FIELD GUIDE TO THE BUTTERFLIES OF THE SACRED MIJIKENDA KAYA FORESTS WORLD HERITAGE SITE: KAYA KAUMA FOREST

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Graphium antheus, Large Striped Swordtail

This guide was supported by National Museums of Kenya and the German Commission for UNESCO

DEDICATION

This field guide is dedicated to the communities living adjacent to the Sacred Mijikenda Kaya Forests that have contributed to the conservation of the forests and the biodiversity including the diverse butterflies.

The National Museums of Kenya (NMK) is a state corporation established by an Act of Parliament, the Museums and Heritage Act of 2006. NMK is a multi-disciplinary institution whose role is to collect, preserve, study, document and present Kenya's past and present cultural and natural heritage. This is for the purposes of enhancing knowledge, appreciation, respect and sustainable utilization of these resources for the benefit of Kenya and the world, for now and posterity. NMK's mutual concern for the welfare of mankind and the conservation of the biological diversity of the East African region and that of the entire planet demands success in such efforts.

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FOREWORD

The communities living adjacent to forests in many parts of Kenya are still in total dependence on natural resources from these forests for survival. Many of them do not produce sufficient food or earn sufficient income to adequately feed their families throughout the year. There is urgent need for alternative strategies that will enable exploration and utilization of underutilized forest resources, diversify the income and increase food sources for them while considering environmental health and community's resilience to the effects of climate change and other challenges.

Butterfly farming has been recognized as an important income generating nature based enterprise. Other than sale of pupae in both local and international markets, it presents an opportunity for eco- cultural tourism for both rural and urban populations. Butterflies largely depend on plant species to complete their life cycle. The enterprise is therefore bound to enhance establishment of tree nurseries and tree planting for these mini livestock. Butterflies are insects that provide pollination services for both on farm crops and wild flora thus ensuring a sustainable healthy environment.

This field guide to the butterflies of the sacred Mijikenda Kaya Forests World Heritage Site focusing on Kaya Kauma Forest, will help support the identification of butterfly species by the community. Forest adjacent communities are generally familiar to butterflies but they need guidance in the identification of the species. The butterfly market dynamics dictate that farmers be able to identify and farm the species that are in demand for varying market's needs. This field guide is well illustrated with the butterfly species photographs and it should be relatively easy to use among the target community.

The NMK has supported butterfly farming among communities living adjacent to the Arabuko Sokoke forest and we are thrilled by the potential of butterfly farming in the Sacred Mijikenda Kaya Forests World Heritage Site, particularly at the Kaya Kauma Forest. What has been achieved so far in past years is commendable and sets a stage for expansion. The present field guide is one more step in the right direction towards empowering of women, youth and men in the sustainable utilization of a unique and under-utilized natural resource, the butterflies and the plants that provide nectar to the adult butterflies and those that are food plants providing leaves to the growing and eating stage, the caterpillars.

Mzalendo N. Kibunjia, PhD, EBS

Director General, National Museums of Kenya

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We highly acknowledge the support given by Vivienne Nandokha, the Resource Centre manager, National Museums of Kenya who reviewed the draft and enhanced the content presentation and set up. Though we have had all the support in developing this guide, it may still have some areas that may not be sufficiently outlined. We welcome sharing of any information to enhance the guide as the room for improvement knows no limits.

PREFACE

This field guide provides information on butterflies recorded in Kaya Kauma forest. To date, 83 butterfly species have been recorded in Kaya Kauma forest in the coastal region of Kenya. This, field guide has initiated the first version with illustrations of the butterfly species. The guide also offers hands-on information on species' common name, scientific name, wing span, and a description of each of the species recorded to exist in Kaya Kauma forest, in Kilifi County, Kenya.

The guide is written based on butterfly records from two field surveys undertaken in the Kaya Kauma Forest and surrounding landscapes in 2018 and 2020. The Sacred Kaya Kauma forest adjacent community largely dependends on nature for survival. Butterflies are insects that provide pollination services to both farm crops and wild flora thus ensuring a sustainable healthy environment. The butterfly-based enterprises offer livelihood options that are environmentally friendly. Butterfly farming has been recognized as an important income generating nature-based enterprise. Other than sale of pupae in both local and international markets, it presents an opportunity for eco-cultural tourism for the larger urban population from the fast-emerging towns. Butterflies largely depend on plant species to complete their life cycle. The butterfly enterprise is therefore bound to enhance establishment of tree nurseries and tree planting for these mini live stocks.

Lack of appropriately skilled trainers is a major constraint in the advancement of butterfly farming. Additionally, appropriate tools for identifying and managing the target insect species, lack of appropriate insect farming materials and training possibilities add to the list of constraints to insect-based enterprises in most rural areas. Though butterflies are familiar to many of the forest adjacent communities, they need guidance in the identification of the species. This field guide to the butterflies of the sacred Mijikenda Kaya Forests World Heritage Site, with focus on Kaya Kauma Forest will help support the identification of butterfly species by the farmers, school children in clubs involved in environmental conservation and the general public members that have interest in butterflies. This guide will therefore provide an important tool that will enable people to easily identify and familiarize themselves with different butterfly species.

CONTENT

INTRODUCTION

BUTTERFLIES

Butterflies and moths belong to an insect order known as Lepidoptera and are easily told apart from other insects by their scaly wings. The scales with different colours give these insects unique patterns on their wings. There are about 19,000 described butterfly species in 1,820 genera in the world. In the Afrotropical region, there are 4,325 species (about 23% of the world total) in 318 genera (about 17% of the world total). In Kenya, there are five butterfly families that include; Papilionidae (Swallowtails), Pieridae (The Whites and Yellows), Nymphalidae (Brush-footed butterflies), Hesperiidae (Skippers) and Lycaenidae (Blues and Coppers) and 903 species, about 4.8% of world total and about 20.9% of the Afrotropical butterflies. Kaya Kauma recorded 83 butterfly species in the five families as follows: Papilionidae (Swallowtails) 10, Pieridae (Whites and Yellows) 19, Nymphalidae (Brush-footed butterflies) 41, Lycaenidae (Blues and Coppers) 10 and Hesperiidae (Skippers) 3.

BUTTERFLY ANATOMY

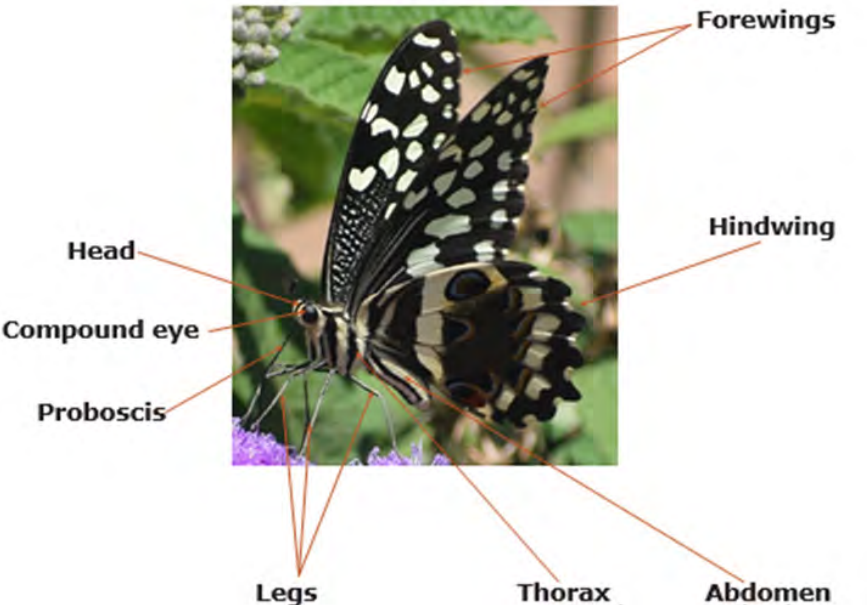
The adult butterfly body consists of three parts, the head, the thorax and the abdomen.

Head: The head has the sensory organs including, two large compound eyes, one on each side of the head, which are good at detecting colour such as for the flowers from which they get nectar. The butterfly colour vision covers the whole range visible to the human eye and in addition, a large band of the ultraviolet that is not visible to humans. Two antennae arise from between the two compound eyes, they are also called feelers which have compound sensory functions, as the organs of smell and organs of hearing. The antennae of butterflies are always provided at the end with a club-shaped enlargement and vary in length. Butterflies have a sucking mouthpart in form of a tube, known as proboscis which can be uncoiled when in use and coiled up spirally when not in use. The adult butterflies feed on liquids like nectar, fruit juice, fluids from excrement and flesh and exudates from plants among others.

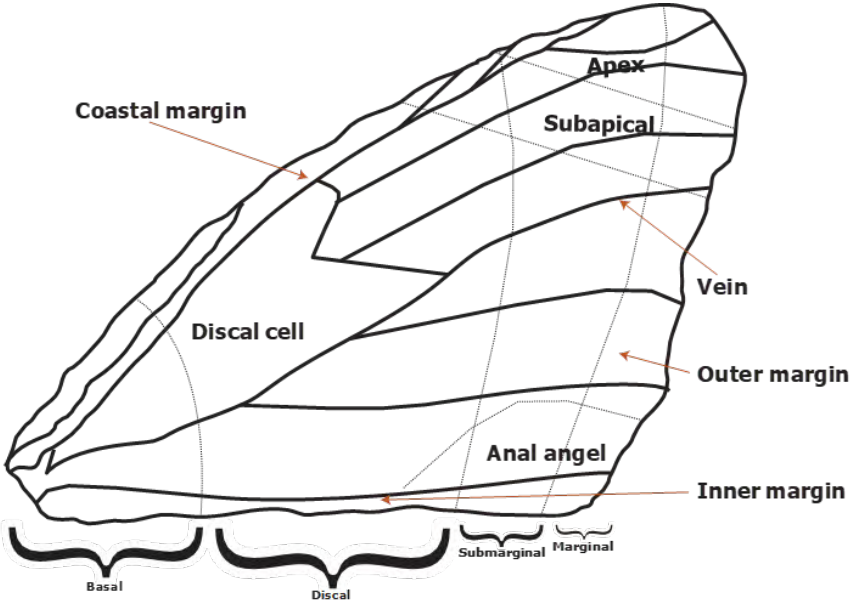
Thorax: The thorax of a butterfly bears the organs for movement, the legs and wings. Three pairs of legs originate from the thorax, but in the family Nymphalidae (brush-footed butterflies), the first pair of legs is reduced in size, and held pressed against the thorax and not used

for walking. The legs also have other functions, the feet of butterflies also contain part of the sensory systems and discern tastes and chemical compounds in the food plants for their caterpillars. The wings are membranous, with veins that form cells. Wings are overlaid with scales that make varied colour patterns. Butterflies use their colour patterns for defense, camouflage, communication and aggression. The shape of the wings varies among different butterflies.

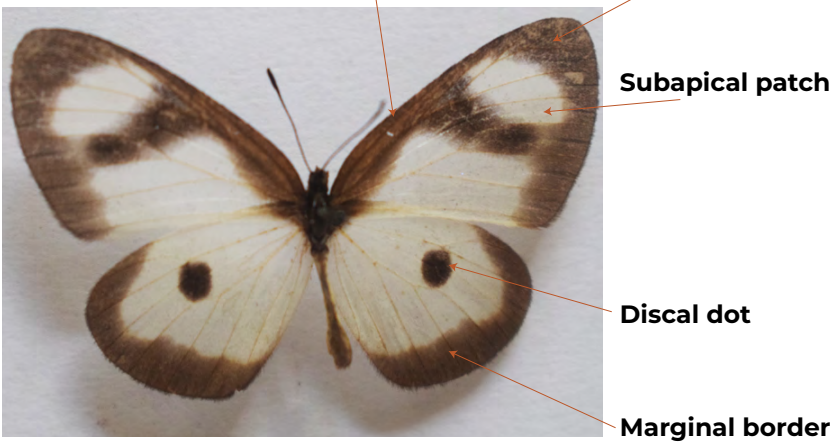
Abdomen: The abdomen contains many vital organs for digestion, respiration and reproduction. Most of a butterfly's digestive tract is housed inside the abdomen. This is where the butterfly processes food and any waste excreted through the genital system. For respiration, butterflies get oxygen through small holes called spiracles on each segment of the abdomen. The oxygen is carried in the body by small tubes called tracheae. The external organs of reproduction are located at the ventral surface near the tip of the abdomen. Some males have specialized structures (brush-pencils) that they push out from their abdomen to release sex pheromones for attracting females.

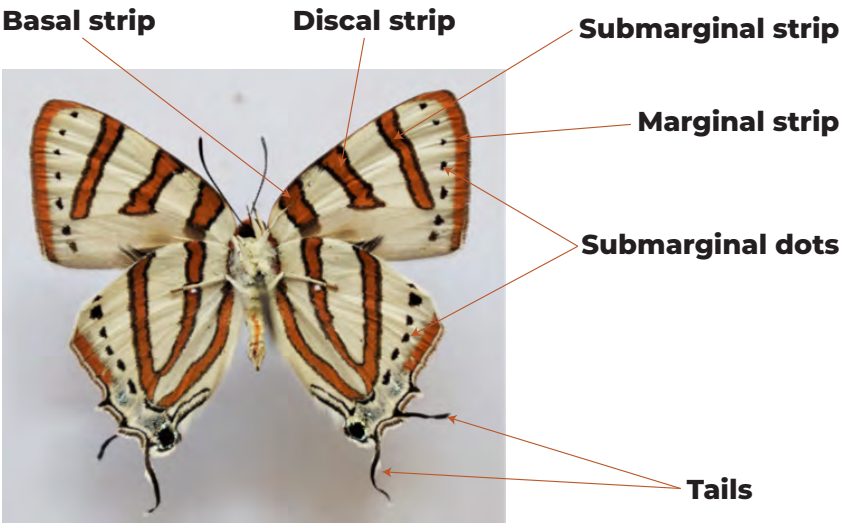


General structure of an adult butterfly



Parts of a butterfly wing





Some patterns on butterfly wings

BUTTERFLY LIFE CYCLE

Butterflies undergo a complete metamorphosis with four distinct stages: egg, larva, pupa and adult. Metamorphosis is change in form and there is pronounced change between the stages. Each stage is characteristically distinctive such as a crawling caterpillar which feeds by chewing parts of the host plant to the adult butterfly with a tube like sucking mouth part.

