (Green spot, storm sewers, renewable energy etc) which are all based on the availability of low cost, undeveloped land.

This piece-meal approach is in conflict with the statutory requirement for cumulative impact assessment. The assessment of each of the projects needs to take account of the cumulative impact of all other projects, plans and activities.

There are significant weaknesses in the assessment of cumulative impacts, which have been evident in the decision-making process of various projects in the area. These weaknesses are exacerbated by trans-boundary issues between the SBAs and the RoC, examples of which has been the recent procedure for the approval of the big golf course development north of the Akrotiri Salt Lake and the storm sewer at Zakaki. The assessment of the golf course development in particular clearly stated that it would not consider cumulative impacts and that a statutory Appropriate Assessment was not necessary.

The lack of statutory Appropriate Assessment requirement is also a major weakness in the process of revision of development zones north of the peninsula in the RoC. The storm sewer development on the other hand, is an example of a project that was not referred to the Appropriate Assessment process until it was too late to consider alternative options or major modifications, as most part of the sewer within the RoC had been completed.

In many occasions there is also a generic scoping weakness to recognise in-combination effects at an early stage. An example of this has been the initial intention to regularise the restaurants at Lady's Mile and extend their operating hours, without taking into account the implications on the infrastructure (access, parking etc), the temporal, spatial and scale extension of human disturbance on protected species and the increased need for mosquito control. These parameters have now been recognised and appropriate procedures will be applied.

Another major, inherent difficulty in the process is the inappropriate consideration of alternative options by project proponents. Alternative options are generally considered, when the process has progressed considerably, if and when issues of significant environmental impact arise. The tendency then is to try to justify the decision to propose the particular project in the particular location by finding excuses against other options. This is evident in most project applications in the area, the main driving factor of which is availability of low cost, undeveloped

land. The correct process would have been to consider all options from the outset and throughout the whole process in an iterative manner with a view to avoid impact on SPAs/SACs.

These issues in combination with the difficulty to control illegal/inappropriate activities have taken most sensitive areas close to or beyond their carrying capacity.

Based on all the above the options for the way forward for the consideration of projects include:

1. Consideration of each project under the existing statutory requirements. This can include guidelines on how likely it is to approve/reject certain types of projects.
2. Putting all proposed projects on hold through temporary white zoning, until a general Appropriate Assessment is carried out on all projects, activities and development planning and overall agreement is reached on development under the management plan.

Each of the options presents the following characteristics:

Option 1	In line with existing statutory requirements
Option 2	Can be justified under the precautionary principle and statutory requirements for in-combination effects
Option 1	Strict management is required to ensure addressing of in-combination effects
Option 2	Will address in-combination effects
Option 1	Separate decisions may favour certain projects (e.g. ones where design and process has progressed or on a first come first serve basis) and disadvantage others
Option 2	All projects will be assessed on an equal basis or at least, based on a set of consistent criteria
Option 1	The decision on progressed projects will not be delayed
Option 2	Progressed projects will be delayed, but the whole process will be simplified and facilitated in the longer-term
Option 1	Overall agreement and commitment is not ensured
Option 2	Overall agreement and commitment is ensured
Option 1	Future projects can be accommodated although may be disadvantaged in

Option 2	terms of cumulative impact, but zoning can clarify opportunities and restrictions Future isolated projects will not generally be accommodated, but zoning can clarify opportunities and restrictions. Also, stakeholders can be invited to confirm their long-term aspirations before the general AA is carried out.
Option 1 Option 2	No, or limited opportunity to combine similar projects There will be opportunities to combine similar projects in order to meet the requirements for approval
Option 1 Option 2	Application of the precautionary principle can lead to rejection of projects due to the uncertainty involved with other projects and their combined impact Uncertainty will be resolved to a large extent

The following guidelines, which are in line with the proposals in previous sections can facilitate the decision-making process for proposed projects, subject to the type of management approach to be implemented:

- Subject to statutory requirements, the non-military development policy, conservation and military restrictions, highest priority will be given to local community sustainable needs, environmental education, information and research, as well as sustainable eco-tourism, whereas other projects on private land will be given lower priority and on Crown land the lowest priority.
- Certain types of projects, such as tall wind-turbines will be rejected (due to the clear conflict with bird flight paths) from the outset.

15.3. Proposed actions

s/n	Action	Details	Lead by	Priority	Target date	Resources /cost
1.	Clear ditches at Fassouri Marsh and Zakaki Pool and install weirs in order to control water flow to the lake Restore flow in the Pluto and water dispersion to the lake	<ul style="list-style-type: none"> • Work is planned for 2012-2013 		1		
2.	Install environment interpretation signs	<ul style="list-style-type: none"> • Work has been completed 		1		
3.	Establish a system to protect potential archaeological interest from projects	<ul style="list-style-type: none"> • Prepare a map with sensitive areas where watching briefs are required 		1		
4.	Ensure the maintenance of the Bishop's pool to sustain its conservation interest	<ul style="list-style-type: none"> • Monitor the area • Make a management order if necessary 		1		
5.	Co-ordination with the RoC Environment Department to agree a consistent Appropriate Assessment process.	<ul style="list-style-type: none"> • A draft SBAA guideline was sent for stakeholder comments on 21/3/12 		1		
6.	Form a joint SBAA/RoC/Other stakeholders committee for the implementation of the management plan.	<ul style="list-style-type: none"> • Organise a meeting with relevant stakeholders once the EMP is agreed and finalized. 		1		
7.	Ensure that SEAs of RoC cover the SBAs	<ul style="list-style-type: none"> • Discuss with RoC Environment Department 		1		
8.	Issue Management Orders	<ul style="list-style-type: none"> • Orders can be issued in stages, starting 		1		

