Rare Palouse Plants and Prairie Restoration

Kamiak Butte, photo by Trish Heekin

Protect remnants
Restore degraded remnants
Create habitat?

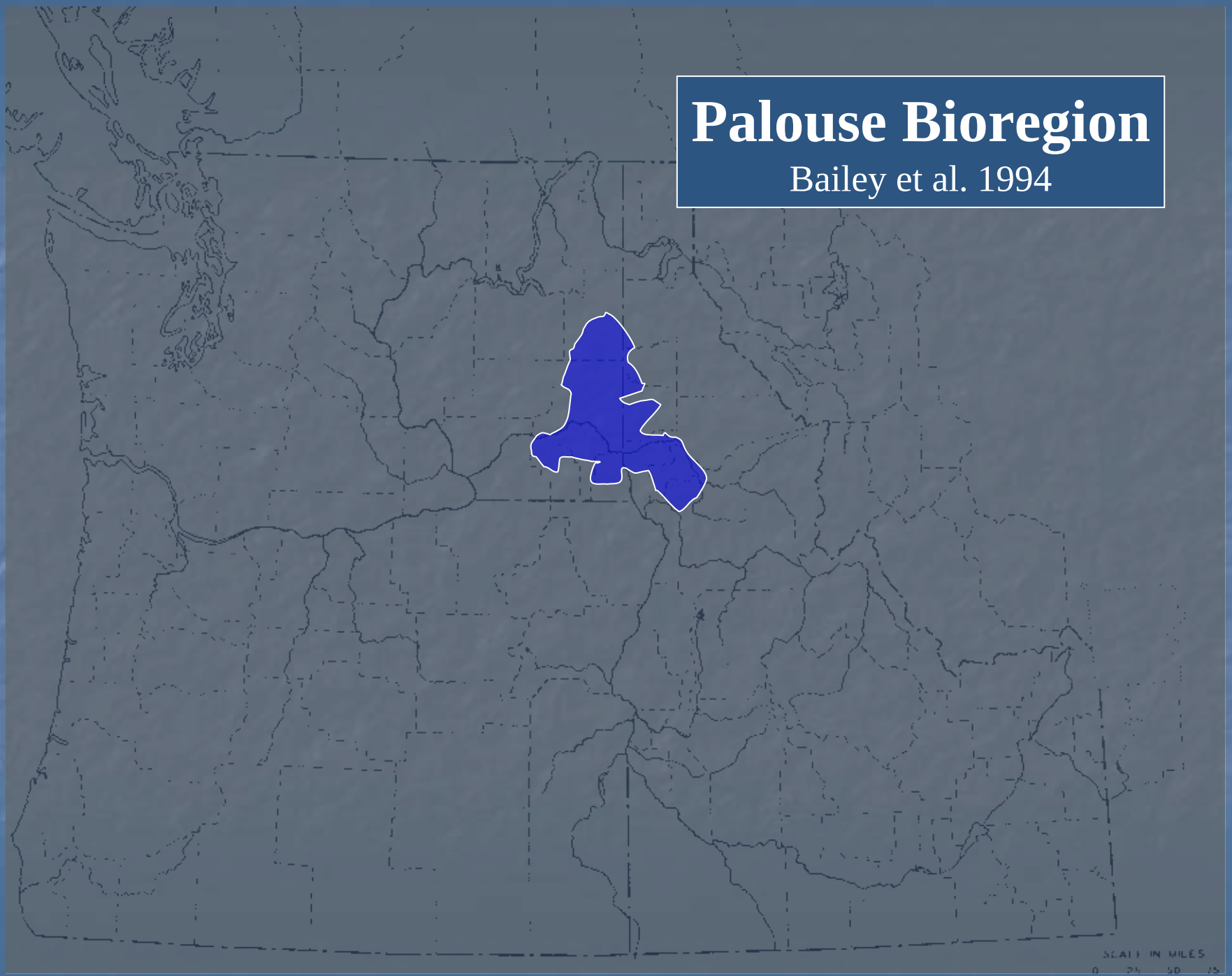
Paradise Ridge, photo by Trish Heekin

- The plants
- The communities
- Regional perspective
- Challenges
- Strategies
- Resources

Hills of windblown silt (loess)

Meadow steppe vegetation on edge of cropland

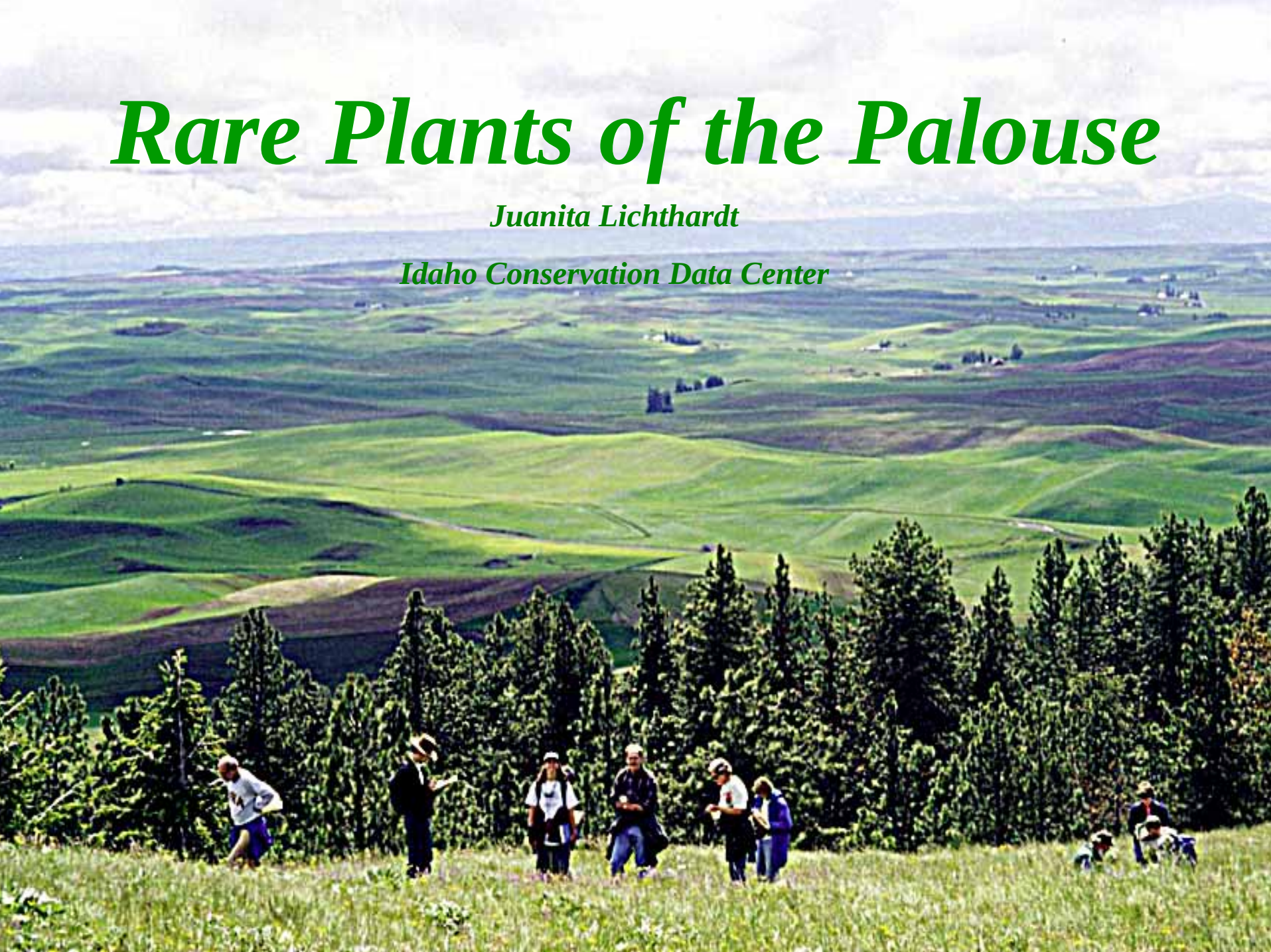
Douglas hawthorn habitat type surrounded by cropland