The egg: The eggs of butterflies have a shell containing the fluid food that maintains the growing caterpillar until the hatching stage. The egg shell may be smooth or patterned and has holes called micropyles that admit the sperm that fertilizes the egg. Microscopic holes called aeropyles in the shell allow gas exchange. The egg forms vary, spherical, angled and cylindrical among other shapes. The colour also varies with some white, brown, blue, green, red, yellow among various tints when freshly laid but they usually darken before hatching. Depending on the species, eggs are laid singly, in small clusters or in a mass on food plants. The female glues the eggs to a leaf, or branch of the host plant. Depending on the health of the butterfly, the prevailing climatic conditions, the number of eggs laid may vary from just a few to over 1,000. The embryo in the egg develops and hatches within a week or so.

Euxanthe wakefieldi eggs

Papilio demodocus egg

The caterpillar: The larval form is called a caterpillar (caterpillar is from Latin, *catta pilosa* meaning “hairy cat”). The small caterpillar from the egg may eat the eggshell first before starting to feed on its food plant. Initially, it prefers young tender leaves and switches to tougher leaves as it grows. Caterpillars have long, worm-like bodies variously ornamented. Some are smooth, others have horny projections, spines and

prominences on the skin. Most are green in colour to blend with the green vegetation for protection. Others are brown blending with the colour of twigs and branches on which they rest when not feeding.

The caterpillar stage is mainly for feeding and growth. As they grow, they outgrow their skin. To provide room for more growth, they undergo moulting, the shedding of the old skin, a process which takes place at regular intervals. During this process, the caterpillar stops feeding, attaches itself firmly on a surface and the skin splits along the back middle line from the head to the last segment. The caterpillar then crawls from the old skin leaving it behind. The skin of the head sometimes remains attached to the head for a time before falling off. The newly formed skin, stretches and hardens and the caterpillar continues to feed and grow. Normally only four moults take place and the time between the moults is called instar. The newly hatched caterpillar is called the first instar larva and most caterpillars undergo five instars before changing into the next stage, the pupa or chrysalis. The caterpillar stage usually lasts for two to three weeks, with warmer temperatures generally inducing faster development. Diet also affects development time with those that feed on flowers or leaves developing faster than caterpillars that feed primarily on stems and roots.

Euxanthe wakefieldi,
Forest Queen

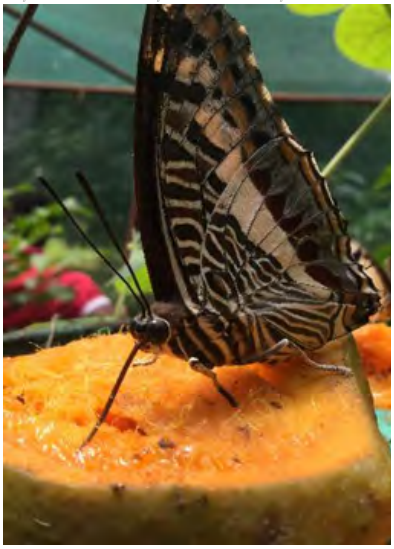
Graphium antheus,
Large Stripped Swordtail

Pupa: When the caterpillar has reached full growth, it stops feeding, seeks a protected place and attaches to a surface by a pad of silk by the terminal abdominal hook called a cremaster. It transforms into a pupa (also known as chrysalis) by moulting the last time into this physically inactive stage. Other caterpillars attach themselves to surfaces by means of a silk pad which holds the anal end of the pupa and have in addition a girdle of silk which passes around the middle of the pupa, holding it in place. The pupa forms vary depending on the butterfly species. During this stage, the caterpillar features are transformed to adult butterfly structures. The pupal phase may last from a few weeks to several months depending on the species and environmental conditions.

Euphaedra neophron
(Gold Banded Forester)

Charaxes brutus
White-Barred Charaxes

Adult butterfly: The adult butterfly emerges from the pupa by breaking through the pupal skin and crawling out onto some support such as a twig or rock. The emerging butterfly has wet shriveled wings that must expand and dry properly. It pumps haemolymph (the equivalent of blood in insects) into the wings. The expansion and hardening of the wings may take several hours then the adult butterfly can start flying. Life span of the adult butterfly depends on the size, the species, where it lives, and what time of year it becomes an adult. Predators, diseases, accidents and bad weather conditions kill most butterflies and only about 2% of the eggs laid make it to the final stage. Larger butterflies tend to live longer than smaller butterflies. The average lifespan of a butterfly is about one to four weeks. Adult butterflies feed mainly on flower nectar, however some butterfly species specialize in getting their nutrients from tree sap, fermenting fruit, tears, sweat, bird and animal droppings and even carrion. Experiments have shown that carbohydrate availability will extend the butterfly's longevity.



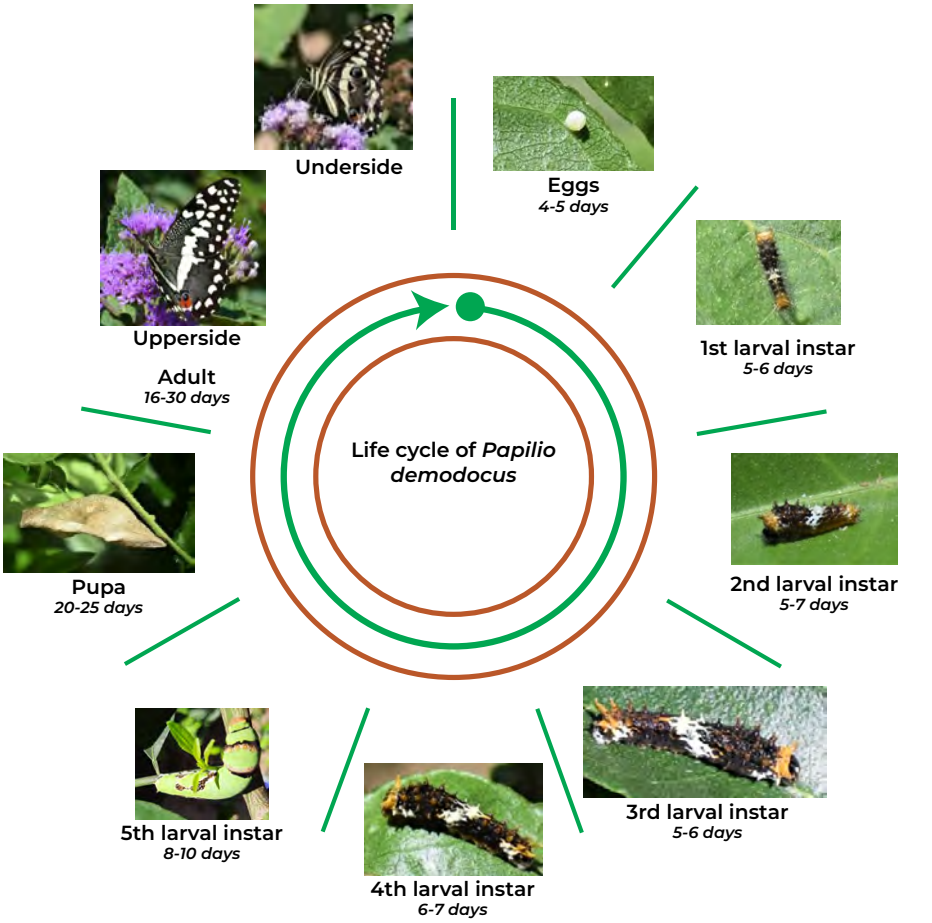
Charaxes saturnus (Foxy Charaxes) sipping fruit juice from a mango fruit

Butterflies mud puddling

Catopsilia florella (African Migrant) and *Danaus chrysippus* (African Queen) sucking nectar from flowers

THE BUTTERFLY LIFE CYCLE: ILLUSTRATED WITH THE CHRISTMAS BUTTERFLY

Papilio demodocus, common names the christmas butterfly or the orange dog is found all over Kenya. It loves flying in gardens and bushes feeding on nectar from flowers using its long straw like mouth. The life cycle is illustrated here, however, the life cycle duration is influenced by temperature and condition of the host plant.



IMPORTANCE OF BUTTERFLIES

Butterflies provide numerous ecological and socio-economic services and are important indicator species. Some of their benefits are listed here.

i. They provide ecosystem service as pollinators and in so doing they:

a) Improve our diets by providing pollination service to plants that are micronutrient-rich like fruits, vegetables, seeds and nuts among many others.

b) They make our foods taste better as well pollinated plants produce larger, more uniform, tastier fruits and vegetables.

c) They increase food production and food security as insect pollinators including butterflies are improving food production, helping to ensure food security for people.

d) They maintain biodiversity. Pollination sustain forest eco systems through the regeneration of trees which in turn helps to conserve forest biodiversity.

ii. Butterflies form part of the food-chain and all life stages are eaten by spiders, insects, birds and lizards among others.

A spider feeding on a Lycaenidae butterfly

iii. Butterflies are beautiful, images of freedom and colour. Many people around the world look at these beautiful flying insects with deep reverence and use them as a symbol for many life concepts, as a representation of change, renewal, hope, endurance, and courage to embrace the transformation to make life better.

iv. Butterfly watching is increasing and promoting eco-tourism based on housing of butterflies for tourist observation. In Kenya, the Mombasa butterfly house next to Fort Jesus Museum in Mombasa town is an attraction to the public.

v. Butterflies are used in research and education. Insect metamorphosis is one of the world's most fascinating biological phenomena. Butterflies undergo incredible changes as they pass through the four distinct life stages: egg, caterpillar, pupa and adult. When observing these changes, one witnesses one of the greatest wonders of nature.

vi. Butterflies are becoming an important item for festive release during weddings, replacing other items like rice. Businesses are now open trading in wedding butterfly release packages. A big trend in weddings today is the release of butterflies after the ceremony. Wishes are made on the wings of a butterfly, released with it and watched as the wishes are winged toward heaven. It is more ecologically sound than throwing rice or plastic balloons. It is a thriving business in the developed world with a dozen of butterflies selling at up to $100. Producers also get orders for butterflies to release at spiritual ceremonies like Easter.

vii. Butterflies play a significant cultural role in the society. The appearance of butterflies is associated with seasons or serve as predictor of events. There are many proverbs, songs and stories related to butterflies and they are also an inspiration in art expressions.

viii. Butterflies are good bio-geographical and ecological indicators. They are specific to geographical sub-regions and different ecological conditions. Butterflies are indicators of changes within an ecosystem for example increasing habitat destruction will lead to disappearance of some species from the disturbed site.

CONSERVATION STATUS OF BUTTERFLIES IN KENYA

The International Union for Conservation of Nature (IUCN) assessment methodology and threat categories have only been applied to a few butterfly species in Kenya. For example, in the Taita Hills 215 butterfly species were recorded during a recent project, one of them, *Papilio desmondi* teita is categorised as endangered and listed in the IUCN Red List of swallowtail butterflies of the world. The current 83 species recorded so far in Kaya Kauma includes 26 species categorized as of least concern and 57 species in the not yet evaluated category.

Worldwide research and surveys have shown that the butterflies alongside other insect pollinators are facing threats that need to be addressed. Decline in the population of pollinators, especially bees and butterflies, are mainly due to intensive agricultural practices, changes in land use, pesticides, alien invasive species, diseases, pests, and climate change. Many of the Kenyan butterflies are under threat largely due to habitat loss and modification. Some immediate actions are needed to save the butterflies and other insect pollinators. Some conservation measures include:

i. Providing food resources for both the larval and adult stages by growing diverse indigenous plants that will offer food for butterfly caterpillars and nectar for the adult butterflies. The plants can be in their natural habitats or in botanical gardens. These plants have an important local conservation value for butterflies and other insects as due to their high plant diversity, they often have more insects than surrounding indigenous vegetation.

ii. Avoiding use of pesticides, fungicides or herbicides and improved use of integrated pest and pollinator management strategies. Pesticides can kill insect pollinators including butterflies directly or through poisoning the larval food plants and the nectar sources for the adult butterflies.

iii. Creating and maintaining good habitats for butterflies and other insect pollinators in order to ensure pollination. Leave some areas of the farm as a natural habitat. Create hedgerows with indigenous plants that flower at different times during the year and plant attractive crops like fruit trees such as custard apple and citrus. Some of these are known butterfly larval food plants like the custard apple (Annonaceae), which is a food plant for Papilionidae butterflies of the Genus *Graphium*. Citrus

(Rutaceae) are food plants for the Genus *Papilio*. The fruits of the custard apple are known for their medicinal and economic values further adding farmers' income.

iv. Creating awareness about butterflies and their importance in the environment and socioeconomic sustainability. By understanding butterflies, people will appreciate them, respect them, and learn to enhance their survival and live peacefully with them. This involves popularizing butterflies, especially through use of iconic species, through more media coverage, and more inclusive education. Research has shown that people with more exposure to nature are more interested in conserving it and that direct experience with the natural world, especially during childhood, is an important source of environmental sensitivity.

v. Undertaking research as insufficient understanding of butterflies creates a bottleneck in terms of resource utilization, creating impediments in resource conservation. Research is needed to monitor and to address gaps in our knowledge on butterflies, including information on the status and trends of butterfly pollinators, pollination value and their habitats.

vi. Promoting best practices for climate-resilient agriculture with benefits for pollinators. It has been recorded that butterfly species richness decreases with land-use intensity and is positively related to the cover of semi-natural habitats and both butterfly species richness and abundance declines sharply with distance from forests. Forest remnants and high cover of semi-natural habitats are thus important for conservation of butterflies.