	under the Nature and Birds Ordinances	with the ones that have highest priority and need least consultation. The second option is to issue orders in one batch after due consultation				
9.	Co-operate with relevant stakeholders to deal with the trailer parking problem at Zakaki	<ul style="list-style-type: none"> • PWD¹⁶ have undertaken the re-instatement of the illegal parking area north of the Zakaki Pool (200 x 15 mtrs) to its natural habitat and protection through installation of barriers, under the EIA/AA for their storm sewer project. •The Ports Authority are planning to extend their stacking facilities under a wider master plan, which should address the trailer parking issue. •SBAP have been issuing fixed penalties to offenders. •Issue a management order prohibiting parking and driving of trailers. •Agree a plan with relevant authorities for the relocation of the trailers. 		1		
10.	Monitor conditions imposed on Business Licences granted to restaurant owners at Lady's Mile and revocation where necessary of the Licences.	<ul style="list-style-type: none"> • Monitoring and reporting by SBAP, environmental wardens and field assistants. 		1		
11.	Regularise restaurants at Lady's Mile and ensuring that robust enforcement mechanisms are in place to address any breaches.	<ul style="list-style-type: none"> • Undertake an appropriate assessment in relation to the periods of operation and closing hours. • Ensure that building permits force restaurant owners comply with all the conservation requirements. 		1		

12.	Ensure retrieval of nets illegally cast in the sea.	<ul style="list-style-type: none"> •Address health and safety aspects involved in the retrieval. •Address infrastructure and training issues for retrieval of nets. 		1		
13.	Prepare and implement an action plan for the control of acacia.	<ul style="list-style-type: none"> • Map Acacia (started) • Prioritise areas to be controlled • Develop methodology • Long-term implementation/monitoring • Work on all above has been included in the works program through consultants for 2012/13 		1		
14.	Construct the permanent AEEIC.	<ul style="list-style-type: none"> •Land has been purchased •The plans, with an indicative cost of construction, have been completed. •A business case for the construction has been accepted by CJO.¹⁷ 		1		
15.	Publicise the licensing procedures for undertaking research and surveys within the SBAs.	<ul style="list-style-type: none"> • Upload the procedures on the SBAA website. 		1		
16.	Assess the data on the candidate SACs and formally designate the candidate sites.	<ul style="list-style-type: none"> •Carry out favourable condition monitoring of the cSAC. The assessment shall include both habitats and species as listed in the Schedules of 'The Protection and Management of Nature and Wildlife Ordinance 2007'. Work planned for 2012-2013. •Evaluate the data collected through various studies and amend where necessary the proposed boundaries. Marine areas which support habitats qualifying for designation to be looked at as well. •Prepare maps and relevant citations with 		1		

		the proposed SACs. •Undertake a formal consultation process. •Designate the candidate SACs.				
17.	Adopt regulations on the Appropriate Assessment.	•Co-operate with the RoC Environment.		1		
18.	Mirror the RoC Strategic Environmental Impact Assessment Law within the SBAs.	•Prepare advice to the Chief Officer outlining the necessity of replicating the Law in the Areas.		1		
19.	Enforce prohibitions on racing activities, car parking on the foreshore, dog walking off-leash, and dog training.	• Undertake an information campaign through the SBAP, Customs and the Environment Department. • Place signs where necessary. •Enforcement		1		
20.	Assess the impact of the archaeological excavation at Akrotiri on important features.	• Monitor the progress of the excavation and assess any proposed intervention on natural habitats and species. •Agree a long-term plan for the excavation to ensure that there is no significant impact on the conservation interest of the area.		1		
21.	Assess the effectiveness and possible impacts of mosquito control	•Currently investigating options which do not have a significant impact on the wetlands. •Establish an integrated pest control plan for the peninsula. •Co-operate with all relevant stakeholders to ensure a holistic coordinated approach to pest control.		1		
22.	Promote legal protection of the Red Book plants	• Discuss the possibility of including the red book plants in the Schedules of the Nature Ordinance with the RoC Department of Forests and the Environment Department.		1		
23.	Assess the requirements of	•Undertake surveys under agreed		1		

	Red-footed falcons in the Fassouri plantations and the surrounding habitat for management purposes	methodology with all stakeholders, to inform further management.				
24.	Carry out a public communication campaign about the impact of alien invasive species	<ul style="list-style-type: none"> • Organise the campaign in cooperation with the RoC Department of Forests. • Make a presentation to local communities and other internal and external stakeholders. 		1		
25.	Agree a comprehensive policy and code of practice on alien invasive species	<ul style="list-style-type: none"> • Discuss and agree an action plan with the RoC Department of Forests and Environment Department. 		1		
26.	Review the situation with pine moth spraying	<ul style="list-style-type: none"> • Assess the impact of pine moth and discuss further with the Department of Forests. 		1		
27.	Continue and intensify campaigns against illegal fishing	<ul style="list-style-type: none"> • Maintain positive contact with local fishermen, reminding them of their obligations and encouraging them to report cases of illegal fishing. • Continue joint RoC/SBAA campaigns. • Support sustainable fishing in co-operation with the RoC. 		1		
28.	Continue co-operation of AEEIC with local and international academic institutions on environmental research and education			1		
29.	Continue conservation practices for turtle nesting	<ul style="list-style-type: none"> • Continue licensing conservation practices insisting on minimal intervention. • Organise training sessions where necessary. • Discuss the scope of SBAA reporting to IUCN 		1		