Palouse Bioregion
Bailey et al. 1994

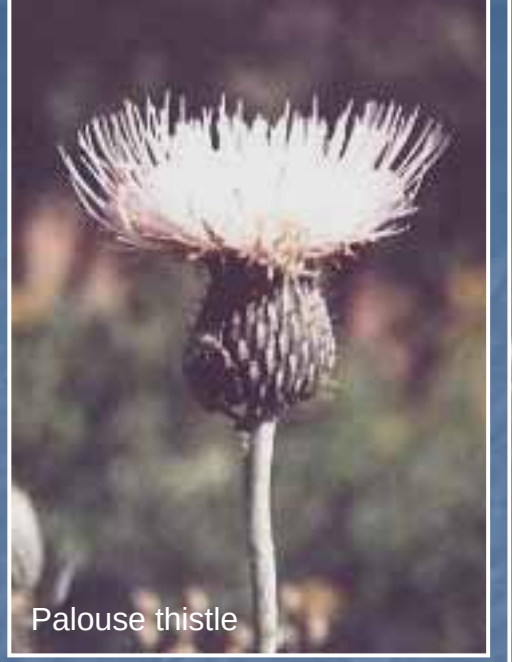
Rare Plants of the Palouse

Juanita Lichthardt

Idaho Conservation Data Center




Spalding’s catchfly


Palouse thistle


Palouse milkvetch


Broad-fruit mariposa lily


Jessica’s aster


Trifolium plumosum


Palouse goldenweed

Greenband Mariposa, photo by Dennis Newman, IDFG

Leiberg’s Tauschia, scan by Heekin

Water Howellia

List of plants could be expanded if we added the Canyon grasslands of the Snake and Clearwater Rivers, or the scablands of eastern Washington

So-called “Palouse endemics” vary greatly in their ties to the Palouse, so they will be discussed here in order from least to most restricted to the Palouse Ecoregion.

Protect remnants
Restore degraded remnants
Create habitat?

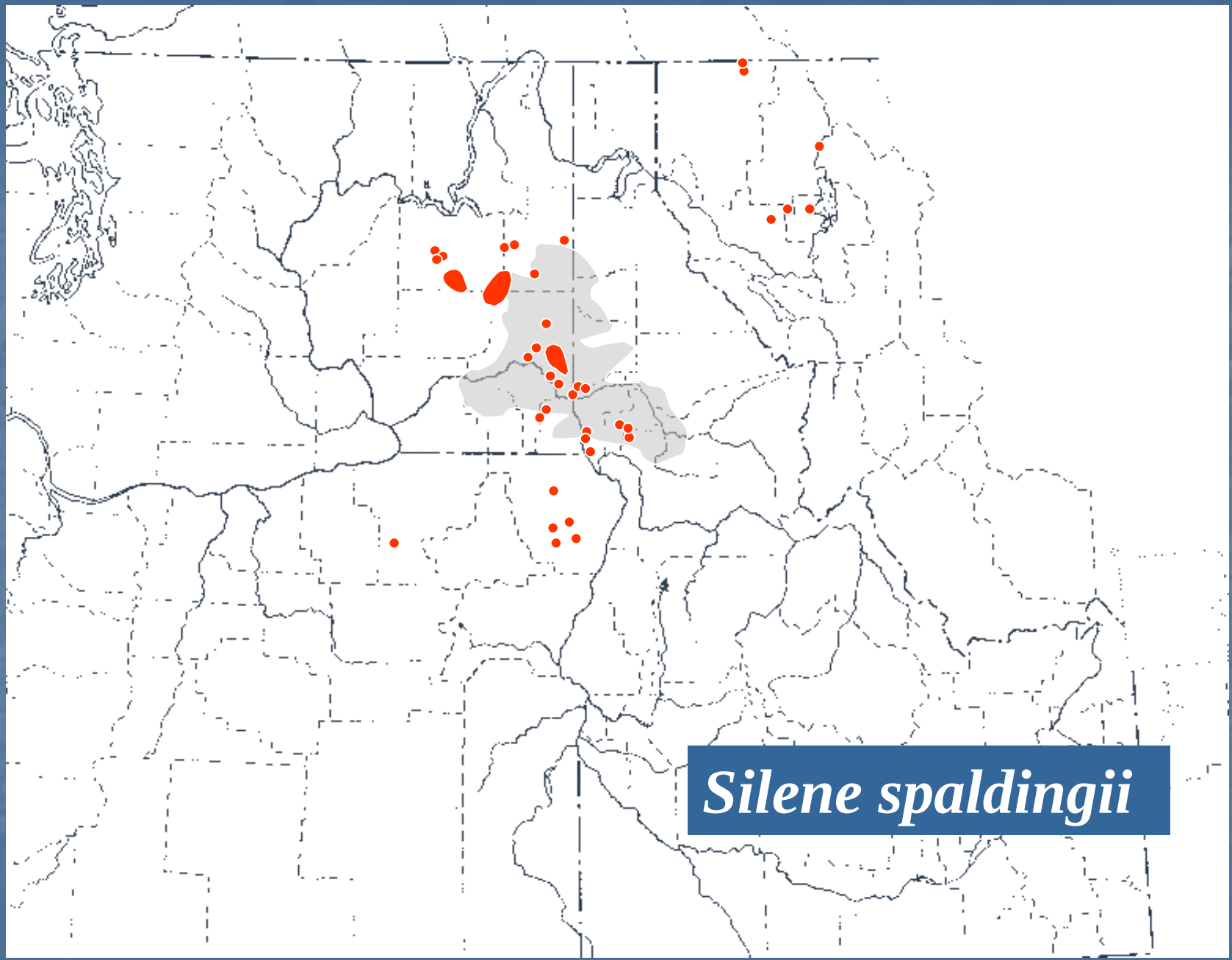
Silene spaldingii
Spalding's catchfly

Threatened
G2/S1
S2 (WA)