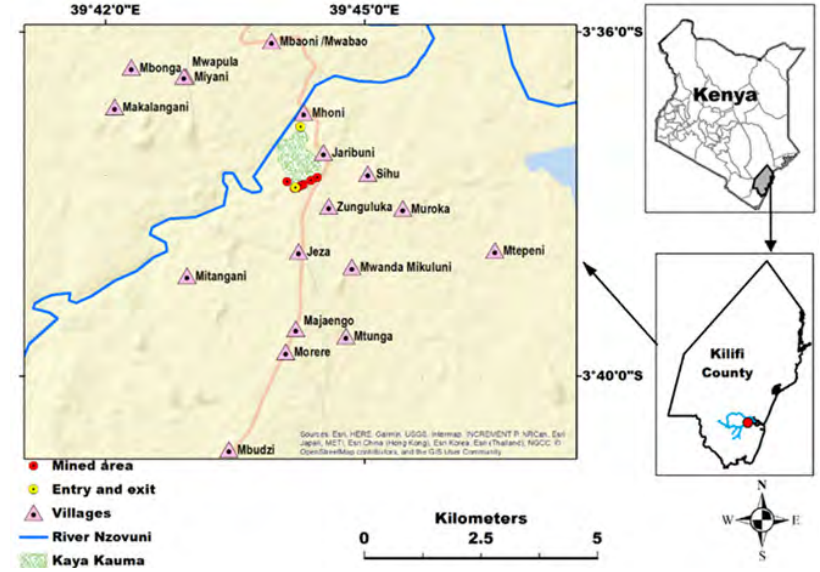
vii. Adoption of butterfly-friendly land use policies in rural and urban areas. Having more expansive sustainable agriculture and forestry, improved regulation and prevention of environmental risks, and greater recognition of protected areas alongside agro-ecology in novel landscapes.

CHARACTERISTICS OF KAYA KAUMA HERITAGE SITE

The Mijikenda sacred kaya forests are repositories of plant and animal species and cultural heritage epitomizing the history and culture of the Mijikenda community. The 39 sacred sites are declared as National Monuments by the National Museums of Kenya under the National Museums and Heritage Act of 2006. The Sacred Mijikenda Kaya sites (Kauma, Jibana, Kambe, Ribe, Bomu Fimboni, Mudzi Muvya, Fungo and Mtswakara-Gandini), all indigenous forests, are listed by UNESCO as World's Heritage sites.

The butterfly survey project was implemented at the Kaya Kauma Sacred forest located in Jaribuni location in Kilifi County at latitude 3°37.821S and longitude 39°44.189E, with an altitude of 120 m above the sea level, and occupies an area of 100 Ha. This forest was once a water catchment area supplying Kilifi town. The forest is under the management of a Council of Kaya elders and the National Museums of Kenya. The forest slopes down the north to Dzovuni river which flows into the Kilifi creek at Mtsanganyiko. The area has iron-rich soil and rich deposits in iron-ore deposit. Kaya Kauma is surrounded by scattered villages and farmlands.

Kaya Kauma is surrounded by five villages with a population of 2,384 distributed in 166 homes composed of 777 households. They are mostly small scale subsistence farmers. The main land uses include forests, homesteads and farmland with cassava, maize, and for those living along the river growing pawpaw, coconut, scattered cashewnut, tamarind, custard apple, and variety of indigenous vegetables and pulses.



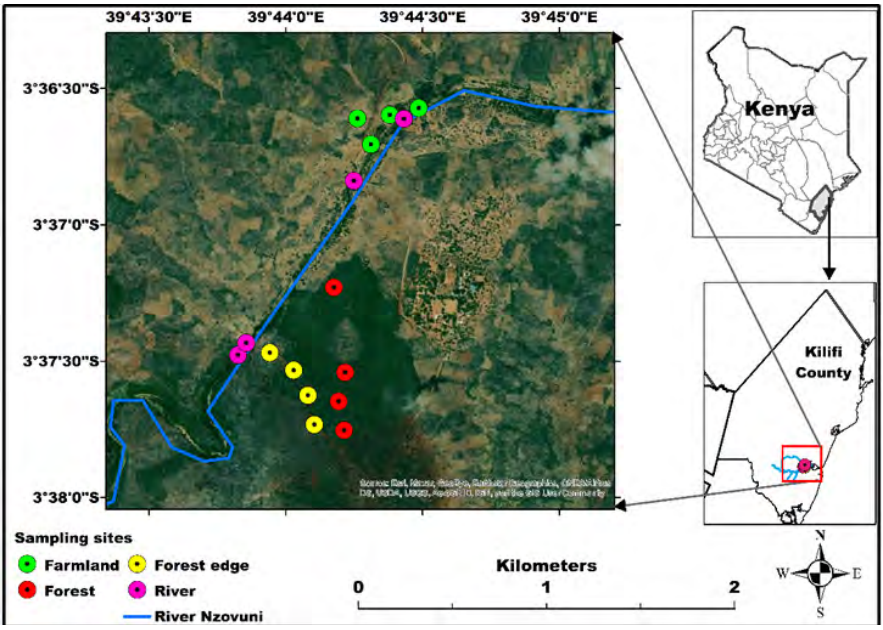
Villages adjacent to Kaya Kauma forest

BUTTERFLY SAMPLING IN KAYA KAUMA

The survey for butterflies was carried out along three transects in Kaya Kauma. Four sampling points were identified in each transect with an equidistance of 200 metres between the points. The first survey was carried out from 21st to 26th November 2018 and the second from 29th October – 3rd November 2020. Two methods were in-cooperated in the surveys to ensure proper representation of the species occurring in the Kaya Kauma forest, forest edge and surrounding farmlands.

Baited butterfly traps were specifically used to capture and record fast-flying butterfly species, such as *Charaxes* that dwell in tree canopies and cannot be otherwise easily reached. The traps were hoisted over a high tree branch with a rope about 2 metres above the ground and lowered to remove and record the catch. Fermenting fruits (bananas and pineapples) were used as a bait to lure butterflies into the traps. Twelve traps were set in every transect and left for two days before transferring to another transect. Trap inspection was done every evening.

Time limited searches and sweep netting involved walking along the transect within a time limit, searching, collecting and recording butterflies. This was best done between 10am –noon when most butterflies were active. Collected specimens were recorded and released but those needing further taxonomic confirmation were killed and preserved in butterfly envelopes for identification confirmation and preservation at the NMK.



Location of River Dzovuni and butterfly sampling points along three transects within the Forest, Forest edge and Farmland in Kauma.

KAYA KAUMA BUTTERFLY FAMILIES AND SPECIES DETAILS

Family Papilionidae: The Swallowtails

These are large butterflies, mostly with wings with combination of black, yellow or blue markings and hindwings usually have “tails”. All visit flowers for nectar and when landing on flowers, they continue beating their wings. *Papilio* species have a fast and weaving flight while *Graphium* species have a rapid and direct flight. The eggs are round. Larvae when young resemble bird droppings but develop other camouflage colours in later instars. Mature larvae are smooth. Swallowtail larvae have a Y–shaped gland, the osmeterium just behind their head which they can inflate when alarmed to produce a pungent smell to repel predators. Pupae are suspended with a silken girdle around the thorax as well as by the tail and are often dimorphic with green and brown forms. Some 10 species of swallowtails have so far been recorded in Kaya Kauma and all the 10 visit flowers for nectar.

Scientific Name: *Papilio dardanus*

Common Name: Flying Handkerchief

Wingspan: 75-110 mm

IUCN Status: Not Evaluated (NE)

Notes: This is a large butterfly with highly pronounced sexual dimorphism. The males are cream coloured with tails while the females have different forms without tails. The flying handkerchief is a master of batesian mimicry where an edible animal is protected by its resemblance to one avoided by predators. The females imitate some toxic species of butterflies like *Amauris niavius, Danaus chrysippus, Amauris echeria* and *Acraea poggei*. The basic habitat is evergreen forest but sometimes it can penetrate into woodlands, secondary forests and gardens. The species is widely spread within Africa. The larval host plants are the Rutaceae (*Clausena, Citrus, Teclea, Fagar, Caledendron*).

Male upperside

Female upperside

Female upperside

Scientific Name: Papilio constantinus

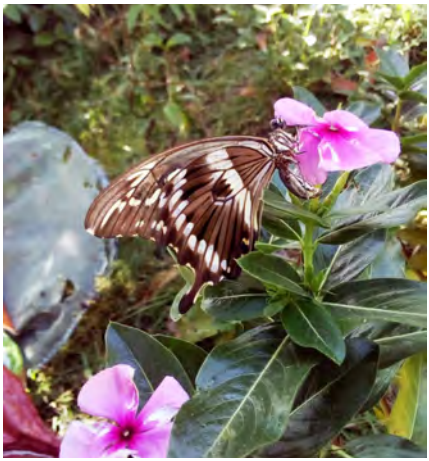
Common Name: Constantine's Swallowtail

Wingspan: 80-90mm

IUCN Status: Least Concern (LC)

Notes: The butterfly is dull black with cream bands and spots on both wings and has prominent tails. There is slight sexual dimorphism with the males having well-developed androconial patches on the wings of the upper forewing. The species is common in coastal forests. The preferred habitat is forest habitat with the males flying along forest roads often visiting flowers for nectar. The females mostly remain in the forest seeking out for food plants. Its flight period is during the warmer months peaking from November to February. It is essentially an East African Species. The larvae mainly feed on *Clausena* and *Teclea*.

Upperside



Underside

Scientific Name: *Papilio nireus*

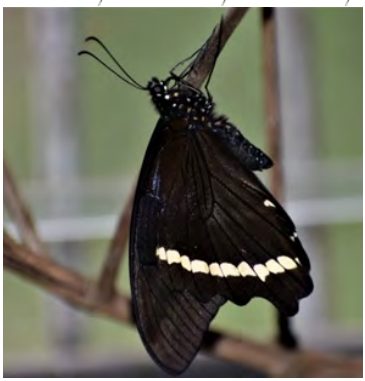
Common Name: Narrow Green-Banded Swallowtail or Narrow Blue-Banded Swallowtail

Wingspan: 75-95 mm

IUCN Status: Not Evaluated (NE)

Notes: The basic colour of *Papilio nireus* is black with narrow green bands on the wings. Females of this species differ from their males by being lighter and lack white marginal hind wing spots present in the males. It flies year-round, with peaks from November to February. Its preferred habitat is forest but it is also found in disturbed areas. The species is distributed throughout Africa. The species larval stage feeds on cultivated citrus and any wild Rutaceae including *Clausena, Teclea* and *Toddalia*.

Male upperside/underside



Male underside

Female upperside

Female underside

Scientific Name: *Papilio demodocus*

Common Name: Christmas Butterfly, Citrus Butterfly or Orange Dog

Wingspan: 90-110 cm

IUCN Status: Not Evaluated (NE)

Notes: This is a common and readily recognized swallowtail in Africa. The butterfly has dark brown and pale yellow checkerboard pattern on all its wings. The hind wings have no tails. The species is a familiar garden butterfly, also observed on forest edges pausing to feed from flowers. It regularly visits damp patches. The butterfly is found everywhere south of the Sahara. The species larval stage feed on cultivated citrus and any wild Rutaceae including *Clausena, Teclea* and *Toddalia*.

Upperside

Underside

Scientific Name: *Graphium philonoe*

Common Name: White-Dappled Swallowtail

Wingspan: 55-65 mm

IUCN Status: Least Concern (LC)

Notes: A black butterfly with elegant white spots dominating the wings. The underside of the wings has red patches at the base. Hind wings have no tails. Its habitat consists of coastal and riparian forests. Both sexes are similar and attracted to flowers. The caterpillars feed on family Annonaceae including *Artabotrys* and *Uvaria*.

Upperside

Underside

Scientific Name: *Graphium leonidas*

Common Name: Veined Swordtail

Wingspan: 75-85 mm

IUCN Status: Not Evaluated (NE)

Notes: This is a large dark brown butterfly with blue patches on both the fore and hindwings. Hindwings have no tails. This species resembles toxic Danaid *Tirumala petiverana*, which often flies in the same habitats. Both sexes are similar. The main habitat is the transition zone between forest and savanna. The caterpillars of this species feed on *Annona*, *Monanthotaxis*, *Uvaria* (Annonaceae) and *Landolphia* (Apocynaceae)

Upperside

Underside

Scientific Name: *Graphium kirbyi*

Common Name: Kirby's Swordtail

Wingspan: 84-98 mm

IUCN Status: Not Evaluated (NE)

Notes: A distinctive swordtail with dark brown ground colour. The species has a cream coloured band traversing the fore and hindwings. It is endemic to Kenya and Tanzania. In Kenya, it is only found along the Coastal forests, which consists of the main habitat. The flight is less strong. Both sexes visit flowers while males are fond of mud puddling. The larvae feed on *Annona senegalensis* and *Uvaria* species.