30.	Continue water-bird surveys	•Carried out by the Game Fund and Birdlife		1		
31.	Continue the survey to assess the impact of fishing on sea turtles and decide appropriate management	•Undertake joint SBAA/RoC aerial surveys in the Republic. •Confirm the importance of SBA waters in terms of turtle interest and decide appropriate legislative and policy measures.		1		
32.	Continue the education programs at AEEIC			1		
33.	Continue surveys for nesting <i>Falco eleonora</i>	•Create calendar with specific actions.		1		
34.	Continue the Demoiselle crane surveys	•Create calendar with specific actions.		1		
35.	Send out draft EMP for consultation	• Send draft by mid September 2012.		1		
36.	Review consultation feedback	•Complete review by the end of December 2012.		1		
37.	Establish and publish SBAA policy on renewable energy projects.	•Decide policy. •Publish policy.		1		
38.	Review the management of forest land after fires in co-operation with the Forestry Department	•		1		
39.	Prepare action plans for important plants as outlined in the EMP	•		2		
40.	Prepare action plans for important habitats as outlined in the EMP	•		2		
41.	Prepare action plans for important faunal species as outlined in the EMP	•		2		
42.	Pursue the sewage	•Explore all options in co-operation with		2		

	treatment issue for Akrotiri Village	RoC.				
43.	Establish a monitoring system for Red Book plants at Akrotiri	<ul style="list-style-type: none"> •Part of the wider monitoring plan commissioned to consultants. •Create a calendar with dates and actions for all the plants that need monitoring. 		2		
44.	Establish a monitoring and reporting system of the important features in the scope of the conservation objectives.	<ul style="list-style-type: none"> • A relevant study has been commissioned to consultants. The relevant report has been completed and it needs to be reviewed with a scope to decide further work and actions. 		2		
45.	Promote basketry	<ul style="list-style-type: none"> • Promote training of younger people. • Promote sales of basketry items. 		2		
46.	Monitor the success of habitat transplantation within Pluto			2		
47.	Review and approve the grounds maintenance activities within the aerial farms	<ul style="list-style-type: none"> • Co-operate with the relevant military Departments and contractual organizations. 		2		
48.	Management of encroachments in RAF Akrotiri Station e.g. Beach clubs, golf course, racing track etc	<ul style="list-style-type: none"> • Description of activities are covered in the IRMP. •Where required carry out Appropriate Assessments. •Impact of all activities to be assessed with a view to impose conditions. 		2		
49.	Promote managed visits to antiquity sites within RAF Akrotiri Station	<ul style="list-style-type: none"> • Organise the visits through the AEEIC. 		2		
50.	Investigate the need for promoting fossil protection	<ul style="list-style-type: none"> • Look at relevant RoC and UK legislation. 		2		
51.	Carry out a condition survey of antiquity sites	<ul style="list-style-type: none"> • Identify potential natural and human impact which needs to be managed. 		2		

52.	Designate a dog bathing area	<ul style="list-style-type: none"> • An area has been provisionally identified south of Curium. • Amendment of Foreshore Ordinance to permit dog bathing and making of Order under the Ordinance to designate the area. 		2		
53.	Ensure that Community Councils comply with all obligations under the Dogs Ordinance, including creating premises for keeping stray dogs.	<ul style="list-style-type: none"> • Meeting with Akrotiri, Zakaki, Asomatos and Tserkez Communities to discuss obligations under the Dogs Ordinance • Agreement on the creation of premises. • Discuss the possibility of creating common premises for all three communities. 		2		
54.	Block access points to address the fly-tipping problem.	<ul style="list-style-type: none"> • Address land ownership and access requirement issues. • Prioritise which areas need to be blocked. • Address blocking methods. • Consider the issue under a general access/recreation plan. 		2		
55.	Blocking of access points to address the off road racing issue.	<ul style="list-style-type: none"> • Prioritise which areas need to be blocked. • Decide blocking methods. • Consider the issue under a general access/recreation plan. 		2		
56.	Blocking of access points to address the unregulated pedestrian/vehicle access to sensitive habitat.	<ul style="list-style-type: none"> • Prioritise which areas need to be blocked • Decide blocking methods. • Consider the issue under a general access/recreation plan. 		2		
57.	Review hunting areas to restrict hunting at the area south of the M1 road.	<ul style="list-style-type: none"> • A proposal has been sent to the RoC Game Fund for views. 		2		
58.	Standardizing processes for military training and other activities	<ul style="list-style-type: none"> • Details of planned and/or recurring training activities to be included in the IRMP. • All activities to be covered by the 		2		

		Appropriate Assessment process.				
59.	Supply water to Akrotiri Aquifer from Kourris dam and other sources to sustain the aquifer and Fassouri Marsh			2		
60.	Explore possibility of local community eligibility for EU agro-environmental subsidies	<ul style="list-style-type: none"> • Clarify the eligibility criteria with the relevant RoC Departments. 		2		
61.	Prepare and implement a coastal zone management plan.	<ul style="list-style-type: none"> • Explore the possible involvement of the coastal engineering section of the RoC Public Works Department. 		2		
62.	Monitor the impact of reed proliferation on the conservation features at Fassouri Marsh	<ul style="list-style-type: none"> • Part of the wider monitoring plan commissioned to consultants. • Consider various options for controlling reeds, including controlled fires, cutting (and using for basketry, biomass, composting etc). 		2		
63.	Finalise the water level management plan and implement recommendations.	<ul style="list-style-type: none"> • Consolidate reports, establish whether more work is necessary and discuss recommendations with relevant RoC Departments. 		2		
64.	Create infrastructure for education purposes: bird watching towers, facilities for visitors etc at Fassouri Marsh and Zakaki Pool.	<ul style="list-style-type: none"> • Some infrastructure has been agreed as mitigation and/or compensation for projects approved, such as the storm-sewer at Zakaki and land consolidation at Fassouri. • Prepare a full plan for the required infrastructure. 		2		
65.	Co-operate with relevant RoC Departments and	<ul style="list-style-type: none"> • Explore initiatives with local communities, and the Cyprus Tourism Organisation. 		2		

	NGOs to promote ecotourism at Akrotiri.	<ul style="list-style-type: none"> •Promote ecotourism programmes at the permanent AEEIC. 				
66.	Monitor the construction of the desalination plant to ensure compliance with conditions imposed.	<ul style="list-style-type: none"> •Continue regular monitoring of the construction. 		2		
67.	Address the sewage treatment requirements of the restaurants at Lady's Mile.	<ul style="list-style-type: none"> •Impose a condition on the building permit for the introduction of biological treatment systems. 		2		
68.	Create a register of research, studies and surveys with a view to further inform the management plan.	<ul style="list-style-type: none"> • Create a register and populate with existing information. •Forward the register to relevant stakeholders with a request to add any additional information. • Upload the register on the SBAA website with a request to stakeholder to provide information to the SBAA Environment Department on any new studies/research undertaken. •Identify gaps for scientific knowledge and information and send the list to local and UK universities who can use it for dissertation proposals. •Update the register on a regular basis. 		2		
69.	Publish SBAA policy on Foreshore Management and Water sports.	<ul style="list-style-type: none"> •Publicise through the Area Office and SBAA website. 		2		
70.	Prohibit vehicular and/or pedestrian access on the foreshore and other sensitive areas through management orders.	<ul style="list-style-type: none"> • Make the relevant orders. • Undertake an information campaign through the SBAP, Customs and the Environment Department. • Place signs where necessary. 		2		