>100 records in four states

Palouse & Canyon Grasslands

Spalding’s Catchfly, photo by Trish Heekin

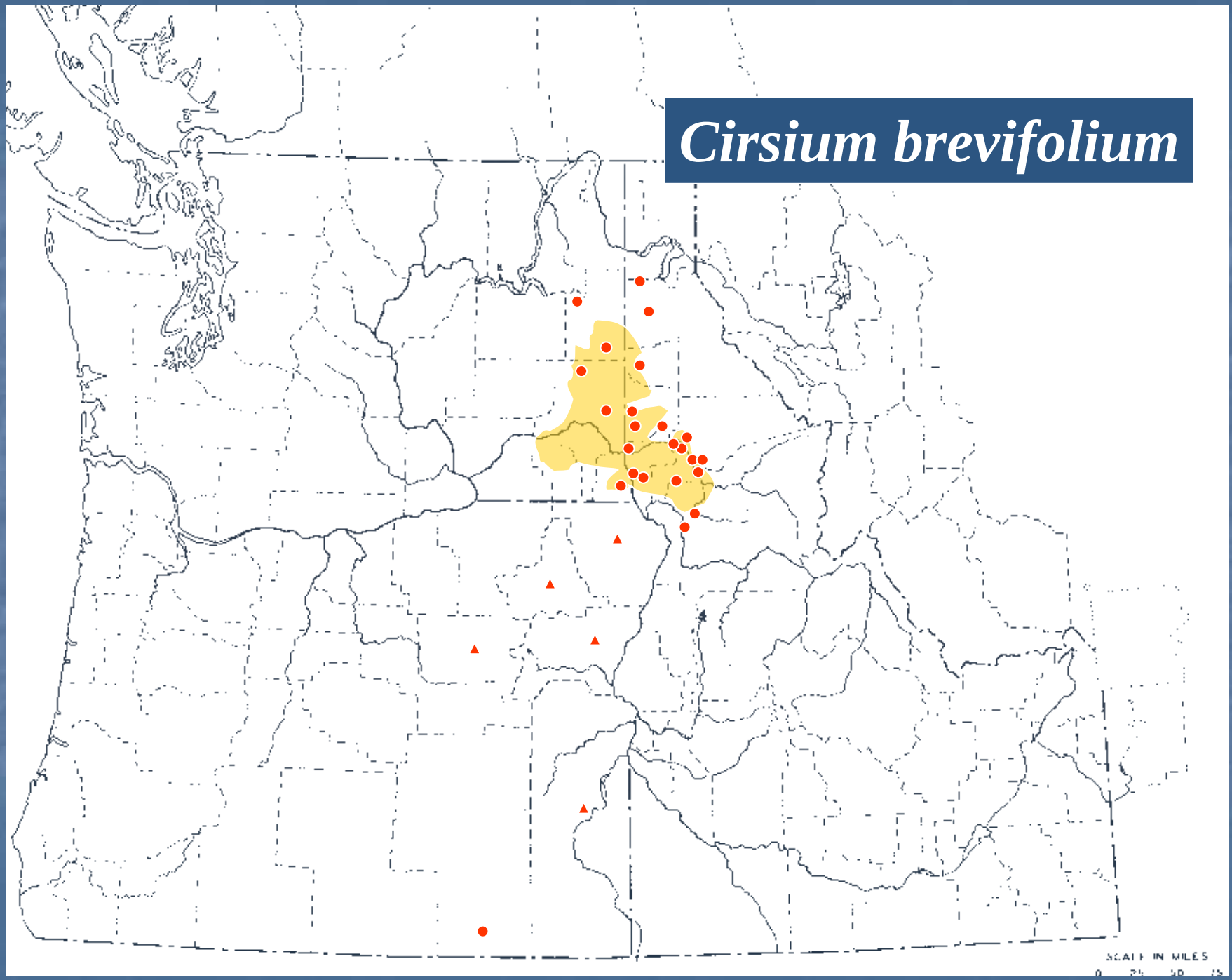

Silene spaldingii

Cirsium brevifolium
Palouse thistle

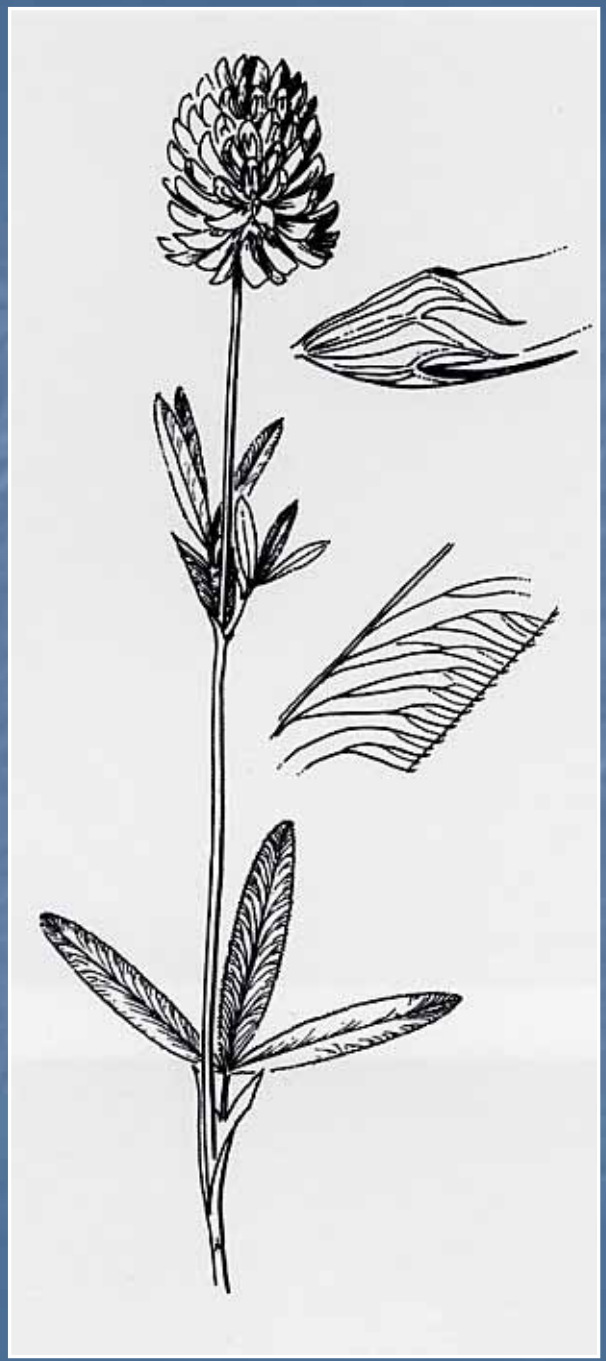
G3/S2
Not tracked in OR &WA
Grassland snowberry &
Dry forests

Dave Skinner photo

Cirsium brevifolium



Palouse Thistle, photo by Trish Heekin



Trifolium douglasii
Douglas' clover

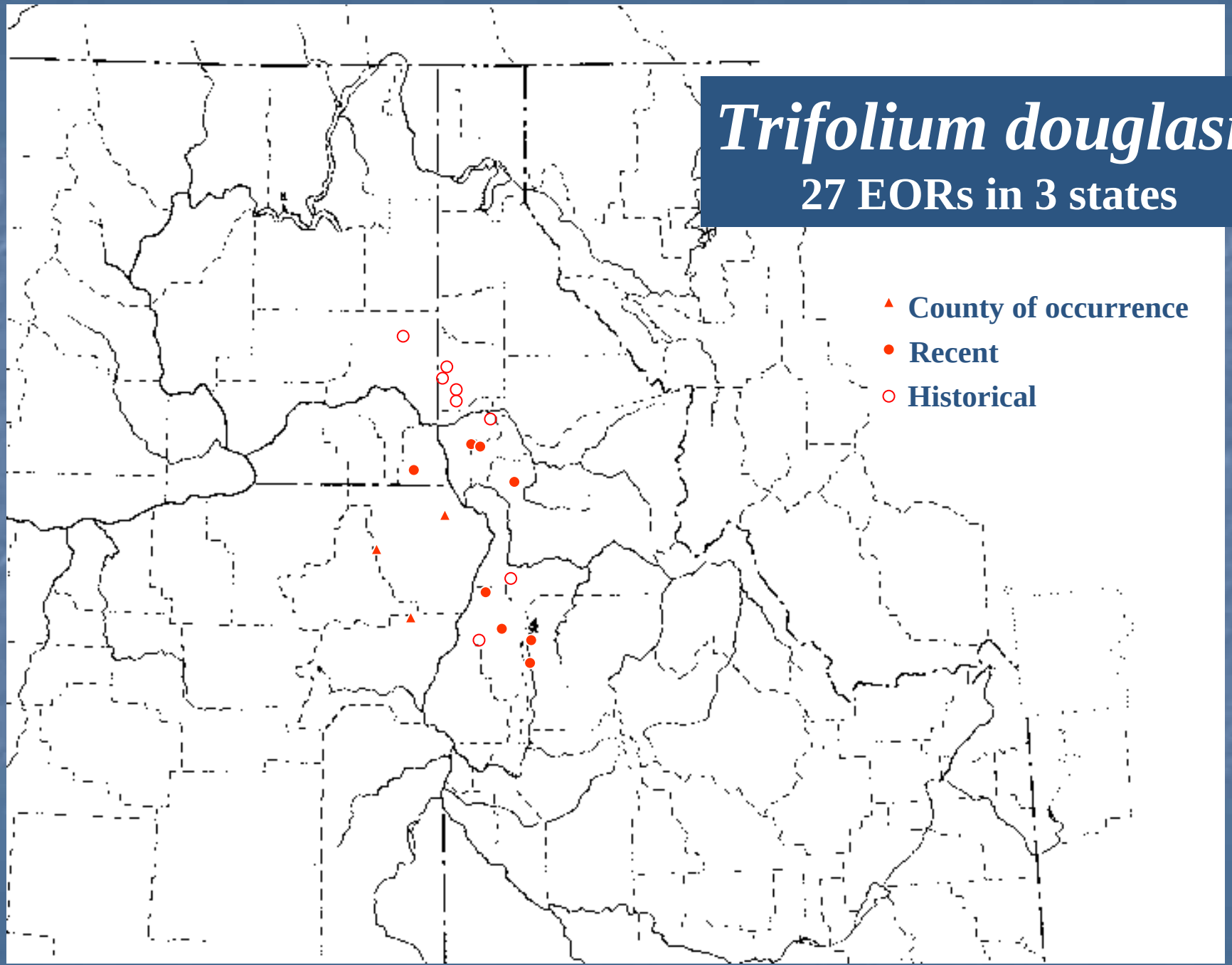
G3G4/S2
S1? (WA)
27 EORs (3 states)