Upperside

Underside

Scientific Name: *Graphium colonna*

Common Name: Black Swordtail or Mamba Swordtail

Wingspan: 60-65 mm

IUCN Status: Not Evaluated (NE)

Notes: An elegant swordtail butterfly with the hindwings mainly black. The forewings have relatively narrow bars and bands. The white tips of the long tails are notable in flight. Sexes are similar, both visiting flowers for nectar and males mud puddle. The species inhabit coastal forest and heavy woodland. The larvae of this species feed on the genus *Annona, Artabotrys* and *Uvaria* (Annonaceae).

Upperside

Underside

Scientific Name: *Graphium antheus*

Common Name: Large Striped Swordtail

Wingspan: 68-73 mm

IUCN Status: Not Evaluated (NE)

Notes: A large stripped swordtail. This butterfly is easily distinguished from other members of the genus by the S-shaped bars and the green bands on the forewings. Sexes are similar. The species is common in Kenya coast habiting savanna and forest margins. The species does not survive much above 1500m. Flowers are often visited and males mud puddle, sometimes in very large groups. Caterpillars of this species feed on Annonaceae (*Artabotrys monteiroae, Uvaria caffra* and Custard apple (*Annona reticulata*).

Upperside

Underside

Scientific Name: *Graphium porthaon*

Common Name: Coastal or Cream-Striped Swordtail

Wingspan: 55-65mm

IUCN Status: Not Evaluated (NE)

Notes: A medium sized butterfly easily confused with *Graphium antheus*. The bars in the cell are S-shaped and dirty white and smaller compared to *Grahium antheus*. The tails are straight.

Habitat: Frost-free savanna, coastal bush and warm forest. Males fly rapidly and erratically, from one to three metres above the ground. Females fly a little more slowly. Both sexes feed from flowers and males mud puddle. The larvae feed on members of Family Annonaceae including *Annona, Artabotrys, Cleistochlamys, Friesodielsia, Monanthotaxis, Monodora* and *Uvaria*.

Upperside

Underside

Family Pieridae: The Whites and Yellows

These are small to medium butterflies. The predominant colours are white and yellow, with most species having some black marking. Species in the genus *Colotis* have orange, red or purple wing tips. The eggs are normally elongated with vertical ridges. Their caterpillars are cylindrical tapering towards the tail end and tiny hairs cover the body. Their pupae are suspended from the tail with a silken girdle around the thorax. Some 19 species have so far been recorded in Kaya Kauma and all the 19 visit flowers for nectar.

Scientific Name: *Catopsilia florella*

Common Name: African Emigrant

Wingspan: 55-60 mm

IUCN Status: Least Concern (LC)

Notes: This is one of the most common butterflies observed flying along forest edges and farmlands. The wings of this species have a characteristic spot on the underside. The males are greenish-white in colour while the females are variable, from dull white to yellow. Its flight is fast frequently visiting flowers. Migrations of the species can be observed often in the company of other species. The larval food plant is *Sesbania* and *Cassia*.

Male underside

Female underside

Male underside

Female underside

Scientific Name: *Pinacopteryx eriphia*

Common Name: Zebra White

Wingspan: 35-40 mm

IUCN Status: Least Concern (LC)

Notes: Unmistakable butterfly with black and cream stripes. Its common name, zebra white is from the black and cream stripes. It is a widely distributed savanna species, also occurring in dense vegetation. The flight is lively, often settling on ground where the underside colours camouflage. Sexes are similar and freely visits flowers. The caterpillars feed on Capparidaceae, mainly *Maerua* and *Cadaba*.

Upperside

Underside

Scientific Name: *Nepheronia thalassina*

Common Name: Blue Vagrant or Cambridge Vagrant

Wingspan: 50-60 mm

IUCN Status: Not Evaluated (NE)

Notes: The unmistakable males of this species has a characteristic light blue colour. Females are usually white or white and yellow but may have bright orange patches at the base of the forewing. Sometimes, the whole forewing may be light orange. In both sexes, the underside has a nacreous sheen. The species is common in forests, extending into the dry zone along riverine vegetation. Both sexes visit flowers for nectar in forest clearings. Caterpillars of this species feed on *Hippocratea obtusifolia* (Celastraceae).

Male upperside

Female upperside

Scientific Name: *Eronia cleodera*

Common Name: Vine Leaf Vagrant

Wingspan: 45-60 mm

IUCN Status: Not Evaluated (NE)

Notes: A striking and distinctive butterfly with white wings that have broad black borders. The underside is camouflaged, resembling a dry leaf. Sexes are similar. The species is common in open bushland, riverine areas and drier forests at the coast, coming inland. The flight maybe rapid when in open country. Both sexes visit flowers especially flowering *Maerua* trees for nectar. The caterpillars feed on Capparidaceae (*Capparis*) and Salvadoraceae (*Salvadora*).

Upperside

Underside

Scientific Name: *Colotis vesta*

Common Name: Veined Golden Arab or Veined Orange

Wingspan: 32-45 mm

IUCN Status: Not Evaluated (NE)

Notes: A medium sized butterfly with basal half of the fore and hindwing cream while the outer half is salmon with a yellow tinge. Females sometimes lack the salmon markings. The underside markings are more regular compared to closely related species. The species is a dry-zone butterfly which inhabits savannas. The flight is relatively fast and dancing. Sexes are similar and both visit flowers for nectar. Larvae feed on Capparidaceae (*Capparis, Maerua, Boscia, Ritchiea*) and Salvadoraceae (*Salvadora*).

Upperside

Underside

Scientific Name: *Colotis eucharis*

Common Name: Sulphur Orange Tip

Wingspan: 35-40 mm

IUCN Status: Not Evaluated (NE)

Notes: Males are light yellow in colour with large orange wing tip and less black markings. The females sometimes lack the orange wing tip and have more black markings. Seasonal variation is exhibited; male wet season form being immaculate underside and dry season form being variegated with brown. The habitat consists of savanna and shrubland. The species is observed in large numbers in flowering bushes. Larval food plants are Capparaceae (*Maerua, Boscia, Capparis* and *Cadaba*).

Male upperside

Female upperside

Scientific Name: *Colotis euippe*

Common Name: Round Winged Orange Tip

Wingspan: 35-40 mm

IUCN Status: Least Concern (LC)

Notes: A common elegant and beautiful butterfly with wings more rounded than other orange tipped members. The inner margin of the orange patch is curved evenly. Males have white and black wings with red-orange wing tips edged with black. Females are darker and more heavily marked. This species has a widespread range of habitats, including bush, savanna and forest. Larvae have been recorded on Capparaceae (*Maerua, Boscia, Capparis* and *Cadaba*).

Female upperside

Male underside

Scientific Name: *Colotis auxo*

Common Name: Yellow Orange Tip or Sulphur Orange Tip

Wingspan: 35-40 mm

IUCN Status: Not Evaluated (NE)

Notes: This is a pretty and attractive butterfly resembling the above one in both habitat and pattern. The species has a bright yellow colour and a strong seasonal variation. It likes wetter conditions and is observed in large numbers circling round flowering *Cadaba* or *Maerua*. Caterpillars feed on Capparaceae (*Cadaba*).

Male upperside

Female upperside

Scientific Name: *Colotis daira*

Common Name: Black-Marked Orange Tip

Wingspan: 30-40 mm

IUCN Status: Not Evaluated (NE)

Notes: The inner margin of the orange tip is curved evenly and not straight. The males have black shading along the inner margin of the forewing and a black margin at the hind wing. Females are variable in ground colour. It is a common savanna species. The species tend to settle on bare ground. Caterpillars feed on *Capparis* and *Cadaba* (Capparaceae).

Male upperside/underside

Male upperside

Scientific Name: *Colotis evagore*

Common Name: Tiny Orange Tip

Wingspan: 25-35 mm

IUCN Status: Least Concern (LC)

Notes: This is the smallest and delicate of the orange-tipped species. The male has a large orange patches and black edges on their forewings. Females are extremely variable, with more black and grey markings on their wings. This species is common in grasslands and savanna. The flight is weak flattering and staying low among flowers and herbs. Larvae feed on *Capparis, Maerua* and *Cadaba* (Capparaceae).

Female upperside/ underside

Female upperside

Scientific Name: *Colotis regina*

Common Name: Regal Purple Tip

Wingspan: 45-62 mm

IUCN Status: Least Concern (LC)

Notes: A beautiful butterfly with the males having large purple apical patch inwardly bordered by black. The females are larger with darker markings and spotted forewings. In Kenya, the species is found in coastal region mainly in woodland areas. Its flight is fast and higher above the ground. Larval food plants are mainly *Capparis* and *Boscia* (Capparaceae).

Female upperside

Male upperside

Scientific Name: *Colotis danae*

Common Name: Scarlet Tip

Wingspan: 40-45 mm

IUCN Status: Not Evaluated (NE)

Notes: Males have white wings with bright scarlet wing tips. Females are darker with variable blackish markings on the wings. The species has seasonal variation with dry season form being reddish brown below instead of white. The species can be found in large numbers in flowering bushes. Caterpillars feed on Capparaceae (*Maerua, Boscia, Capparis* and *Cadaba*).

Male underside

Male upperside

Female upperside

Scientific Name: *Colotis ione*

Common Name: Purple tip

Wingspan: 55-60 mm

IUCN Status: Not Evaluated (NE)

Notes: An elegant large butterfly, the males have characteristic white forewings with deep shinning purple tips. The male lacks the discal spot at the end of the forewing cell while the veins of the hindwings outlined in black. The females are similar though variable with red and black wing tips. This butterfly is common, found all over the dry parts, grasslands, dry forest formations and bush with main habitat being well developed savanna. The flight is very powerful. Both sexes visit flowers. Caterpillars have been recorded on Capparidaceae (*Maerua, Capparis, Boscia, Cadaba* and *Ritchiea*).

Male underside

Male upperside

Female upperside

Female upperside

Scientific Name: *Colotis antevippe*

Common Name: Large Orange Tip

Wingspan: 30-40 mm

IUCN Status: Least Concern (LC)

Notes: The males have a prominent orange apical patch, not inwardly bordered by black scaling. The end of the cell has a black spot. Females are variable with more black markings on the wings. Seasonal variation is exhibited. Common and widespread savanna butterfly. The flight is restless and fast. Both sexes are fond of visiting flowers. Caterpillars feed on Capparidaceae (*Maerua* and *Capparis*).

Female upperside

Male upperside

Scientific Name: *Colotis evenina*

Common Name: Common Orange Tip

Wingspan: 38-45 mm

IUCN Status: Least Concern (LC)

Notes: An elegant butterfly somewhat similar to *Colotis antevippe* but differs in lacking the black spot at the end of the cell on the forewing upperside. In the male, black inwardly borders the apical patch. There is gray shading along the inner margin of the forewing upperside. The species inhabits all types of savanna, tending towards the drier rather than the wetter zones. The flight is rapid and direct covering long distances. Both sexes visit flowers. Caterpillars feed on Capparidaceae (*Maerua* and *Capparis*).

Male upperside

Female upperside

Scientific Name: *Belenois aurota*

Common Name: Caper White

Wingspan: 40-45 mm

IUCN Status: Least Concern (LC)

Notes: This beautiful butterfly has white wings with veins of the hind wing outlined in black. It has slight sexual dimorphism with females having more black markings and light yellow ground colour. Common species of savanna, also colonizing open areas of forest zone. They are involved in migration in large numbers. Caterpillars feed on *Capparis* and *Maerua*.

Male upperside

Male upper/underside

Scientific Name: *Belenois creona*

Common Name: African Caper or Common White

Wingspan: 40-45 mm

IUCN Status: Not Evaluated (NE)

Notes: The species has a broader black borders compared to the Brown-Veined White with few white markings in the black border. The underside veins are not outlined with black. Females may be creamy yellow and extensive black markings. The species prefers savanna habitat and is involved in migratory tendencies. Caterpillars feed on several species of Capparaceae including *Maerua* and *Capparis*.

Male upperside

Male underside

Female, upperside

Female, underside

Scientific Name: *Belenois gidica*

Common Name: Pointed Caper or African Veined White

Wingspan: 40-55 mm

IUCN Status: Not Evaluated (NE)

Notes: A common and widespread butterfly and highly variable. The species can be distinguished from other similar species by the pointed wings, though less apparent in females. Some forms have a grey shading on the hindwing underside and a white stripe through the cell. The main habitat is savanna, and not adapted to driest zones. It also occurs in coastal and highland forests. Both sexes visit flowers for nectar. Caterpillars feed on Capparidaceae (*Maerua, Capparis* and *Boscia*).

Male upperside

Male underside

Female upperside

Female underside

Scientific Name: *Dixeia charina*

Common Name: African Small White

Wingspan: 34-42 mm

IUCN Status: Not Evaluated (NE)

Notes: A medium sized butterfly with both sexes very variable. Some of the variations in the species maybe seasonal. Most of the male and some of the female forms are characterized by black scales on the hindwing underside mainly during dry season. The males may have black discal and post discal spots as well as large post-discal spot on the forewing. The females are very variable. The main habitat is savanna and has a slow flight. Both sexes visit flowers. Larvae feed on *Capparis citrifolia* and *Capparis sepiaria*.

Male upperside

Male underside

Female upperside

Female underside

Family Lycaenidae: The Blues And Coppers

These are some of the smallest Kenyan butterflies which usually perch with their wings closed. The antennae are dark with conspicuous rings around the shafts, a trait shared with the family Nymphalidae. The egg has a button shape and is usually laid singly. The larvae are slug shaped with a thick, tough skin. Some of the larvae form symbiotic relationships with ants. Some 10 species have so far been recorded in Kaya Kauma and all the 10 visit flowers for nectar.