		<ul style="list-style-type: none"> • Enforcement 			
71.	Consolidate and analyse the results of the bird strike surveys on antennae and recommend further action.	<ul style="list-style-type: none"> •A relevant study will be commissioned by SBAA in 2012/13 	2		
72.	Map marine habitats.	<ul style="list-style-type: none"> •Cover the areas which will not be covered by the RoC Survey, with emphasis on marine turtle habitat. 	2		
73.	Regularise air model flying at Lady's Mile and monitor compliance.	<ul style="list-style-type: none"> •Assess the impact of the activity •Update relevant legislation. •Issue permits with restrictions to the Limassol air model club. •Monitor compliance 	2		
74.	Intensify awareness campaigns against fly-tipping.	<ul style="list-style-type: none"> •Organise campaigns in cooperation with the Area Office, community councils, Department of Forests and NGOs. • Undertake the campaigns after the blocking of the access points. 	2		
75.	Intensify awareness campaigns against poaching.	<ul style="list-style-type: none"> •Organise presentations in cooperation with the Game Fund and Birdlife Cyprus for the local communities and the Akrotiri Hunting Association. •SBAP and Environment Department to inform hunters in the area of poaching issues and penalties under the Ordinance. 	2		
76.	Monitor and manage the operation of the Akrotiri Fishing shelter.	<ul style="list-style-type: none"> •Monitor the area to ensure that no illegal dredging or other works take place. •Inform the Fisheries Department and Akrotiri Community Council of the statutory requirements for any works at the shelter. •Ensure that the fishing shelter does not exceed its current capacity. 	2		
77.	Manage boating/fishing	<ul style="list-style-type: none"> •Take statutory and other measures to 	2		

	activities close to Akrotiri cliffs.	protect the conservation interest on the cliffs.				
78.	Monitor and assess fox predation on turtle nests	<ul style="list-style-type: none"> • Implement nest protection measures from predation under expert advice, where necessary. 		2		
79.	Monitor the Monk seal interest at Akrotiri cliffs	<ul style="list-style-type: none"> • Monitor the interest with minimum disturbance. 		2		
80.	Study the migration/hibernation of the European Tree Frog and consider using the species as a key indicator for monitoring wetland quality	<ul style="list-style-type: none"> • Part of the wider monitoring plan commissioned to consultants. 		2		
81.	Continue and systemize the vulture studies	<ul style="list-style-type: none"> • Create a calendar with the dates and actions that need to be undertaken esp. in relation to confirming nests and the fledging period. • Keep consistent records of all vulture sightings. • Upload a record sheet on the SBAA website for external stakeholders to populate. • Continue cooperation with the Game Fund, Department of Forests and Birdlife Cyprus and participate in the agreed actions. 		2		
82.	Establish a local access plan for the orchid site at Agiofyla			2		
83.	Study the impact of foxes, crows and stray dogs on birds, especially bird nesting at the Peninsula	<ul style="list-style-type: none"> • Undertake a survey in cooperation with the RoC Game Fund. 		2		

84.	Establish more systematic surveys for nesting Kentish plovers, Ferruginous ducks, Black-winged stilts, Spur-winged plovers and Shags for management purposes	<ul style="list-style-type: none"> • Create a calendar with important dates and actions for each bird species and implement actions. • Secure funding for surveys where necessary. • Consolidate results and draw up recommendations in co-operation with the Game Fund and Birdlife Cyprus. 	2		
85.	Carry out surveys to assess the status of Stone curlew and Cyprus warbler.	<ul style="list-style-type: none"> • Agree a methodology with the Game Fund and Birdlife Cyprus. • Secure the necessary funding. 	2		
86.	Assess the habitat requirements for Pallid harrier, Marsh harrier, Bee eater, Eleonora's falcon, Peregrine falcon, Stone curlew and Cyprus warbler	<ul style="list-style-type: none"> • 	2		
87.	Establish wildlife study groups at AEEIC	<ul style="list-style-type: none"> • Discuss scope with relevant stakeholders to decide the way forward. 	2		
88.	Assess the impact of forest road / fire break maintenance in the Eucalyptus forest on Red Book plants	<ul style="list-style-type: none"> • Discuss with the Department of Forests. 	2		
89.	Survey habitats of <i>Acanthodactylus Schreiberi</i> for management purposes	<ul style="list-style-type: none"> • Any studies should be in context with the rest of Cyprus. 	2		
90.	Carry out baseline studies for invertebrates and their role in the ecosystem	<ul style="list-style-type: none"> • Agree methodologies with local experts. • Secure the necessary funding. 	2		
91.	Monitor the enforcement of	<ul style="list-style-type: none"> • Co-operate with relevant Roc agencies. 	2		

	the provisions of the Code of Good Agricultural Practice					
92.	Continue the raptor surveys	•Create calendar with specific actions.		2		
93.	Consider the role and management of <i>Pinus halepensis</i>	•Co-operate with the Department of Forests.		2		
94.	Carry out further surveys and monitoring for roosting sites and habitats of bats	•Create a calendar with important dates and actions. • Organise surveys in cooperation with the RoC Department of Forests.		2		
95.	Monitor the effectiveness of containing cats at the cat sanctuary	•Monitor the premises on a regular basis and decide further action where necessary.		2		
96.	Research the biology/ecology of <i>Aphanius fasciatus</i> and consider using the species as a key indicator of wetland quality	•Part of the monitoring study commissioned to consultants.		2		
97.	Monitor the silting of Akrotiri Salt Lake	•Part of the wider monitoring plan commissioned to consultants.		2		
98.	Carry out bird - habitat association studies	•Discuss the scope with the Game Fund and Birdlife.		2		
99.	Trial the success of bat boxes	•Discuss with the Department of Forests.		2		
100.	Investigate local status, biology and ecology of <i>Crocidura russula cypria</i> , <i>Bufo viridis</i> , <i>Ocyropode cursor</i> , <i>Telescopus falax</i>	•Discuss with relevant RoC stakeholders.		2		
101.	Survey the interest of Lesser Horseshoe and Greater Horseshoe bats	•Discuss with the RoC Department of Forests.		2		