Streamside meadows

Photos from Washington Natural Heritage

Trifolium douglasii

27 EORs in 3 states



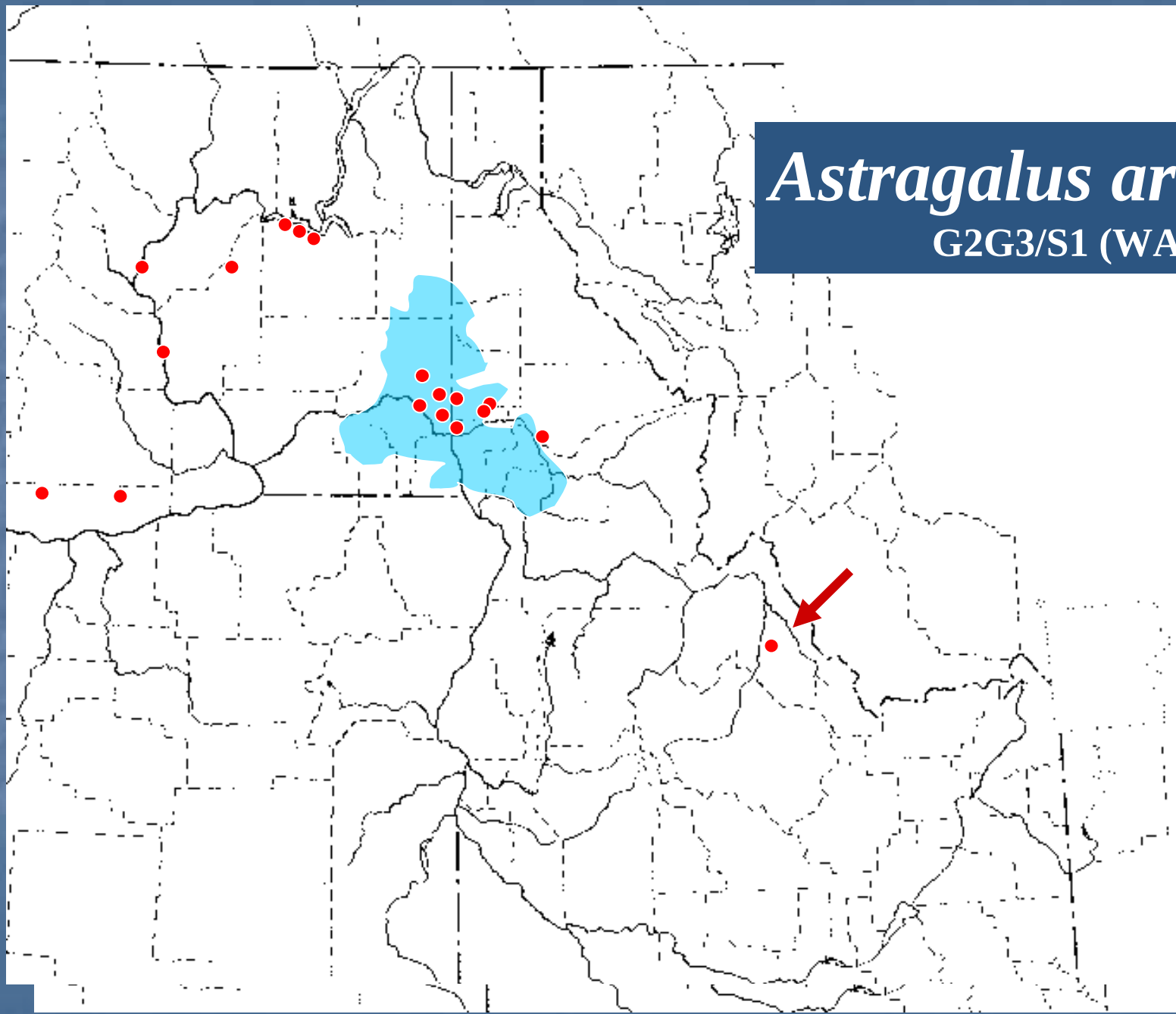
Astragalus arrectus
Palouse milkvetch

G2G3/S2 (WA)
Not tracked in Idaho

Grassland & shrubland

Dave Skinner photo

Palouse Milkvetch, Smoot Hill, photo by Trish Heekin



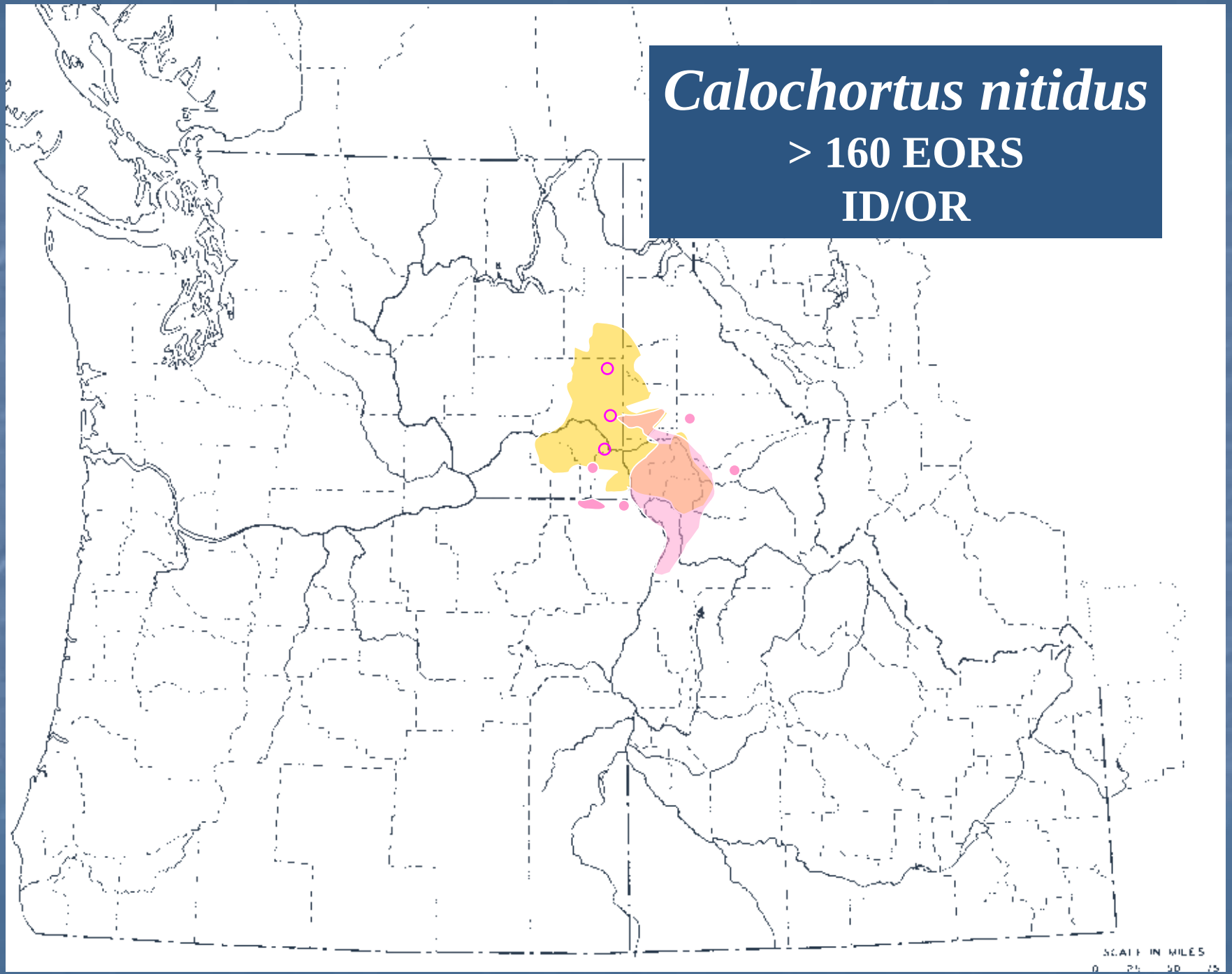
Astragalus arrectus

G2G3/S1 (WA)