Scientific Name: *Pentila tropicalis*

Common Name: Tropical Pentila

Wingspan: 30-35 mm

IUCN Status: Not Evaluated (NE)

Notes: A delicately small and pretty butterfly. The wings are pale orange, covered with small black dots. The four wings are rounded. The upper side of the four wings is black bordered at the margins. Underside of the wings marked with fine black spots. Forest butterfly that is mainly coastal, sometimes extending inlands. Sexes are similar. Can be locally common visiting flowering plants. Caterpillars feed on lichens.

Upperside

Underside

Scientific Name: *Pentila pauli*

Common Name: Spotted Pentila or Paul's Pentila

Wingspan: 30-35 mm

IUCN Status: Not Evaluated (NE)

Notes: A small and beautiful butterfly closely similar to *Pentila tropicalis*. The species is distinguished from *P.tropicalis* by the underside, which is pure orange with no dark irroration, and have prominent spots. The upper side of the four wings is black bordered at the margins. Generally associated with deciduous woodland and forest margins. Specimens flutter feebly in the shade, usually low down, often settling on grass stems. The larvae feed on dark, blue-green (black) algae (Cyanobacteria) on tree trunks.

Upperside

Underside

Scientific Name: *Baliochila minima*

Common Name: Minimal Buff

Wingspan: 24-26 mm

IUCN Status: Least Concern (LC)

Notes: A small butterfly distinguished by the broad margin on the forewings and a variable black margin on the hindwings, which is not well defined inwardly. The costa has a fair amount of black striation of an irregular nature. The females are highly variable. The main habitat is coastal forests. Not uncommon but is seasonal and occurs in localized populations. The flight is weak. Females oviposit on lichens on the bark of tree trunks and larval stage feed on tree lichens.

Male upperside

Male underside

Scientific Name: *Axiocerses punicea*

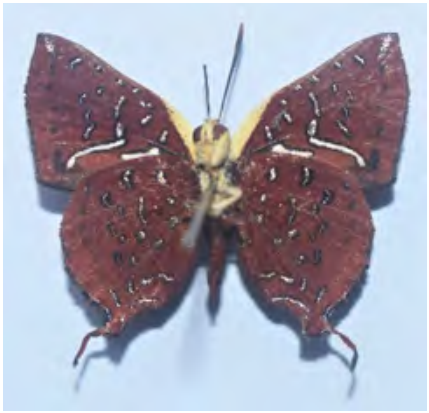
Common Name: Punic Scarlet

Wingspan: 24-31mm

IUCN Status: Least Concern (LC)

Notes: One of the finest butterfly in the genus, with deep black and red colours and a richer underside. Both sexes distinguished by the presence of a white streak in the cell of the forewing underside. Occurs in coastal forests. Most often encountered in forest glades, settled low down on broad leaves. Flowering shrubs are often visited. Caterpillars feed on *Senna* (Fabaceae) and *Ximenia caffra* (Olecaceae).

Male upperside



Male underside

Female upperside

Female underside

Scientific Name: *Hypolycaena philippus*

Common Name: Common Hairstreak

Wingspan: 30-35 mm

IUCN Status: Not Evaluated (NE)

Notes: Males have bluish-violet upper side with underside grey with fine brown lines. The females are light brown, with white patches on the hindwings. Both sexes have tails with spots at the base. The habitat consists of dry savanna to forest. Flowers are fervently visited by both sexes. The larvae, which are usually attended by ants, feed on various food plants including *Allophylus* species (Sapindaceae), *Punica granatum* (Puniaceae), *Ximenia americana* (Olacaceae).

Female underside

Female upperside

Male upperside

Scientific Name: *Leptotes pirithous*

Common Name: Common Zebra Blue

Wingspan: 21-30 mm

IUCN Status: Not Evaluated (NE)

Notes: Males are more uniformly blue above with tiny tails and a black spot on the hind wings. Females have blue and white patterning on the upper side and intricately mottled brown and white on the underside. Very common and widespread in a wide range of habitats including gardens and cultivated land. Dense forests are normally avoided. Fond of swarming around the food plant and they visit flowers for nectar. The larvae feed on a number of plants in Leguminosae including *Vigna, Indigofera, Medicago, Sesbania, Pisum,Burkea* and others.

Male underside

Female underside

Male upperside

Female upperside

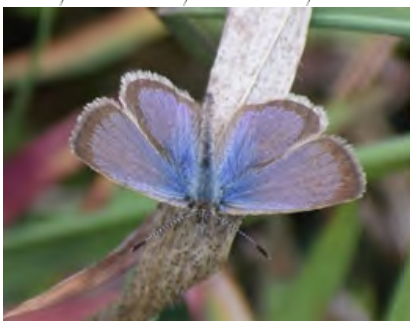
Scientific Name: *Zizula hylax*

Common Name: Tiny Grass Blue

Wingspan: 15-17mm

IUCN Status: Least Concern (LC)

Notes: A tiny, delicate and dainty butterfly. The species has characteristic black spot at the center of forewing underside. The male upper side of the wings is a soft blue and grey with a broad black margin. Females are normally dark brown, sometimes with blue markings. The undersides of the wings are grey, with black, white-ringed dots. Highly common butterfly in a wide range of habitats including lawns and cultivated gardens. On settling, individuals wave their wings from side to side. Both sexes are fond flower visitors. Food plants include various members of the family Acanthaceae. Species noted include *Hygrophila auriculata* and *Phaulopsis dorsiflora*.



Female upperside

Underside

Underside

Mating pair

Scientific Name: *Actizera stellata*

Common Name: Clover Blue

Wingspan: 13-19 mm

IUCN Status: Least Concern (LC)

Notes: An elegant, tiny butterfly unique from any other. The upperside ground colour is black and covered with minute white dots. The main habitat for the species is wetter grassland in semi-montane and montane areas. Breeds on clover growing in the lawns of gardens. Sexes are similar. Flies low down but quite fast for such a small butterfly. Both sexes feed from flowers regularly. The flight is weak and fluttering and that specimens alight frequently on the leaves or flowers of the larval host-plant. Caterpillars feed on red-flowered clover (Fabaceae), *Medicago* species (Fabaceae), *Oxalis corniculata* (Oxalidaceae) and *Trifolium africanum* (Fabaceae).

Upperside

Underside

Scientific Name: *Azanus ubaldus*

Common Name: Desert Babul Blue

Wingspan: 22 mm

IUCN Status: Not Evaluated (NE)

Notes: A small, beautiful butterfly with males at once distinguished by the blue, velvety discal patch on the forewing upperside. The size is usually smaller and the forewings more pointed. The females are normally brown and the undersides matching those of the males, but darker. The species inhabits drier habitats. Usually found flying rapidly around flowering acacia trees. This species is apparently migratory. They rest on the bark of stout branches and tree trunks. Both sexes feed from flowers, especially those of acacias, and males sometimes mud-puddle. The larvae feed on *Vachellia* and *Acacia* species (Fabaceae).

Upperside

Underside

Scientific Name: *Azanus natalensis*

Common Name: Natal Babul Blue

Wingspan: 25-28 mm

IUCN Status: Least Concern (LC)

Notes: This is the largest and the lightest of the babul blues. It is easily recognized by the very light upperside, which is translucent that the underside patterns show through. The main habitat is moist savanna. This is probably the least common species of the genus. Both sexes feed from flowers, especially those of acacias. Males' mud-puddle. The larval stages of this species feed on species of *Acacia* and *Vachellia* species (Fabaceae).

Male upperside

Female upperside

Underside

Family Nymphalidae: The Brush-Footed Butterflies

The brush-footed butterflies are the most diverse butterfly family in Kenya. They are medium to large size with black, brown and orange as the prominent colours. Eyespots are commonly found on the wings. The single character common to all brush-foots is their greatly reduced forelegs, leaving them with only two pairs of legs for walking. Females are able to use the reduced forelegs to search for host plants. Some adults specialize in feeding on tree sap, rotting fruit, and animal dung. Non-nectar feeding butterflies often have relatively short proboscises. Females lay eggs singly or in batches. The caterpillars are often covered with complex spines. Some 41 species have so far been recorded in Kaya Kauma and 24 of the 41 species visit flowers for nectar.

Scientific Name: *Danaus chrysippus*

Common Name: African Queen or African Monarch

Wingspan: 65-75 mm

IUCN Status: Not Evaluated (NE)

Notes: Beautiful distinctive butterfly with deep orange ground colour on all the wings with a broad black apical patch enclosing white spots. The species is polymorphic, occurring in several forms, in combination of orange, black and white. The species is toxic, making it unpalatable to predators. The species colouration is mimicked by other butterfly species to avoid predators. The species is found in a range of habitats, including gardens, open woodland, savanna and bush. Caterpillars primarily consume plants in the genus *Asclepias,* commonly known as milkweed containing toxic compounds.

Upperside

Underside

Female upperside

Caterpillar

Scientific Name: *Tirumala petiverana*

Common Name: African Blue Tiger

Wingspan: 75 – 80 mm

IUCN Status: Least Concern (LC)

Notes: A large elegant butterfly with all four wings having black ground colour. The wings have pale bluish semi-transparent spots and streaks. The habitat consists of Afromontane, lowland and riverine forests. The flight is usually high above the ground, fairly slow and relaxed. Males mud-puddle. Both sexes are similar and large numbers are sometimes found feeding from flowering acacia trees. It is a participant in mixed migrations. The species is mimicked by *Graphium leonidas, Graphium philonoe* and *Euxanthe* species. The caterpillars feed on family Asclepiadaceae (*Daemia, Hoya, Marsdenia* and *Pergularia*).

Upperside

Underside

Scientific Name: *Amauris niavius*

Common Name: Friar

Wingspan: 75-82 mm

IUCN Status: Not Evaluated (NE)

Notes: Unmistakable large butterfly with characteristic white hindwing underside and white markings on the forewing. Mimicked by a number of species including females of the *Papilio dardanus* and forms of *Hypolimnas*. Both sexes are similar. The butterfly is mainly forest species but can survive in cultivated areas and gardens. It flies slowly along forest roads, pausing to visit flowers. Larval food plants are milkweeds (Asclepiadaceae) including *Secamone, Tylophora, Gymnema, Marsdemia* and *Cynanchum*.

Upperside/underside

Upperside/underside

Scientific Name: *Melanitis leda*

Common Name: Common Evening Brown

Wingspan: 58-75 mm

IUCN Status: Least Concern (LC)

Notes: This is unmistakable, easily recognized butterfly with points on both the fore and hind wings. The upper sides are brown with a large orange patch surrounding a black spot with white dots. The undersides display leaf-like camouflage. The patterns on the wing shapes vary seasonally. Sexes are similar. Shy species remaining hidden in the undergrowth and leaf litter. Mostly active at dusk. Caterpillars feed on various grasses including *Setaria* species.

Upperside

Underside

Scientific Name: *Bicyclus campina*

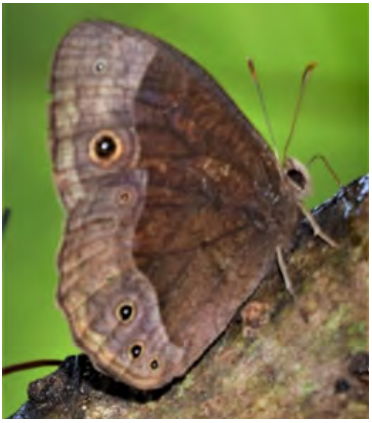
Common Name: Chirinda Bush Brown

Wingspan: 48-56mm

IUCN Status: Not Evaluated (NE)

Notes: Variable species with half of the basal underside of the wings very dark and the other half is distinctly lighter. The discal line on the forewing underside is not angled nearly 90 degrees. Sexes are similar. This is a species of the denser savanna and open forest habitats. Relatively common in coastal forests and Taita and Sagalla Hills. Caterpillars feed on various grasses belonging to family Poaceae.

Upperside



Underside

Scientific Name: *Bicyclus safitza*

Common Name: Common Bush Brown

Wingspan: 40-50 mm

IUCN Status: Least Concern (LC)

Notes: Medium sized, easily recognizable butterfly with characteristic large eyespot on the underside of the wings. There is combination of small and large eyespot on the forewing upper side, and light small apical markings. Edges of the hind wings are slightly wavy. One of the most common butterflies in Kenya, mainly a savanna species also colonizes open places and roads in forests. Larvae feed on various species of grasses (Poaceae).

Upperside

Underside

Scientific Name: *Heteropsis perspicua* (Synonymn: *Henotesia perspicua*)

Common Name: Swamp Patroller

Wingspan: 35-40 mm

IUCN Status: Least Concern (LC)

Notes: Medium size beautiful brown butterfly. The forewing has two eyespots, small and large sized. Hind wing upper side has a series of small eyespots. The underside cryptically patterned with a pale line. Sexes are similar. Widespread in open habitats. Often found in sheltered spots in bush among rocks and tall grasses. Caterpillars feed on various grasses (Poaceae).

Upperside

Underside

Scientific Name: *Charaxes varanes*

Common Name: Pearl Charaxes

Wingspan: 65-90 mm

IUCN Status: Least Concern (LC)

Notes: A distinctive large butterfly with luminous white wings with broad orange-brown bands with golden orange spots. The hind wings have a single tail. Sexes are similar. Widely spread species in range of habitats including forest, savanna, bush and woodland. The flight is fast, moving up and down a regular path. Perches in trees and visits fermenting sap sites. Caterpillars feed on Sapindaceae (*Allophyllus, Schmidelia* and *Cardiospermum*).