102.	Continue monitoring of Schreiber's bat colonies	<ul style="list-style-type: none"> •Co-operate with the Department of Forests. •Create calendar with specific actions. 	2		
103.	Consider further work on sand dune stabilization	<ul style="list-style-type: none"> •Discuss with the Department of Forests 	2		
104.	Assess grazing levels and areas to promote sustainable grazing	<ul style="list-style-type: none"> • Assess positive and negative impacts on nature conservation objectives. • Investigate subsidies availability. 	2		
105.	Explore funding opportunities from EU for the management of the site	<ul style="list-style-type: none"> • Liaise with the relevant RoC Departments. 	2		
106.	Provide policy advice in the event of oil and other spillages which may cause pollution and mirror relevant republican legislation	<ul style="list-style-type: none"> •Mirror the Integrated Pollution Prevention Control Law. •Establish procedures which need to be followed in the event of spillages at sea and at land. 	2		
107.	Monitor Akrotiri Aquifer levels	<ul style="list-style-type: none"> •Part of the wider monitoring plan commissioned to consultants. 	3		
108.	Monitor water (levels and quantity) at Zakaki Pool.	<ul style="list-style-type: none"> •Part of the wider monitoring plan commissioned to consultants. 	3		
109.	Monitor the impact of the Golf Course project in the RoC on Akrotiri wetlands	<ul style="list-style-type: none"> •Part of the project EIA conditions 	3		
110.	Monitor water quality at Akrotiri Wetlands to assess impact from pesticides and fertilizers.	<ul style="list-style-type: none"> •Part of the wider monitoring plan commissioned to consultants. 	3		
111.	Review the management of the Eucalyptus forest and consider replacement with indigenous habitat.	<ul style="list-style-type: none"> • Assess the current role of the Eucalyptus forest and the benefits of re-instating the area with indigenous species. 	3		
112.	Establish a monitoring system for succession in sensitive areas.	<ul style="list-style-type: none"> •Part of the wider monitoring plan commissioned to consultants. 	3		

113.	Control and co-ordinate bird watching to minimize impacts and standardise and consolidate information for management purposes	<ul style="list-style-type: none"> •Co-operate with relevant stakeholders (Game Fund, Birdlife, Forestry etc) to agree the way forward. 		3		
114.	Ensure compliance of fish farms with their licence conditions	<ul style="list-style-type: none"> •Establish with the RoC Fisheries Dept. what monitoring takes place. •Undertake further internal monitoring where necessary. 		3		
115.	Manage the harvesting of natural resources at Fassouri Marsh and the area between the Salt Lake and Lady's Mile.	<ul style="list-style-type: none"> •Assess the positive and negative impact of each activity. •Come up with a sustainable use plan. 		3		
116.	Consider re-instatement of quarried areas at Akrotiri Merra			3		
117.	Promote environmental archaeology	<ul style="list-style-type: none"> •Speak with relevant experts and promote through the AEEIC. 		3		
118.	Extend the European Landscape Convention to the SBAs	<ul style="list-style-type: none"> • Liaise with the AGLA and the Chief Officer. 		3		
119.	Commission a land character assessment for Akrotiri peninsula	<ul style="list-style-type: none"> • Secure funding and find suitable consultant. 		3		
120.	Commission a landscape ecology study for Akrotiri peninsula	<ul style="list-style-type: none"> •Secure funding and find suitable consultant. 		3		
121.	Provide education on archaeological sites and interest	<ul style="list-style-type: none"> • AEEIC to provide the programmes in co-operation with the Community and the Antiquities Department. 		3		
122.	Monitor the success of conservation measures and	<ul style="list-style-type: none"> •Undertake condition surveys for SAC habitats and species 		3		

	management plans in the maintenance of the favourable conservation status of habitats/fauna and flora species included in the SPA/SAC designations	<ul style="list-style-type: none"> • Publish a report on the monitoring every six years. 				
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Priority is a function of risk, management sequence, feasibility (resource availability, practicalities), stakeholder agreement.

16. Monitoring, evaluation and reporting

(To be completed in due course)