Calochortus nitidus
Broad-fruit mariposa lily

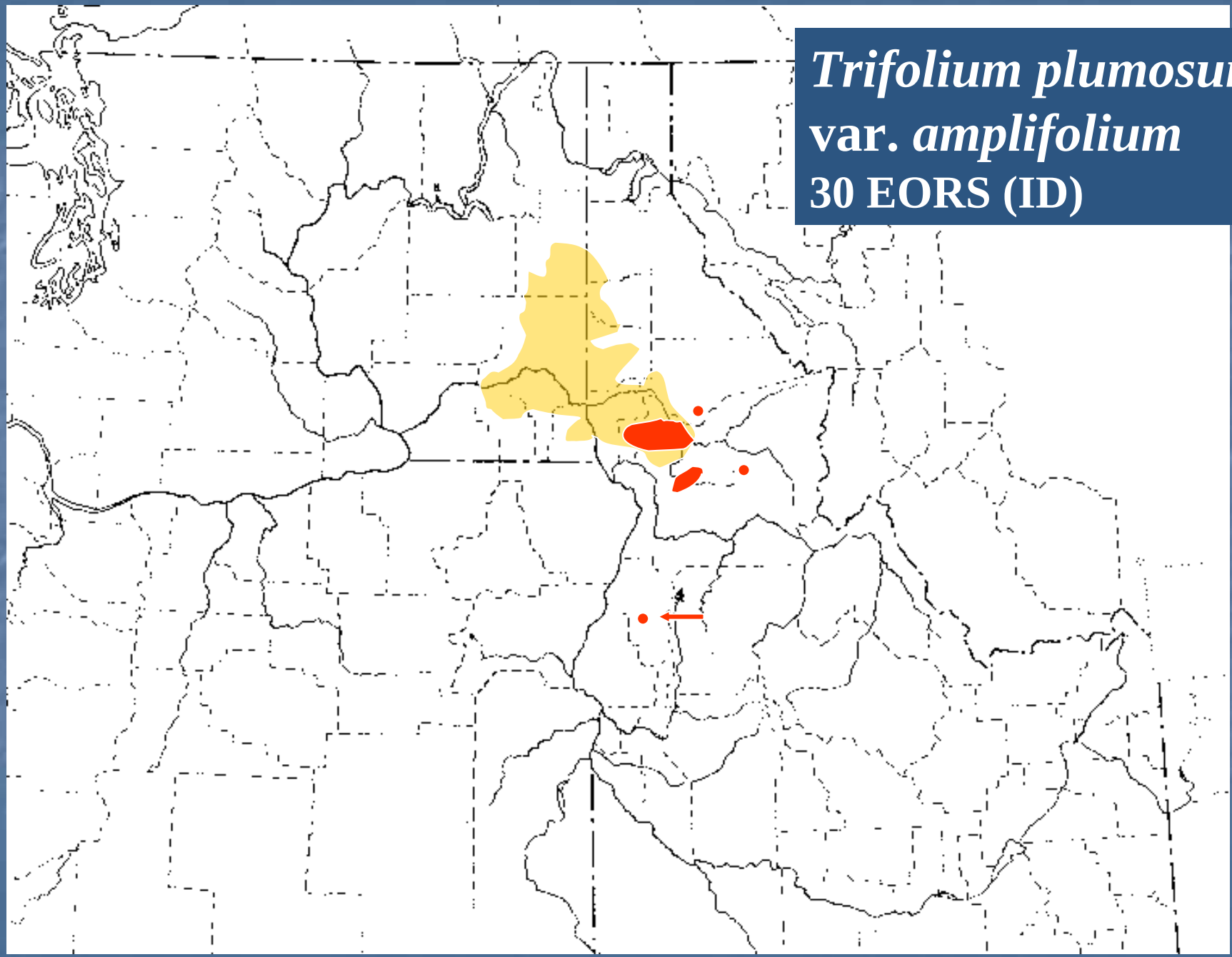
G3/S3
S1 (WA) Palouse Grassland/ Canyon Grassland/ Forest openings

Broadfruit Mariposa, photos by Trish Heekin (left) and Gerry Queener (right)


Calochortus nitidus
> 160 EORS
ID/OR
SCALE IN MILES

Trifolium plumosum var. *amplifolium*

Idaho endemic
T2/S2
30 EORs (ID)
Grassland


Trifolium plumosum
var. *amplifolium*
30 EORS (ID)

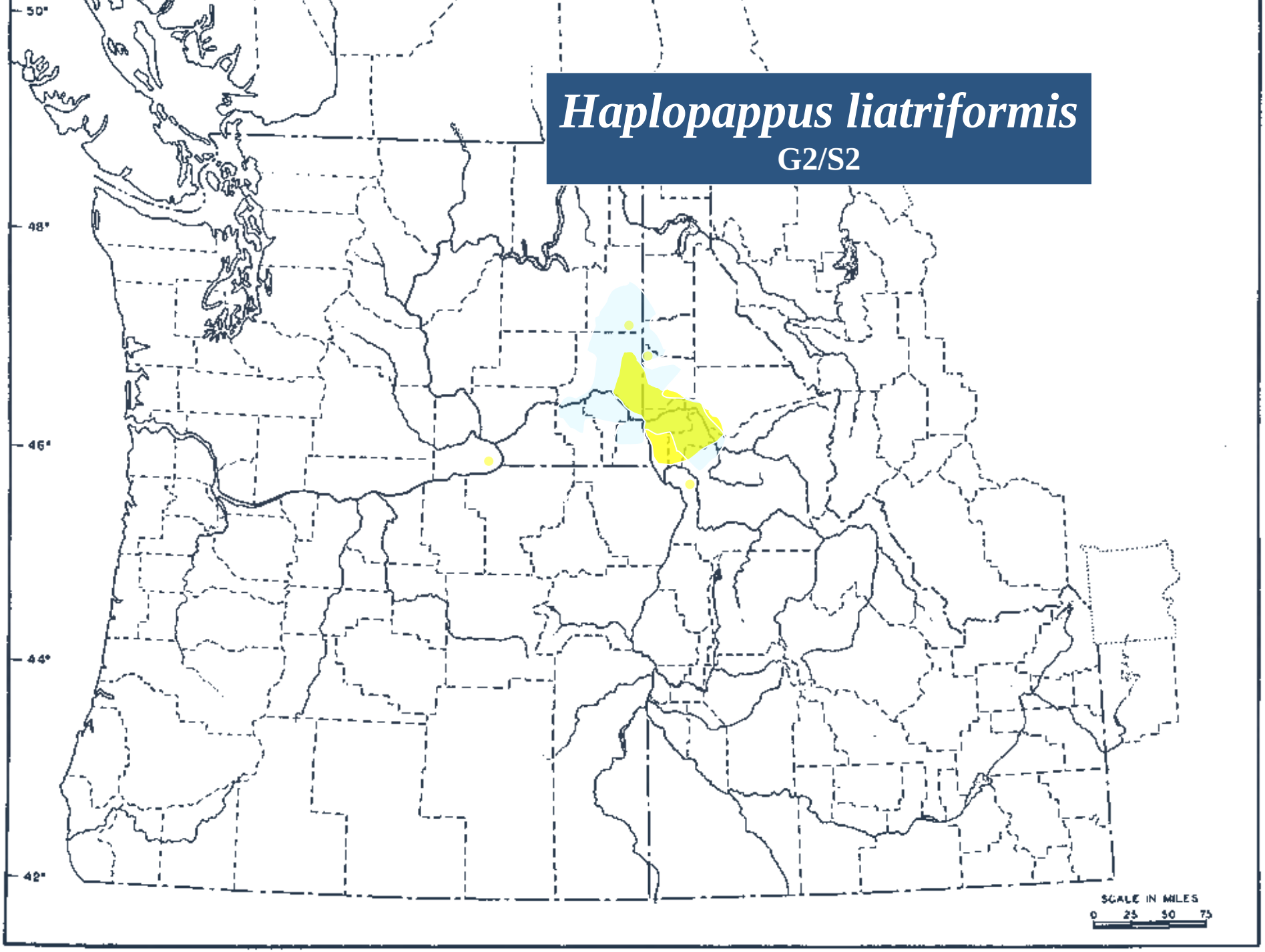
Haplopappus liatriformis
Palouse goldenweed