Upperside

Underside

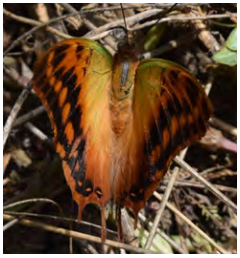
Scientific Name*: Charaxes candiope*

Common Name: Green-Veined Charaxes

Wingspan: 70-80 mm

IUCN Status: Least Concern (LC)

Notes: This is unmistakable butterfly with characteristic green colour of veins and costa of the base of the forewing underside. The green veins are visible when the butterfly is at rest with wings folded. Upper side of the wings are yellow, orange or brown. Most common of all *Charaxes*, occurring in gardens, forests and woodlands. Adults feed on dung or fermenting sap on trees. Sexes are similar. Larvae food plants are *Crotons* (Euphorbiaceae).



Upperside

Underside

Scientific Name: *Charaxes saturnus*

Common Name: Foxy Charaxes

Wingspan: 60-65 mm

IUCN Status: Not Evaluated (NE)

Notes: Pretty butterfly with dark brown wings with a broad orange band traversing all wings. Orange marginal lunules on all the four wings. Hindwings have bluish marginal markings. The hind wing has two sharply pointed tails. Widespread species occurring in woodland, savanna, bush and dry lands. Sexes are similar. Adults feed on dung or fermenting sap on trees. Caterpillars feed on a variety of plants including Malvaceae (*Hibiscus*), Euphorbiaceae (*Croton*) Leguminoceae (*Bauhimia* and *Alfzelia*).

Upperside

Underside

Scientific Name: *Charaxes castor*

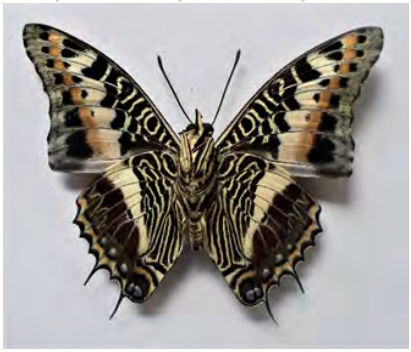
Common Name: Giant Charaxes

Wingspan: 80-105 mm

IUCN Status: Not Evaluated (NE)

Notes: A large butterfly with black ground colour traversed by yellow band at the discal area. The sexes are similar. The species is home at different habitats ranging from open savanna to closed forests. In open country, the species tends to be hill-topper while in forests; it establishes territories in forest clearings. The flight is very powerful. Adults feed on animal droppings, fermented fruits or sap exudations. Larval food plants comprise of Euphorbiaceae (*Bridelia, Tragia*) Leguminosae (*Afzelia, Bauhinia, Brachystegia, Cassia, Entada, Erythrina*) Celastraceae (*Maytenus, Elaeodedron*) Ulmaceae (*Chaetacme*), Iridaceae (*Iris*), Meliaceae (*Turraea*), Verbenaceae (*Gmeliana*) and Poaceae (*Sorghum*).

Upperside



Underside

Scientific Name: *Charaxes brutus*

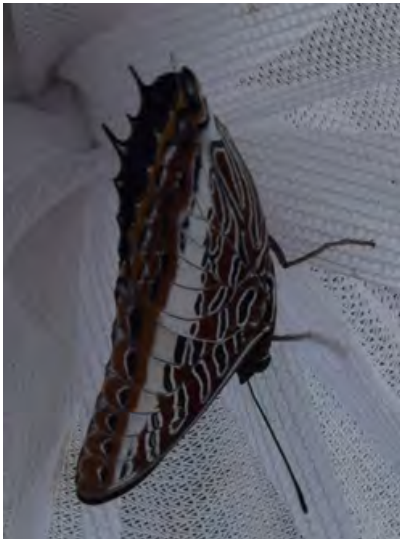
Common Name: White Barred Charaxes

Wingspan: 75-85 mm

IUCN Status: Not Evaluated (NE)

Notes: Powerfully built butterfly readily recognized by black pointed wings with white discal band crossing both pairs of wings. The white band breaks into spots on the forewing. Sexes are similar. Common and widespread species in forest, woodland and gardens. Flies quite high and fast settling on fermenting tree sap. Caterpillars feed on family Meliaceae including *Trichilia, Turraea, Melia*.

Upperside



Underside

Scientific Name: *Charaxes cithaeron*

Common Name: Blue - Spotted Charaxes

Wingspan: 70-80 mm

IUCN Status: Not Evaluated (NE)

Notes: An elegant blue charaxes with pronounced sexual dimorphism. Males are brilliant with deep cobalt wings with greenish-blue spots and gold markings on the edges of the hind wings. Females have continuous white apical band on the forewing upper side and a wide diffuse band on the hind wings. Caterpillars feed on a variety of plants including Leguminosae (*Albizia, Afzelia, Acacia*), Ulmaceae (*Hippocratea*) and Linaceae (*Hugonia*).

Male underside

Male upperside

Female upperside

Female underside

Scientific Name: *Charaxes etesipe*

Common Name: Savanna Charaxes

Wingspan: 60-68mm

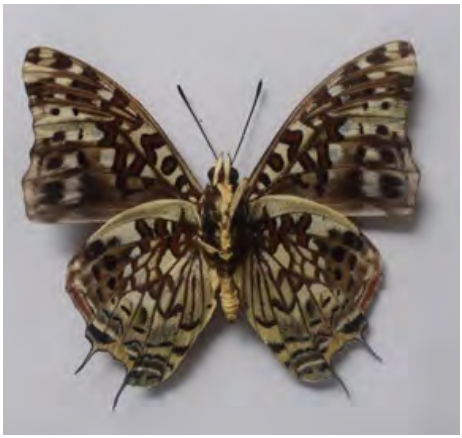
IUCN Status: Not Evaluated (NE)

Notes: This species has characteristic streaks on underside of both sexes and a cream streak along the coastal area. Sexes are dimorphic, with males being black with blue spots on the upper side while the females are black with a white discal band on all four wings. The species is mainly found in transition between evergreen forests and open savanna formations and in dense riverine vegetation. The flight is fast as with other members of the genus and feed on animal droppings, fermented fruits or sap exudations. Caterpillars feed on *Afzelia, Dalbergia, Entada* (Fabaceae), *Ceiba* (Bombaceae), *Phyllanthus, Tragia, Ricinus, Croton* (Euphorbiaceae) and *Erythroxylum* (Erythroxylaceae).

Female upperside

Female underside

Male upperside



Male underside

Scientific Name: *Charaxes jahlusa*

Common Name: Pearl Spotted Charaxes

Wingspan: 43-62 mm

IUCN Status: Not Evaluated (NE)

Notes: A small beautiful unmistakable *Charaxes.* The upper side of the species is foxy- red with black markings. The species has tails. Sexual dimorphism is slight. This species is coastal extending to Voi and Taita Hills. The species prefers open *Acacia* forest and *Brachystegia* woodland. Caterpillars feed mainly on Sapindaceae (*Haplocoelum*, *Pappea*).

Upperside

Underside

Scientific Name: *Charaxes kirki*

Common Name: Kirk's Charaxes

Wingspan: 60-68 mm

IUCN Status: Not Evaluated (NE)

Notes: The ground colour of the male is blue black and a limited greenish sheen on all the wings. Females of this species are polymorphic. The females have a very broad orange band on the forewings and a narrow white band on the hindwings. One female form has orange bands on the hindwings same as the forewings. The main habitats for this butterfly is savanna and dry forest. The flight is not fast as that of the genus. Males are avid hilltoppers and fond of sunning with the wings held two-thirds open. Both sexes come to carrion and excrements as well as fermenting fruits and sap exudations. Larval foods plants include *Acacia*, *Albizia*, *Entada*, and *Tamarindus* (Leguminosae).

Male upperside

Male underside

Female upperside

Female underside

Scientific Name: *Charaxes zoolina*

Common Name: Club-Tailed Charaxes

Wingspan: 35-40 mm

IUCN Status: Not Evaluated (NE)

Notes: A medium sized *Charaxes* with strongly falcate wing shape. The male has one long club shaped tail on the hind wings while the females have two such tails. Both sexes are seasonally polymorphic with wet and dry season forms. Dry season form is reddish-brown embellished with light brown. Wet season form is cream in colour. Occurs in drier areas, in savanna and acacia bush land and in the coastal forests. Caterpillars feed on Acacia including *Acacia brevispica* and *Acacia schweinfurthi*.

Male, dry season form

Male, wet season form

Female, dry season form

Female, wet season form

Scientific Name: *Euxanthe wakefieldi*

Common Name: Forest Queen

Wingspan: 65-90 mm

IUCN Status: Least Concern (LC)

Notes: A beautiful, large black butterfly covered with light blue markings. Species distinguished from closely looking members by the distinct band of light markings on the forewing. Sexual dimorphism is exhibited. Males have small white patch at the base of hindwings while in females, the patch is enlarged resembling members of the genus *Amauris*. This butterfly occurs in coastal forests, Shimba Hills, along Tana River and Taita Hills. The flight is slow. Males establish territories along forest edges and forest clearings. The caterpillar feed on Sapidaceae (*Sapindus, Deinbollia, Blighia*) and Leguminoceae (*Afzelia*).

Male upperside

Female upperside

Scientific Name: *Euryphura achlys*

Common Name: Mottled Green Nymph

Wingspan: 42-50 mm

IUCN Status: Not Evaluated (NE)

Notes: An elegant unmistakable butterfly, which is copper-green in colour. The male has falcate forewing with a drawn-out anal area. The females have more rounded wings. The habitat for the species is coastal forests, mainly in dense forests. The flight is low, settling on green leaves, about half to one metre above the ground. They come to rotting fruits. Larval food plants are Sapindaceae (*Deinbollia*) and Sapotaceae (*Chrysophyllum*).

Male upperside

Male underside

Female upperside

Female underside

Scientific Name: *Euphaedra neophron*

Common Name: Gold-Banded Forester

Wingspan: 55-78 mm

IUCN Status: Not Evaluated (NE)

Notes: Elegant, unmistakable butterfly with shiny blue-purple ground colour and broad yellow band across the subapical area of the forewings. The colour on the wings is at times faded. The species is common in dense forests and outside of undisturbed forests with closed canopy.

The flight is normally close to the ground, sometimes perching on leaves. This butterfly is fond of rotting fruits. Sexes are similar. The caterpillars appear flattened with a fringe of spikes running along the body length and feed on various species from Sapindaceae genus (*Allophylus, Blighia, Deinbollia, Pauillinia, Phialodiscus*).

Upperside

Underside

Caterpillar

Scientific Name: *Hamanumida daedalus*

Common Name: Guineafowl

Wingspan: 45-55 mm

IUCN Status: Not Evaluated (NE)

Notes: A very elegant butterfly impossible to confuse with any other. The upperside pattern is almost exact to that of the bird (guineafowl) which both the common and scientific name are derived. The wings are grey with black-edged white spots. The undersides are brown and leaf-like giving it good camouflage. Sexes are similar. The main habitat is open savanna formations, but may be found flying along paths in denser forests. Flies just above ground level, with a gliding flight, settling with open wings, usually on bare ground. Individuals are attracted to fermenting fruit. Specimens have been noted mud-puddling during dry periods. Males often establish and defend territories in the shade of large trees on the side of roads, perching on the ground. Caterpillars feed on species of *Combretum* and *Terminalia* (Combretaceae).

Upperside

Underside

Scientific Name: *Pseudacraea boisduvali*

Common Name: Trimen's False Acraea

Wingspan: 65-75 mm

IUCN Status: Not Evaluated (NE)

Notes: A large and beautiful butterfly, a good mimic of *Acraea egina* and *Acraea zetes*. Wings are rich orange, with variable hints of pink or black, characterized by the broad orange apical band on the forewing upperside, but which is lacking in some individuals. Sexual dimorphism is slight. The species habitat is fairly dense evergreen forest, occasionally in riverine vegetation and dense savanna. The flight is high, often basking in the sun in the morning and afternoon. The species visits flowers and damp patches. The larvae feed on *Chrysophyllum, Mimusops* (including *M. obovata* and *M. zeyheri*), *Manilkara discolour* and *Englerophytum* (including *E. magalismontanum* and *E. natalense*).

Male upperside

Male underside

Female upperside

Female underside

Scientific Name: *Byblia ilithyia*

Common Name: Joker

Wingspan: 30-35 mm

IUCN Status: Not Evaluated (NE)

Notes: A medium-sized butterfly that is very similar to the closely related African Joker. Wings patterned in orange and black spots, with the underside of the wings having silvery markings. The sub-marginal dark line continues to the apex on the underside of the forewing and has a full line of round discal spots across the upper side of the hindwings. Sexes are similar. Common species in Kenya, but most frequently encountered in dry bush and savanna regions. Caterpillars feed on Euphorbiaceae including *Tragia, Dalechampia* and *Ricinus.*

Upperside

Underside

Scientific Name: *Byblia anvatara*

Common Name: African Joker

Wingspan: 30-35mm

IUCN Status: Not Evaluated (NE)

Notes: A beautiful butterfly very similar to *Byblia ilithyia*. Wings patterned in orange and black spots, with the underside of the wings having silvery markings. The species can be told apart by the merging of the black markings on the forewing sub-apical area in *B. anvatara*. On the underside of the forewings, the sub-marginal dark line is turned inwards to the cell in *B,anvatara* while in *B.ilithyia,* the line continues to the apex. Sexes are similar. The main habitat is grassy savanna. The flight pattern is erratic and specimens keep just above ground level. Specimens settle on low vegetation, with the wings held open. Specimens may be seen feeding at muddy places, fermenting fruit, and sometimes excrement, but are seldom found feeding from flowers. Caterpillars feed on species of *Dalechampia* and *Tragia* (Euphorbiaceae).