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18. Maps

Map Number	Title
1.	Area covered by Management Plan
1a.	Akrotiri Ramsar Site
2.	SAC Habitats
3.	Akrotiri residential development zones
4.	Foreshore protection zone
5.	Development zones north of Akrotiri Peninsula within the Republic of Cyprus
6.	Akrotiri restricted flying area
7.	Hunting areas at Akrotiri Peninsula
8.	Antiquity sites
9.	Akrotiri controlled area
10.	Zone vulnerable to nitrate pollution
11.	Land consolidation
11a.	Military training area at Akrotiri Peninsula
11b.	Military training range within Episkopi Bay
11c.	Safeguarding areas for aerial sites and RAF material transfer buffer
12.	Priority habitats
13.	1110, Sandbanks slightly covered by sea water all the time
14.	1170, Reefs
15.	1210, Annual vegetation of drift lines
16.	1240, Vegetated sea cliffs of the Mediterranean coasts
17.	1310, Salicornia and other annuals colonising mud and sand
18.	1410, Mediterranean salt meadows
19.	1420, Mediterranean halophilous scrubs
20.	1220, Perennial vegetation of stony banks
21.	2110, Embryonic shifting dunes
22.	2120, Shifting dunes along the shoreline
23.	2190, Humid dune slacks
24.	2230, Malcolmietalia dune grasslands
25.	2240, Brachypodietalia dune grasslands with annuals
26.	2260, Dune sclerophyllous scrubs
27.	3140, Hard oligo-mesotrophic waters with benthic vegetation of chara formations
28.	5212, Juniperus formations
29.	5420, Cisto-Micromeretea phrygana
30.	6420, Mediterranean tall-herb and rush meadows
31.	8330, Submerged or partly submerged sea caves
32.	9320, Olea and Ceratonia forests
33.	9540, Mediterranean forests with endemic Mesogean pines
34.	92DO, Thermo-Mediterranean riparian galleries
35.	Sand-beaches-turtle nesting grounds (CY05)
36.	Reedbeds and sedgebeds (CY02)
37.	Important flora
38.	<i>Achillea maritima</i>
39.	<i>Aegilops bicornis</i>
40.	<i>Baldelia ranunculoides</i>
41.	<i>Cistanche phelypaea</i>
42.	<i>Cladium mariscus</i>
43.	<i>Convolvulus lineatus</i>

44.	<i>Coronilla repanda</i> ssp. <i>Repanda</i>
45.	<i>Crypsis factorovskyi</i>
46.	<i>Erodium crassifolium</i>
47.	<i>Euphorbia pubescens</i>
48.	<i>Herniaria hemistemon</i>
49.	<i>Ipomoea imperati</i>
50.	<i>Ipomoea sagittata</i>
51.	<i>Isolepis cernua</i>
52.	<i>Juncus littoralis</i>
53.	<i>Juncus maritimus</i>
54.	<i>Linum maritimum</i>
55.	<i>Lotus cytisoides</i>
56.	<i>Mentha aquatica</i>
57.	<i>Orchis palustris</i>
58.	<i>Pancratium maritimum</i>
59.	<i>Phyla nodiflora</i>
60.	<i>Scirpus lacustris</i> subsp. <i>Tabernaemontani</i>
61.	<i>Serapias aphroditae</i>
62.	<i>Serapias parviflora</i>
63.	<i>Taraxacum aphrogenes</i>
64.	<i>Triplanche nitens</i>
65.	<i>Urtica membranacea</i>
66.	<i>Vulpia brevis</i>
67.	<i>Anthropoides virgo</i> , Demoiselle Crane
68.	<i>Ardea purpurea</i> , Purple Heron
69.	<i>Ardeola ralloides</i> , Squacco Heron
70.	<i>Aythya nyroca</i> , Ferruginous Duck
71.	<i>Calidris minuta</i> , Little Stint
72.	<i>Charadrius alexandrinus</i> , Kentish Plover
73.	<i>Charadrius leschenaultia</i> , Greater sand Plover, and <i>Plegadis falcinellus</i> , Glossy Ibis
74.	<i>Chlidonias leucopterus</i> , White-winged Tern
75.	<i>Circus aeruginosus</i> , Western Marsh Harrier
76.	<i>Circus macrourus</i> , Pallid Harrier
77.	<i>Falco eleonora</i> , Eleonora's Falcon
78.	<i>Falco peregrinus</i> , Peregrine Falcon
79.	<i>Falco vespertinus</i> , Red-footed Falcon
80.	<i>Glareola pratincola</i> , Collared Pratincole
81.	<i>Grus grus</i> , Crane
82.	<i>Himantopus himantopus</i> , Black-winged Stilt
83.	<i>Larus genei</i> , Slender-billed Gull
84.	<i>Merops apiaster</i> , European Bee-eater
85.	<i>Pelecanus onocrotalus</i> , Great White Pelican
86.	<i>Phalacrocorax aristotelis desmarestii</i> , European (Mediterranean) Shag
87.	<i>Philomachus pugnax</i> , Ruff
88.	<i>Phoenicopterus roseus</i> , Greater Flamingo
89.	<i>Tadorna tadorna</i> , Shelduck
90.	<i>Vanellus spinosus</i> , Spur-winged Plover
91.	Cyprus Warbler , <i>Sylvia melanothorax</i>
92.	Stone Curlew, <i>Burhinus oedicnemus</i>
93.	Turtle nesting sites
94.	Schreiber's Fringe-fingered Lizard, <i>Acanthodactylus schreiberi</i>

95.	<i>Acacia saligna</i>
96.	Akrotiri aquifer
97.	Hydrological model
98.	Land ownership
99.	Irrigation
100.	Wells/boreholes
101.	Reservoirs
102.	Roads
103.	Tracks
104.	Access routes
105.	Ports
106.	Off road racing
107.	Air modeling
108.	Dog walking and training
109.	Stray cats and dogs
110.	Illegal trailer parking
111.	Parking areas at Lady's Mile
112.	Fly-tipping
113.	Poaching
114.	Hunting area near Fassouri Marsh
115.	Fishing areas
116.	Planting of alien invasive species
117.	SPA and candidate SAC boundary
118.	Asomatos natural expansion area and proposed expansion area
119.	Undeveloped area
120.	Building plots for needy families

19. Annexes

Annex A: Administrative Secretary's Policy Statement On the Management of Natura 2000 Sites within the SBAs

Annex B: Chart on the Appropriate Assessment process and definition of terms and concepts

Annex C: Chart on the Environmental Impact Assessment process

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Annex A**POLICY STATEMENT ON THE MANAGEMENT OF NATURA 2000 SITES IN THE SBAs**

The following instructions are given to ensure that our obligations to the protection and management of nature and wildlife throughout the SBAs are duly met. These instructions apply to military and non-military projects and/or activities likely to have an effect on a candidate Natura 2000 sites, legally known as Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs) for habitats and species other than birds of European importance.

The current boundaries of the candidate SACs/SPAs are shown on the maps attached. Due to the requirement to collect robust scientific data to confirm these designations the formal designation may not take place for 1-2 years. This confirmation process is likely to exclude some of the existing areas shown and include additional ones which have not yet been mapped. However, we do not anticipate any large scale changes to the broad areas shown.