G2/S2
S2 (WA)
Palouse and Canyon Grasslands

Palouse Goldenweed, photos by Trish Heekin

Haplopappus liatriformis

G2/S2



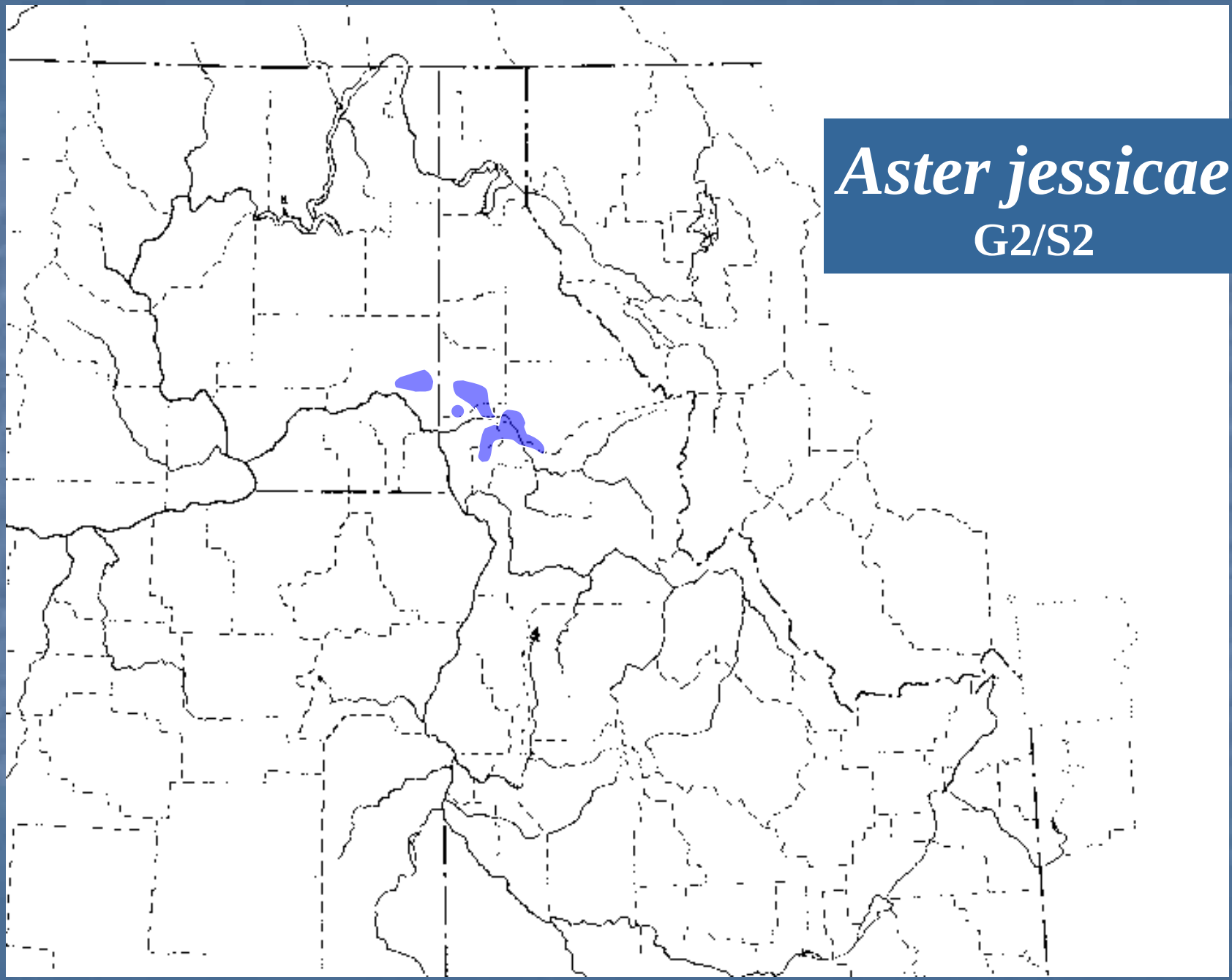
Aster jessicae
Jessica's aster

USFWS SOC
G2/S2
WA: S2
77 EORs (2 states)

Palouse woodlands

Jessica’s Aster, photos by Trish Heekin

Jessica’s Aster habitat



Aster jessicae

G2/S2

Communities rare as well -- Bluebunch wheatgrass/Sandberg's bluegrass to the west

Idaho fescue/snowberry

Ranked G1 by Heritage network

Daubenmires' meadow steppe

Photo by Trish Heekin (Paradise Ridge)

- Protect what we have left
- Restore/expand degraded remnants
- Create habitat and populations

Photo by Gerry Queener

RESTORATION OF RARE PLANTS OF THE PALOUSE

Trish Heekin
Conservation Planner
Latah Soil and Water Conservation District

Rare Plants of the Palouse

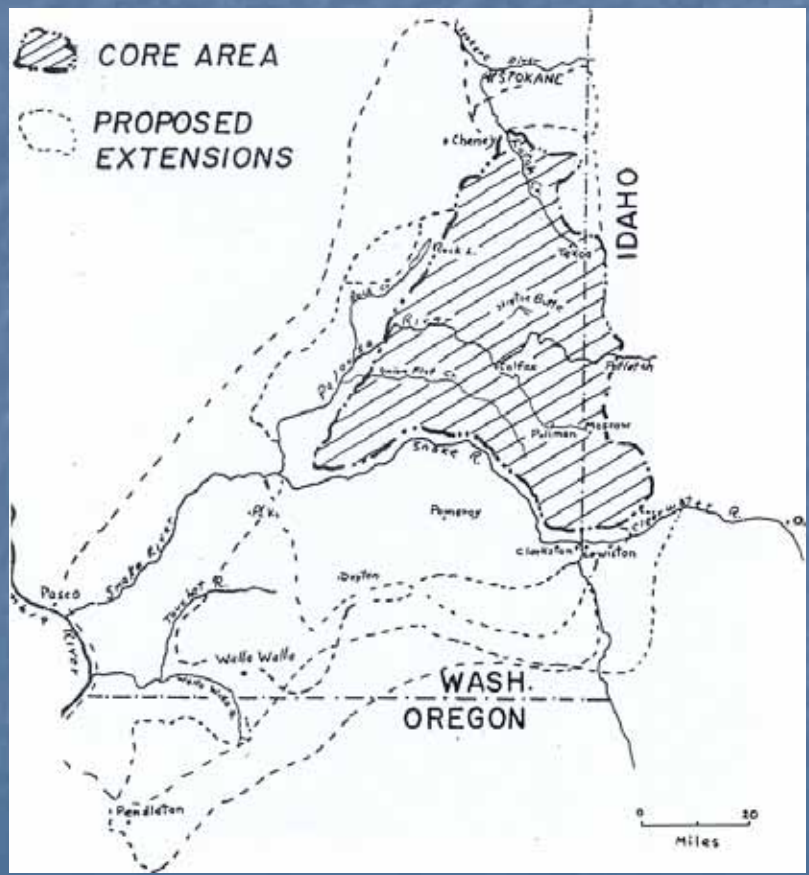
We've already covered

- What are they?
- Where do they occur?
- Why are they rare?

Gormsen Butte, photo by Trish Heekin

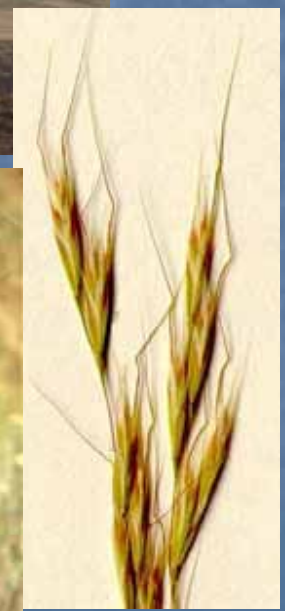
Palouse Prairie
Endangered Ecosystem

- Less than 1 percent of the 16,000 square kilometers remains
- Agricultural conversion no longer the major threat to persistence of remnants