Upperside

Underside

Scientific Name: *Neptidopsis fulgurata*

Common Name: The barred False Sailer or Malagasy Sailer

Wingspan: 56-60mm

IUCN Status: Not Evaluated (NE)

Notes: This butterfly is *Neptis*-like, distinguished from other members of the genus by the wing shape, which is more angular compared to the other species. The white spots on the upper forewing are arranged in two distinct groups. The underside has significant white markings. This butterfly is common in the coastal areas of Kenya. Flies about for long periods with extremely slow wing beats. Perches, with the wings held three-quarters open, on green leaves. Specimens are attracted to fermenting bananas and to sap exuding from the branches of trees and shrubs. Caterpillars feed on species of *Dalechampia* and *Tragia* (Euphorbiaceae).

Upperside

Underside

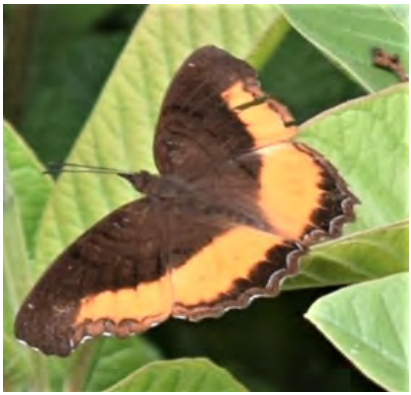
Scientific Name: *Eurytela dryope*

Common Name: Golden Piper

Wingspan: 40-55 mm

IUCN Status: Not Evaluated (NE)

Notes: A distinctive butterfly with brown streamlined wings. The broad sub-marginal bands on all four wings distinguish it from any other butterfly in Kenya. Sexes are similar. Common and wide spread butterfly in forests and savanna areas. Caterpillars feed on *Tragia* (Euphorbiaceae) and on castor oil plants (*Ricinus*).



Upperside

Underside

Scientific Name: *Eurytela hiarbas*

Common Name: Pied Piper

Wingspan: 45-55 mm

IUCN Status: Not Evaluated (NE)

Notes: A pretty, easily recognizable butterfly. Wings are a deep, velvety black with a white band running in an unbroken line from the outer part of the forewing into the hindwing.

Edges of the wings are wavy. Sexes are similar. Common and wide spread species in a range of habitats including forest, woodland, riverine areas and moist bush. Caterpillars feed on *Tragia* and *Dalechampia* (Euphorbiaceae).

Upperside

Underside

Scientific Name: *Hypolimnas misippus*

Common Name: Diadem

Wingspan: 50-60 mm

IUCN Status: Least Concern (LC)

Notes: A beautiful butterfly, exhibiting sexual dimorphism. The males have bold white spots edged with luminous purple on a deep jet-black background on the wings. The female is a perfect mimic of the common African Queen, which they are often confused. The females are orange with varying amounts of black and white markings. They have more pronounced veins and a wavy margin to the wing edges. Species found nearly anywhere, preferring mainly open formations and disturbed habitats. Caterpillars feed on a range of plants including *Portulaca* (Portulacaceae), *Asystasia, Justicia, Blepharis* and *Ruellia* (Acanthaceae).

Male upperside

Female upperside

Scientific Name: *Hypolimnas deceptor*

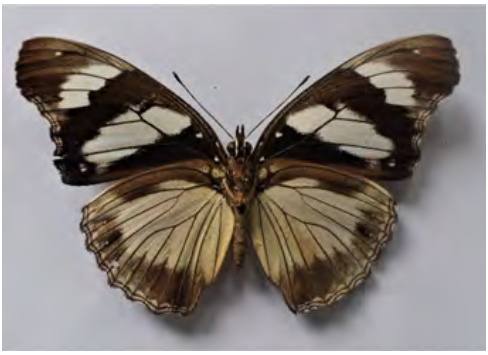
Common Name: Deceptive Eggfly

Wingspan: 60-80mm

IUCN Status: Not Evaluated (NE)

Notes: A large butterfly and an excellent mimic of genus *Amauris*. The species is black in ground colour with white markings on the forewings and a white basal band in the hindwings. In Kenyan Coast, the species mimics exclusively *Amauris niavius* or *Amauris echeria*, both having very different wing patterns. The species inhabits coastal forests and dense coastal bush. Usually flies low down, just above the ground, settling on low vegetation. When settled the wings are held two-thirds open, something which is not done by its model. Specimens often roost together in large groups in dark or shaded places. Both sexes feed from flowers. The larval food plants are species of *Laportea* (Urticaeae).

Upperside



Underside

Scientific Name: *Protogoniomorpha anacardii* (Synonymn: *Salamis anacardii)*

Common Name: Clouded Mother-of-Pearl

Wingspan: 60-70 mm

IUCN Status: Not Evaluated (NE)

Notes: The upper surface of the wings is shiny green-white with a violet sheen in the wet –season form, and pearly white in the dry season form. The fore-wing has black apical and marginal markings and a hooked apex. The under-side appears leaf-like. The species is common in dense savanna and deciduous forest. Sexes are similar. The larval food plants are Acanthaceae (*Iopsis, Asystasia, Justicia, Brillantaisia*).

Upperside

Underside

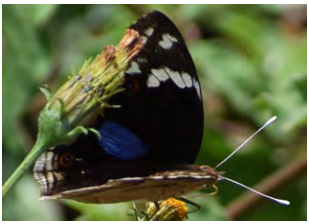
Scientific Name: *Junonia oenone*

Common Name: Dark Blue Pansy

Wingspan: 35-40 mm

IUCN Status: Not Evaluated (NE)

Notes: A common medium-sized butterfly that is easily recognizable. The wings have dark velvet-black ground colour and shiny blue patches on the hind wings. The females are less dark and the blue spots may be obscured. Have eyespots and variable white markings on the edges tips of the wings. One of the most common and well-known butterflies normally found in gardens, parks and natural habitats. Caterpillars feed on many species of Acaranthaceae.



Female upperside

Male upperside

Scientific Name: *Junonia natalica*

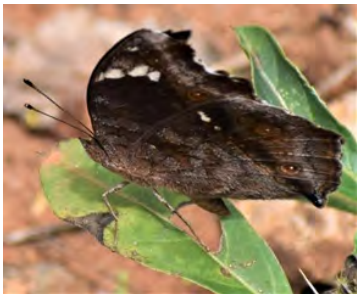
Common Name: Natal Pansy

Wingspan: 40-45 mm

IUCN Status: Not Evaluated (NE)

Notes: A pretty, medium sized butterfly. Easily recognized by the four white spots on the sub apical area of the forewing upper side. The upper sides of the wings are brown with pale orange and grey markings. The underside of the wings is brown and leaf-like. Sexes are similar. The species is common in forest and woodland areas. Common along roads in forests. Caterpillars feed on various species of Acanthaceae.

Upperside



Underside

Scientific Name: *Junonia hierta*

Common Name: Yellow Pansy

Wingspan: 35-40 mm

IUCN Status: Not Evaluated (NE)

Notes: A medium-sized butterfly with straw-yellow ground colour and a prominent blue coastal spots on the hindwings. The females have more dark markings than the males and the blue spots may be obscured. At rest, with wings folded, the butterfly appears leaf-like and is superbly camouflaged. Common and widespread in grasslands, savanna and bush. Often seen visiting flowers. Caterpillars feed on many different species of Acanthaceae.

Male upperside

Male underside

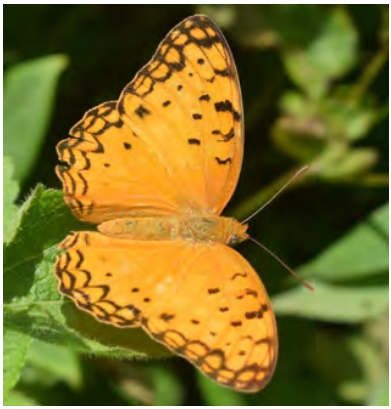
Scientific Name: *Phalanta phalanta*

Common Name: Common Leopard Fritillary

Wingspan: 40-50 mm

IUCN Status: Least Concern (LC)

Notes: An elegant medium-sized butterfly. Wings are orange in colour with fine lines and spots. The species can be distinguished from its related species by more spots in the discal area of all four wings. The underside of the wings is paler, like a dry leaf. Common and widespread species often involved in migrations. It is mainly a butterfly of open formations, but also found in dense forests. The flight is rapid and dancing. Sexes are similar. Caterpillars are gregarious and feed on a wide range of plants families including Flacourtiaceae, Celastraceae, Euphorbiaceae, Rubiaceae, Salicaceae and *Dovyalis* (Kei Apple).



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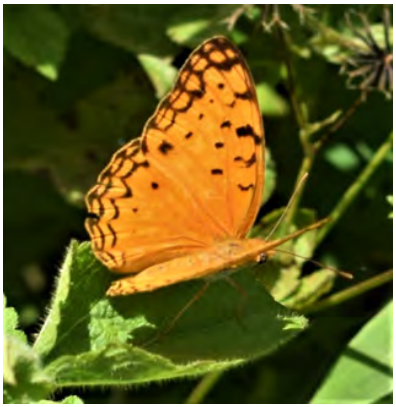


Upperside

Scientific Name: *Acraea eponina*

Common Name: Orange Acraea

Wingspan: 35-40 mm

IUCN Status: Not Evaluated (NE)

Notes: A small sized butterfly, very familiar in the region. All the four wings are bright orange with black markings on the borders. Distinguished by combination of marginal lunules on the hind wing upper side and on the underside of all four wings and the isolated apical orange patch. The abdomen is spotted with yellow. Common and wide spread in a wide range of habitats. Essentially a species of savanna. Flies low, keeping close to the ground. Both sexes are fond of visiting flowers. Larvae feed on a wide range of plants, including Malvaceae (*Hibiscus, Sida*), Solanaceae (*Nicotiana*) among others.

Upperside

Underside

Scientific Name: *Acraea anemosa*

Common Name: Broad Bordered Acraea

Wingspan: 50-64 mm

IUCN Status: Not Evaluated (NE)

Notes: A medium-sized butterfly easily distinguished from the underside of the hind wings. There is broad black border with bright white spots. A narrow orange band fringes the black border. The discal area is pink with no black spots. The basal area is black with a profusion of white spots. A butterfly of savanna and open forests. The flight is usually low and deliberate. Larvae feed on Passifloraceae (*Modecca, Adenia*), and Vitidaceae (*Vitis*).

Underside

Upperside

Underside

Scientific Name: *Acraea neobule*

Common Name: Wandering Donkey

Wingspan: 40-44 cm

IUCN Status: Not Evaluated (NE)

Notes: An elegant, medium-sized butterfly. The forewings are orange with a broad semi- transparent silvery tip. The hind wings are orange with narrow black border and spots. The underside of the wings is silvery. Common and widespread species in the genus. Inhabits open and disturbed habitats including gardens, cultivated areas, grasslands, bush and savanna. Flight is variable, either slow or fast, and sometimes erratic. Larvae feed on *Adenia, Passiflora* (Passifloraceae) and *Hybanthus* (Violaceae).

Female upperside

Male upperside

Scientific Name: *Acraea cuva*

Common Name: Chic Acraea

Wingspan: 50mm

IUCN Status: Not Evaluated (NE)

Notes: An elegant unmistakable butterfly, easily recognizable from other Kenyan Acraea. The species have exceptional large black post-discal spots on the hindwings. Usually uncommon butterfly linked to the coastal forests. They fly high up and tend to stay at tree top level. Both sexes are similar and feed from the flowers of *Lantana* species. Caterpillars feed on *Rinorea elliptica*.

Upperside

Underside

Scientific Name: *Acraea rabbaiae*

Common Name: Clear Wing Acraea

Wingspan: 45-65 mm

IUCN Status: Not Evaluated (NE)

Notes: An easily identifiable butterfly due to its transparent wings as the common name implies. The forewing has characteristic black spots at the discal line. A common species in coastal forests. The flight is high and dancing. They tend to stay at tree top level, rarely descending to within reach of a net. Both sexes are similar and visit flowers. The larvae feed on Passifloraceae (*Adenia cissampeloides* and *Basananthe zanzibarica*).

Upperside

Underside

Scientific Name: *Acraea satis*

Common Name: Coast Acraea

Wingspan: 60-63mm

IUCN Status: Least Concern (LC)

Notes: A large common butterfly in coastal forests distinguished by the broad unbroken black band at the discal area of the hindwing in both sexes. Sexual dimorphism exists with males having orange-brown colour while the females have milky-white ground colour. The main habitat consists of coastal forests, mainly in shadier parts of the forest. The flight is slow with both sexes visiting flowers. The larvae feed on family Urticaceae (*Urera hypselodendron* and *Urera trinervis).*

Male upperside

Male underside

Female upperside

Female underside

Scientific Name: *Pardopsis punctatissima*

Common Name: Polka Dot

Wingspan: 25-30 mm

IUCN Status: Not Evaluated (NE)

Notes: A small sized butterfly, appearing to be mimicked by lycaenid species of the genus *Pentila*. The species has an orange ground colour, profusely dotted with tiny black spots. The habitat is moist grassland, often close to thick bush. The flight is weak and close to the ground. Specimens frequently settle on grass stems or other low vegetation. Sexes are similar. The larvae feed on *Hybanthus capensis* (Violaceae).

Upperside

Underside

Family Hesperiidae: The Skippers

Skippers are usually small to medium sized brown butterflies with stout bodies. Some resemble moths, but unlike moths, skippers have clubbed antennae tipped with distinct hooks. Most skippers have long proboscises enabling them to feed at a wide variety of flowers. Due to their large muscle mass to wing area ratio, skippers tend to be strong flyers. Larvae and pupae protect themselves in a shelter nest or "refugium" made by folding over a leaf of their food plant.