To ensure the sites' favourable' management until formal designation it will be BFC and SBAA policy to consider the areas of land highlighted on the attached maps as if they were designated. Thus any proposed plan, project or activity, not directly related or necessary to the environmental management of the site, but is likely to have a significant effect, alone or in combination with other plans, projects or activities, on the candidate sites, will be subject to an appropriate assessment. The plan or project/activity can only be approved if it is demonstrated that there will no adverse affect on the integrity of the site. Section 10 of The Protection and Management of Nature Ordinance 2007, describes the legal process to be followed to meet the requirements or the appropriate assessment. The appropriate assessment is independent of any EIA required under the EIA Ordinance.

As you may be aware these measures are necessary to fulfil our obligations to mirror the RoC legislation and meet our own commitments to the Bern and Ramsar Conventions and MOD's sustainable development policies. The SBAA Environment team will be organising appropriate training in the next few months on these requirements.

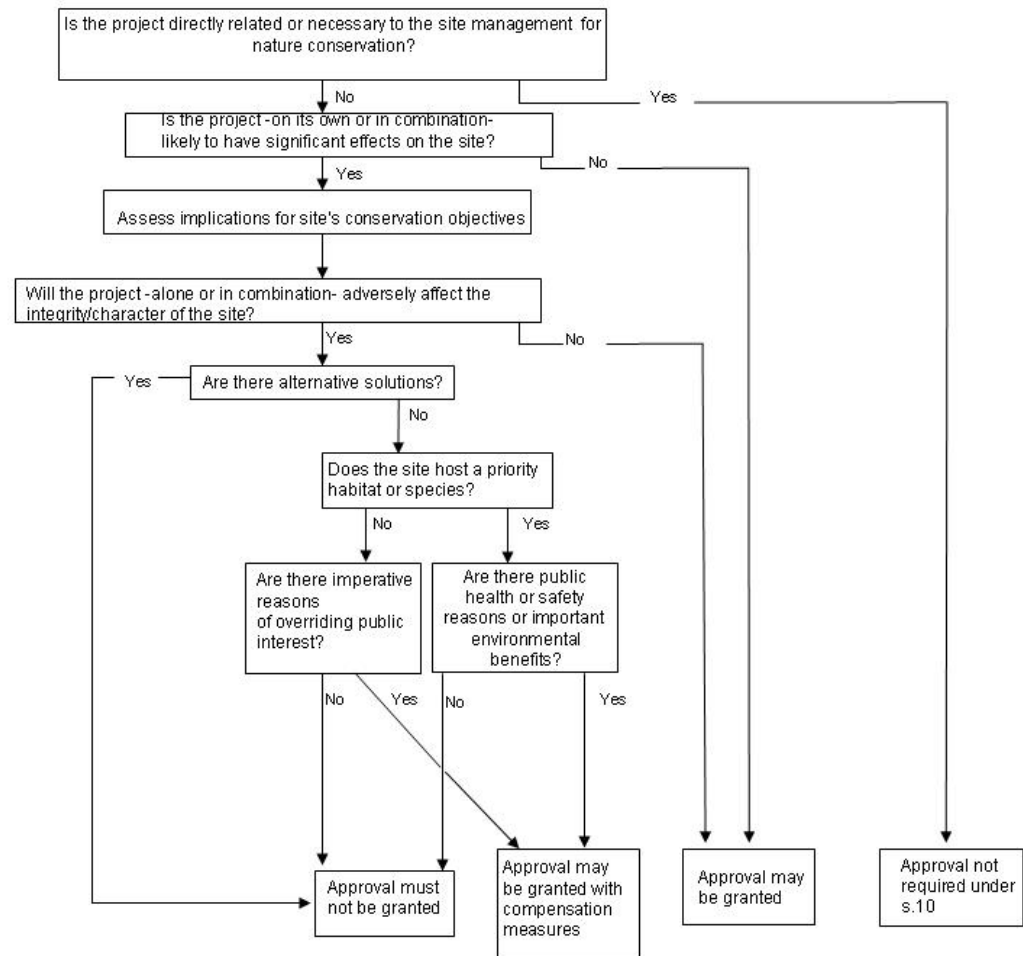
The SBAA Environment team are at your disposal for any clarifications you may require. We will keep you informed of future developments.

JOHN STAINTON
Administrative Secretary
HQ SBAA

20 July 2007

Annex B

Flow Chart for the Appropriate Assessment required under s.10 of the PMNW and GWB Ordinances



Definition of terms and concepts

- **Directly related or necessary to the site management**

The 'management' component refers to management measures that are for conservation purposes, and the 'directly' element refers to measures that are solely conceived for the conservation management of the site and not for the management of direct or indirect consequences of other activities. Furthermore, if a measure designed for the conservation management of one site affects another site, then it will require assessment, as the conservation management measures are not specifically and directly targeted at that second site.

- **In Combination**

The assessment should address the potential for in combination effects which may result from projects currently under consideration together with the effects of any existing or proposed projects. The contents of assessments of different projects under consideration at the same time must include references to and take account of each other in so far as they may have in combination effects. When impacts are assessed in combination in this way, it can be established whether or not there may be, overall, an impact which may have significant effects on the site or which may adversely affect the integrity or character of a site.

- **Significant effect**

A means of determining the significance of an effect is through the use of key indicators such as percentage loss of a habitat, duration or permanence of a disturbance etc. Some indicators, such as percentage of habitat loss, may be more significant for priority habitat types.

- **Integrity**

Biological integrity can be defined as all those factors that contribute to the maintenance of the ecosystem including structural and functional assets. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives. A site has a high integrity where its capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required.

- **Alternative options**

Project proponents should consider alternative solutions at the earliest stages of development.

Alternative solutions must be assessed by the competent authority against the site's conservation objectives.

The examination of alternative solutions requires that the conservation objectives and status of the protected site will outweigh any consideration of costs, delays or other aspects of an alternative solution.