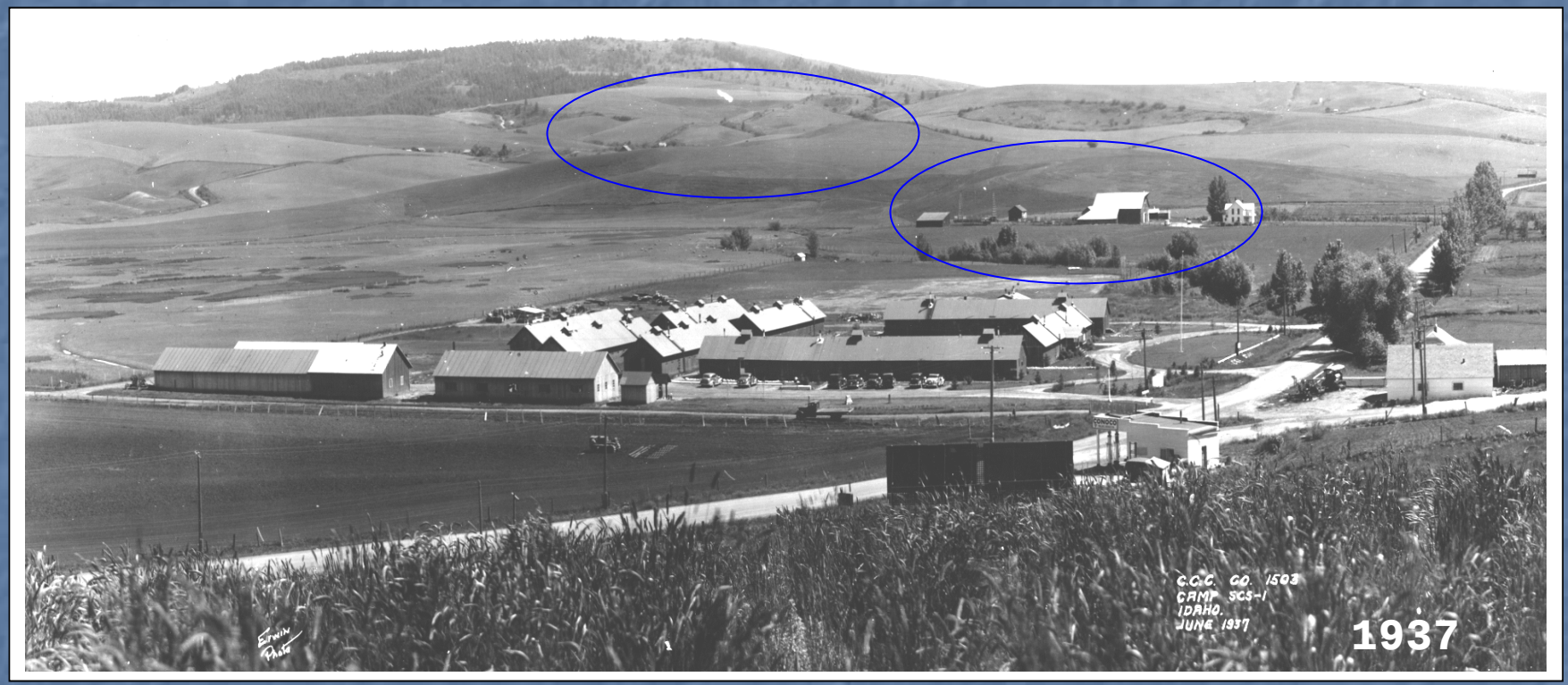


Continuing threats to Palouse Prairie remnants

- Invasive species
- Residential development
- Roads, transport
- Interactions
- Poor or uninformed management



Effects of fire suppression??



Note plant community on Cameron Remnant, a mix of herbaceous and woody species; remnant is in upper right quadrant, near top of ridge

In the mid-1980's there was still a large extent of herbaceous vegetation, including elk sedge/Idaho fescue groundcover

Also note absence of large pines and firs on Paradise Ridge

Effects of fire suppression??

Note change in plant community on Cameron remnant; increase in woody species (primarily Douglas Hawthorn); loss of elk sedge in the groundcover. Also note increase of large, mature pines and firs on Paradise Ridge; also note that areas on Paradise Ridge have filled in with conifers

Photo by Trish Heekin

Palouse Prairie
Endangered Ecosystem

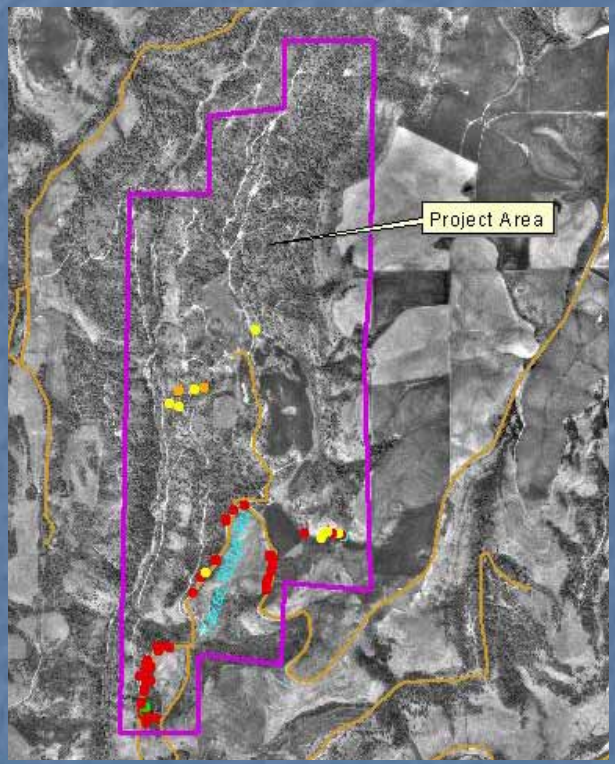
- Persistence of suite of rare and one listed plant depends on persistence of habitat
- Habitat
  - fragmented and degraded
  - isolated and scattered across landscape
  - increasingly threatened
  - poorly understood, unappreciated
  - reduced to point ecosystem functions lost?
- Zoning ordinances encourage destruction

Palouse Prairie
Endangered Ecosystem

- Limited research to date shows retention of some unique features, functions
- More research is needed

Photos by Trish Heekin and Amy Pocewicz

Challenges



- Report new populations
- Identify remnant locations
- Rehabilitate remnants
- Research
- Recreate plant community
- Expand and buffer
- Provide permanent protection

Map by Trish Heekin

Education and Appreciation

Partners

- Palouse Prairie Foundation
- IDFG
- LSWCD
- Landowners
- UI Stillinger Herbarium

Photos by Trish Heekin

Challenges

- Meadow steppe
- Need seeds of forbs

Paradise Ridge, photo by Trish Heekin

Seed Increase

Partners

- Palouse Prairie Foundation
- LSWCD
- USFWS
- Landowners
- Palouse Prairie Natives

Photos by Trish Heekin

Map the Palouse

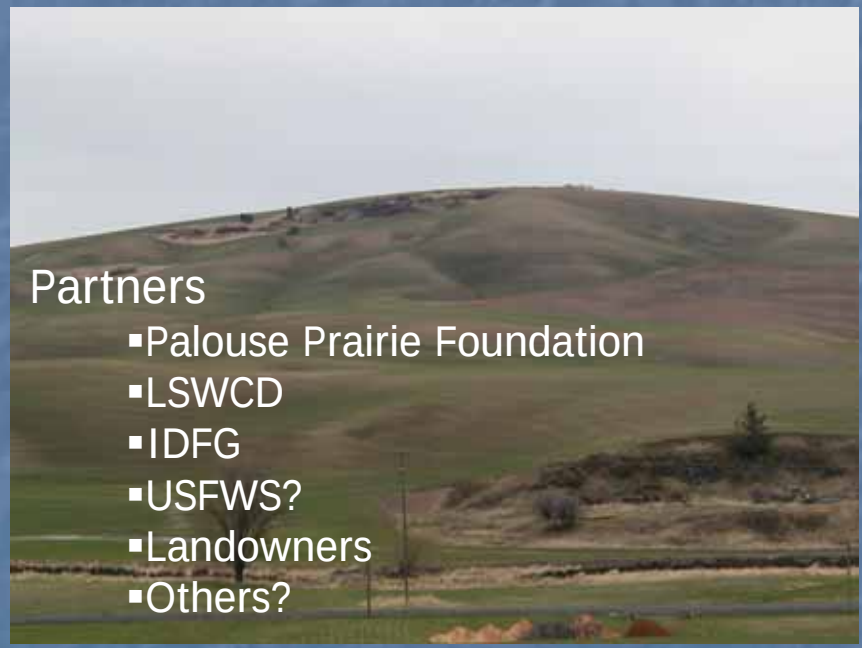
- Identify, digitize, contact (private land)
- Visit sites
  - Evaluation
  - Education, awareness
  - Appreciation
  - Management
  - Cost-share

Photos by Trish Heekin

Map the Palouse, cont

- GIS layer available
  - Researchers
  - Agencies
  - Planning and Zoning
- Prioritize
  - Protection
  - Management
  - Expansion