Scientific Name: *Eretis lugens*

Common Name: Savanna Elf

Wingspan: 30-34mm

IUCN Status: Not Evaluated (NE)

Notes: A small and dark skipper butterfly closely related to other members in the genus. The species has hyaline spots on the forewings that distinguish the species. The hindwings are uniformly dark coloured. The species inhabit savanna, forest margins and dense woodland. The butterfly flies low down, settling on either the ground or on the leaves of low-growing vegetation. Adults are fond of flowers. Larvae feed on members of Acanthaceae family including *Asystasia gangetica, Asystasia mysurensis, Barleria* sp., *Dyschoriste multicaulis, Dyschoriste nagchana* and *Justicia leikipiensis*.

Upperside

Underside

Scientific Name: *Spialia colotes*

Common Name: Transvaal Grizzled Skipper

Wingspan: 21-28 mm

IUCN Status: Not Evaluated (NE)

Notes: A small-sized skipper with pointed forewings. Median band of hind wing underside composed of separate spots. The spots in the hindwings are not uniformly aligned. Relatively common in dry and moist savanna. Also, found in forest clearings. Flies low down, often resting on low shrubs or the ground in the shade of trees. Both sexes are similar and fond of flowers. Caterpillars feed on *Hibiscus* and *Pavonia* (Malvaceae).

Upperside

Underside

Scientific Name: *Pelopidas mathias*

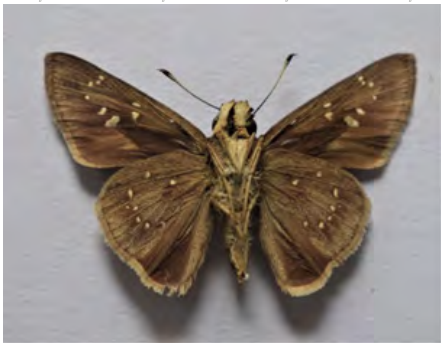
Common Name: Lesser Millet Skipper or Black Branded Swift

Wingspan: 32-36 mm

IUCN Status: Least Concern (LC)

Notes: A medium-sized, pretty skipper easily recognizable. The wings are dark brown with a series of hyaline spots. The male forewing upper side has characteristic, prominent linear scent of scales (brand). The brand is black in this species. Hind wing underside has a series of prominent white spots making a circle shape. The females lack the scent of scales on the forewings. Common butterfly species, occurring in most types of habitat. The flight is very powerful, basking in sunshine and coming to flowers. Males are territorial. Caterpillars feed on Poaceae (*Ehrharta, Zea, Andropogon, Panicum*).

Male upperside



Male underside

Kaya Kauma Forest

Farmlands around Kaya Kauma forest

Summary of butterfly species recorded in Kaya Kauma during the field surveys in 2018 and 2020

No.	Family	Scientific name	Common name	IUCN Status	2018	2020
1	Papilionidae	*Papilio constantinus*	Constantine's Swallowtail	LC	✓	✓
2	Papilionidae	*Papilio demodocus*	Citrus Butterfly/Orange Dog/Christmas Butterfly	NE	✓	✓
3	Papilionidae	*Graphium antheus*	Large Striped Swordtail	NE	x	✓
4	Papilionidae	*Graphium colonna*	Black Swordtail	NE	✓	x
5	Papilionidae	*Graphium kirbyi*	Kirby's Swordtail	NE	✓	x
6	Papilionidae	*Graphium leonidas*	Veined Swordtail	NE	x	✓
7	Papilionidae	*Graphium philonoe*	Eastern White Lady/White-Dappled Swallowtail	LC	✓	✓
8	Papilionidae	*Graphium porthaon*	Coastal or Cream-Striped Swordtail	NE	x	✓
9	Papilionidae	*Papilio dardanus*	Mocker Swallowtail /Flying Handkerchief	NE	✓	✓
10	Papilionidae	*Papilio nireus*	Narrow Green-Banded Swallowtail	NE	✓	x
11	Pieridae	*Colotis daira*	Black-Marked Orange Tip	*NE*	✓	✓
12	Pieridae	*Belenois aurota*	Caper White,	LC	✓	x
13	Pieridae	*Belenois creona*	African Caper/Common White	*NE*	✓	x
14	Pieridae	*Belenois gidica*	Pointed Caper/African Veined White	*NE*	✓	x
15	Pieridae	*Catopsilia florella*	African Emigrant	*LC*	✓	✓
16	Pieridae	*Colotis antevippe*	Large Orange Tip	*LC*	✓	x
17	Pieridae	*Colotis auxo*	Yellow Orange Tip	*NE*	✓	x
18	Pieridae	*Colotis danae*	Scarlet Tip	*NE*	✓	x
19	Pieridae	*Colotis eucharis*	Sulphur Orange Tip	*NE*	✓	x
20	Pieridae	*Colotis euippe*	Round Winged Orange Tip	*LC*	✓	x
21	Pieridae	*Colotis evagore*	Tiny Orange Tip	*LC*	✓	x
22	Pieridae	*Colotis evenina*	Common Orange Tip	*LC*	x	✓
23	Pieridae	*Colotis ione*	Purple Tip	*NE*	✓	✓
24	Pieridae	*Colotis regina*	Queen or Regal Purple Tip	LC	✓	x
25	Pieridae	*Colotis vesta*	Veined Golden Arab/Veined Orange	NE	✓	x
26	Pieridae	*Dixeia charina*	African Small White	NE	✓	x
27	Pieridae	*Eronia cleodora*	Vine Leaf Vagrant	NE	✓	✓
28	Pieridae	*Nepheronia thalassina*	Blue or Cambridge Vagrant	NE	✓	✓
29	Pieridae	*Pinacopteryx eriphia*	Zebra White	LC	✓	x
30	Lycaenidae	*Actizera stellata*	Clover Blue	LC	✓	x
31	Lycaenidae	*Axiocerces punicea*	Punic Scarlet	LC	✓	x
32	Lycaenidae	*Azanus natalensis*	Natal Babul Blue	LC		✓
33	Lycaenidae	*Azanus ubaldus*	Desert Babul Blue	NE	✓	x
34	Lycaenidae	*Baliochila minima*	Minimal Buff	LC	✓	x
35	Lycaenidae	*Hypolycaena philippus*	Common Hairstreak	NE	✓	x
36	Lycaenidae	*Leptotes pirithous*	Common Zebra Blue	NE	✓	x
37	Lycaenidae	*Pentila pauli*	Spotted Pentila/Paul's Buff	NE	✓	x
38	Lycaenidae	*Pentila tropicalis*	Tropical Pentila	NE	✓	x
39	Lycaenidae	*Zizula hylax*	Tiny Grass Blue	LC	✓	x
40	Nymphalidae	*Acraea anemosa*	Broad Bordered Acraea	NE	✓	✓
41	Nymphalidae	*Acraea cuva*	Chic Acraea	NE	✓	x

42	Nymphalidae	*Acraea eponina*	Orange Acraea	NE	✓	x
43	Nymphalidae	*Acraea neobule*	Wondering Donkey	NE	✓	x
44	Nymphalidae	*Acraea rabbaiae*	Clear Wing Acraea	NE	✓	x
45	Nymphalidae	*Acraea satis*	Coast Acraea	LC	✓	x
46	Nymphalidae	*Amauris niavius*	Friar	NE	x	✓
47	Nymphalidae	*Bicyclus campina*	Chirinda Bush Brown	NE	✓	x
48	Nymphalidae	*Bicyclus safitza*	Common Bush Brown	LC	✓	✓
49	Nymphalidae	*Byblia anvatara*	African Joker	NE	✓	x
50	Nymphalidae	*Byblia ilithyia*	Joker	NE	✓	x
51	Nymphalidae	*Charaxes brutus*	White Barred Charaxes	NE	✓	✓
52	Nymphalidae	*Charaxes candiope*	Green-Veined Charaxes	LC	✓	✓
53	Nymphalidae	*Charaxes castor*	Giant Charaxes	NE	✓	x
54	Nymphalidae	*Charaxes cithaeron*	Blue Spotted Charaxes	NE	✓	✓
55	Nymphalidae	*Charaxes etesipe*	Savannah Charaxes	NE	✓	✓
56	Nymphalidae	*Charaxes jahlusa*	Pearl Spotted Charaxes	NE	✓	✓
57	Nymphalidae	*Charaxes kirki*	Kirk's Charaxes	NE	✓	✓
58	Nymphalidae	*Charaxes saturnus*	Foxy/ Koppie Charaxes	NE	✓	
59	Nymphalidae	*Charaxes varanes*	Pearl Charaxes	LC	✓	✓
60	Nymphalidae	*Charaxes zoolina*	Club-Tailed Charaxes	NE	✓	✓
61	Nymphalidae	*Danaus chryssippus*	Common Tiger/ African Queen	NE	✓	✓
62	Nymphalidae	*Euphaedra neophron*	Gold Banded Forester	NE	✓	✓
63	Nymphalidae	*Euryphura achlys*	Mottled Green Nymph	NE		✓
64	Nymphalidae	*Eurytela dryope*	Golden Piper	NE	✓	✓
65	Nymphalidae	*Eurytela hiarbas*	Pied Piper	NE	✓	x
66	Nymphalidae	*Euxanthe wakefieldi*	Forest Queen	LC	✓	x
67	Nymphalidae	*Hamanumida daedalus*	Guineafowl	NE	✓	x
68	Nymphalidae	*Henotesia perspicua*	Swamp Patroller	LC	✓	x
69	Nymphalidae	*Hypolimnas deceptor*	Deceptive Eggfly	NE	✓	x
70	Nymphalidae	*Hypolimnas misippus*	Diadem/Danaid Eggfly	LC	✓	x
71	Nymphalidae	*Junonia hierta*	Yellow Pansy	NE		✓
72	Nymphalidae	*Junonia natalica*	Natal Pansy	NE	✓	✓
73	Nymphalidae	*Junonia oenone*	Dark Blue Pansy	NE	✓	
74	Nymphalidae	*Melanitis leda*	Common Evening Brown	LC	✓	✓
75	Nymphalidae	*Neptidopsis fulgurata*	Malagasy Sailer	NE	✓	✓
76	Nymphalidae	*Pardopsis punctatissima*	Polka Dot	NE	✓	x
77	Nymphalidae	*Phalanta phalanta*	Common Leopard Fritillary	LC	✓	x
78	Nymphalidae	*Pseudacraea boisduvali*	Trimen's False Acraea	NE	✓	x
79	Nymphalidae	*Protogoniomorpha anacardii*	Clouded Mother-of-Pearl	NE	✓	✓
80	Nymphalidae	*Tirumala petiverana*	African Blue Tiger	LC		✓
81	Hesperiidae	*Eretis lugens*	Savanna Elf	NE	✓	x
82	Hesperiidae	*Pelopidas mathias*	Lesser Millet Skipper/ Black Branded Swift	LC	✓	x
83	Hesperiidae	*Spialia colotes*	Transvaal Grizzled Skipper	NE	✓	x

Key

LC-Least Concern

NE- Not Evaluated

✓-Presence

x-Absence

GLOSSARY OF TERMS

Abdomen: One of the three body regions of an insect, composed of ten segments in butterflies. The last three segments are modified to form the sexual organs (genitalia).

Anal angle: Angle of wing formed by the outer margin and inner margin

Antenna: A pair of multi-segmented sensory limbs on the head of insects, also referred to as feelers.

Caterpillar: Larval form in butterflies.

Cell: A space in the wing entirely surrounded by veins.

Chorion: The shell of the insect egg.

Dimorphic: Having two distinctively different forms within a species. Sexual domorphism is where the form or pattern of the male differs from that of the females.

Endemic: Found only within a limited biogeographical region.

Forewing: The anterior wing

Hindwing: The posterior wing

Instar: The period between molts in the larval stage of an insect life cycle. The newly hatched caterpillars referred to as the first instar.

Larva (Larvae for plural): The caterpillar, or growing stage of the life cycle in insects, it is the feeding stage occurring between the egg and the pupa.

Metamorphosis: Distinct change in form during post embryonic development. Insects such as butterflies, with 4 stage-metamorphosis (egg, larva, pupa and adult) are said to undergo complete metamorphosis.

Mimicry: Where one species superficially resembles an unrelated model species with a protective trait such as which could be unpalatability or other defensive features.

Pheromone: A chemical substance secreted by animals. Example is the sex pheromone (attractant) released by both male and female butterflies.

Proboscis: The double coiled tongue of adult butterfly, which can be extended to take in liquids like nectar for food.

Pupa: Quiescent stage in the life cycle of insects that undergo complete metamorphosis, during which larval features are replaced by adult features.

Thorax: The middle of the three body regions in insects, which consist of three segments: the prothorax, mesothorax, and metathorax.

Wingspan: Measurement from the tip to tip of the outspread forewings.

Veins: Tubular branching rods that extend from the bases to the margins of the wings and provide support for the wing membrane.

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Events at Kaya Kauma

FIELD GUIDE TO THE BUTTERFLIES OF THE SACRED MIJIKENDA KAYA FORESTS WORLD HERITAGE SITE: KAYA KAUMA FOREST

Butterflies are beautiful insects that play a great role in our environment as plant pollinators. They provide pollination services for both farm crops and wild plants ensuring a sustainable environment. They also play a great role in human lives. They are used in insect based enterprises for livelihood support as exemplified in butterfly farming.

This book is an illustrated guide to the great diversity of butterfly species recorded in Kaya Kauma, one of the Sacred Mijikenda Kaya Forests Word Heritage Sites. All the 83 adult butterfly that the authors recorded in 2018 and 2020 are illustrated. Additionally, the guide includes an introduction on butterflies, their anatomy, life cycle and food resources.

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