The objectives of the project or plan must be identified in order to assess whether alternatives exist. The alternatives can then be assessed against their likely impact upon the conservation objectives of the site. Alternative solutions could involve alternative locations, different scales or designs of development, or alternative processes. The "zero option" should be considered too.

The competent authority will assess the alternative solutions proposed by the project proponent but will also consider any other alternatives suggested by other stakeholders. The Competent Authority can therefore determine that further alternative solutions exist even where the project proponent has demonstrated that a range of alternatives had been examined at the design stage.

- **Priority Species or habitat**

This concerns the effects of a project on the specific priority species or habitat.

The potential damage of a project to the priority species/habitat can only be accepted as overruling the fulfilment of the conservation objectives if the evoked imperative reason of overriding public interest concerns human health and public safety or overriding beneficial consequences for the environment (In the legislation of the Republic of Cyprus projects may be approved for other reasons of overriding public interest, subject to the opinion of the European Commission. The SBA Ordinance provisions are more stringent, on the precautionary principle, in the lack of the EU mechanism). This restriction applies to all sites hosting a priority habitat or species, when the priority habitat or species is affected.

If such reasons do exist it is necessary to carry out an assessment of compensatory measures.

- **Imperative Reasons of Overriding Public Interest**

The acceptance of imperative reasons of overriding public interest must be fully ascertained and documented. This option may only be examined in the absence of alternative solutions.

They must be actions or policies aiming to protect fundamental values for the citizens' life. Examples of such interests are human health, public safety and beneficial consequences of primary importance for the environment.

Only public interests, whether or not promoted by public or private bodies, can be balanced against the conservation objectives of the legislation. Proposed projects by private bodies can only be considered when public interests are served and demonstrated. Public interest must be overriding. Not every public interest of social or economic nature is sufficient, in particular when seen against the particular weight of the interests protected by the legislation.

Also, the public interest can only be overriding if it is long term. Short term economic or other interests which would yield short term public benefits do not outweigh the conservation objectives of the site.

The imperative requirements include public health, environmental protection and the pursuit of legitimate goals of economic and social policy.

Some examples where the European Commission has provided a positive opinion and justified IROPI are as follows:

- Replacement construction of a motorway bridge: Overriding public interest project with no viable alternatives
- Extension of an airport – overriding public interest as the extension of the airport is necessary for the further economic development of the region where it is based. No viable alternatives existed.
- Public utility project: Construction of a high speed line to connect the capital of a country with other cities and with neighbouring countries.

- **Overriding Beneficial Consequences for the Environment**

The competent authority must check whether such a situation exists. No further guidance is provided and there is no EU case law where projects were considered on those grounds.

- **Mitigation**

Mitigation is defined as “measures aimed at minimising or even cancelling the negative impact of a project, during or after its completion”. The competent authority must consider the project in the absence of mitigation measures that are designed into a project. Once the effects have been recognised and assessed, appropriate mitigation can be decided (following consultation with NGOs etc) by the competent authority. Mitigation measures are an integral part of the specifications of a project.

Mitigation measures are also required when it cannot be demonstrated that the conservation objectives of a site will not be adversely affected.

- **Compensatory measures**

When, in the absence of alternatives and once the imperative reasons of overriding interest are accepted, the decision is taken to proceed with a project which will have a negative impact on the integrity of the site, compensatory measures need to be taken. They are independent of the project (including any associated mitigation measures). The aim is to offset the negative impact remaining (after the implementation of mitigation) of a project and to provide compensation corresponding precisely to the negative effects on the species or habitat concerned. The compensatory measures constitute the "last resort". Furthermore, they should go beyond the normal/standard measures required for designation, protection and management of sites.

Compensatory measures are not a means to allow the implementation of projects while escaping the obligations imposed by the legislation.

Compensation should normally take place before implementation of the project, to avoid irreversible impact of the site.

Compensation measures are often seen as having little guarantee of success.

Compensatory measures should address, in comparable proportions, the habitats and species negatively affected and provide functions comparable to those which had justified the selection criteria for designating the affected site. They may include:

- habitat restoration,
- habitat recreation,
- species reintroduction,
- species recovery and reinforcement,
- land purchase,
- rights acquisition,
- creation of nature reserves,
- incentives for certain economic activities that sustain key ecological functions,
- reduction of threats, usually upon species.

An assessment of how successful the compensation measures are, must be undertaken through legally binding mechanisms. This requires the preparation of management plans with clear and achievable short, medium and long term objectives as well as long term monitoring mechanisms.

The cost of the compensatory measures must be borne by the project proponent.

- **Gathering of information necessary for the appropriate assessment**

The project proponent must submit the information to the competent authority for consideration. The competent authority may use the information as the basis for consultation with relevant authorities, nature conservation agencies and NGOs. Please see the SBAA Guidelines (revised March 2012) to project proponents on the required information.

- **Undertaking of Appropriate Assessment**

The competent authority carries out the appropriate assessment in consultation with various stakeholders.

- **Project**

Project is defined in the Environmental Impact Assessment Ordinance and means:
(a) the execution of any construction works or other installation or scheme; or

(b) any other intervention in the environment, including the extraction of mineral resources.

- **Location of project**

The scoping includes projects both inside and outside the boundaries of the site – even at far distances, as long as it may have an impact on the site. An example would be the construction of a dam upstream and far from a wetland, which would affect the water balance of the wetland, or wind farms (off-shore or on-shore) which could affect flight paths relating to an SPA.

- **Precautionary Principle:**

The precautionary principle requires that the conservation objectives of the site should prevail where there is uncertainty. The European Commission states that the use of the precautionary principle presupposes:

- the identification of potentially negative effects resulting from a phenomenon, product or procedure,
- a scientific evaluation of the risks which, because of the insufficiency of the data, their inconclusive or imprecise nature, makes it impossible to determine with sufficient certainty the risk in question.

The precautionary principle applies both to the screening process (test of significance) and to the Appropriate Assessment process.

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