Expand to other areas



Research

- Experimental plots
  - Restoration techniques
  - Propagation requirements
  - Management of invasive species
- University of Idaho IGERT, WSU
  - Beetles, pollinators
  - Soil properties
  - Tropic levels, interactions

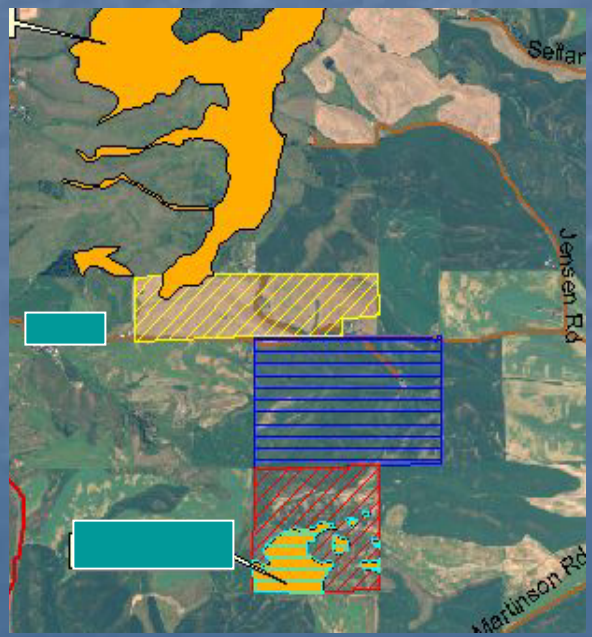
Partners

- Cooperators
- Palouse Prairie Foundation
- LSWCD
- IDFG
- USFWS?
- Others?

Sites for Restoration

- Identify
- Rehabilitate
- Expand
- Buffer
- Reconnect
- Establish Recovery sites for rare plants
- Provide long-term protection

Long-Term Protection



- Education, appreciation
- Ecologically-sensitive weed management
- Cost-share for restoration
- Conservation easements donation or purchase
- Dedicated purchase

Photo, map by Trish Heekin

Summary

- Many avenues to conservation, restoration, wildlife linkages on private working lands
- Prioritize efforts to focus on existing remnants of endangered ecosystems
- Seek ways to help farmers and ranchers benefit economically from the goods and services they provide the community as a whole
  - Soil and water quality
  - Fish and wildlife habitat
  - Permanent protection and management of native plant communities, wetlands, and riparian areas

Getting Started

- Work with local landowners in partnership for conservation and restoration
- Help landowners make improvements in conservation practices by helping them with both technical and financial assistance
- Seek out and coordinate cooperative financial and technical assistance from agencies, non-profit organizations, volunteers, and researchers

Getting Started

- Accomplish multiple objectives with funding sources
- Match up multiple cooperative funding opportunities with landowner objectives and natural resource goals
- Look into the USDA NRCS Conservation Security Program (limited to producers)
- Investigate the opportunities with your local Conservation District

Palouse Prairie Foundation

Smoot Hill, photo by Trish Heekin

Mission

To promote preservation and restoration of native Palouse Prairie ecosystems in Latah and Whitman counties (in Idaho and Washington), through public awareness education, literature resource, encouraging responsible local seed production, and acting as a leader or consultant in Palouse Prairie restoration efforts.

Formed in April 2001

Non-Profit Organization

Latah Soil and Water Conservation District

Mission

Lead local efforts to promote the stewardship of natural resources, through the development of comprehensive plans and the implementation of strategies for economic and ecological sustainability, on behalf of our citizens, through the coordination of leadership, information and funding.

Latah Soil and Water Conservation District, cont

The District Board is made up of volunteer supervisors, who are elected by the public to lead local efforts to promote stewardship of natural resources

Cooperative conservation

Voluntary, locally-led,

incentive-based conservation on private lands

Seek and facilitate

technical and financial assistance

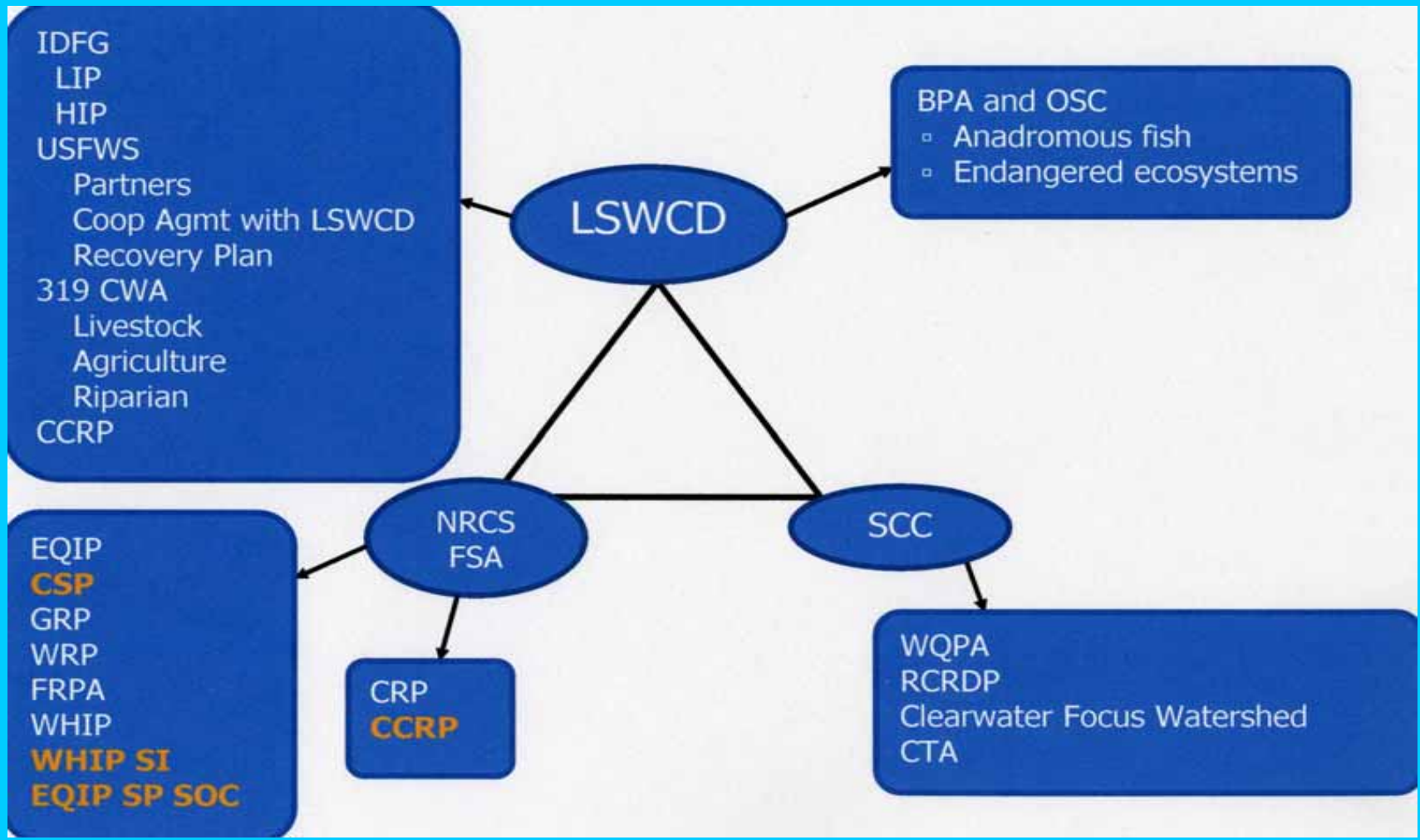
Latah Soil and Water Conservation District

Resource Conservation Plan

Objective E6 – Support local efforts to protect/enhance3 critically endangered, endangered and threatened habitats.

Task E6-01 – Support efforts to protect and enhance the remaining remnants of the Palouse Prairie.

Latah Soil and Water Conservation District
Multiple funding resources



Conservation Easements

- Possibility exists to conserve, protect, and restore about 1,500 acres of Palouse Prairie, an endangered ecosystem
- All in private ownership
- Interest in permanent conservation easements
- Funding for re-establishing native plant communities on cropland is available
- However, long-term protection of large, good condition existing remnants and restored zones that connect them should be a higher priority for funding
- Palouse Land Trust, local non-profit land trust

Smoot Hill, photo by Trish Heekin