Supporting Pollinator Adaptation Needs in the Sky Islands

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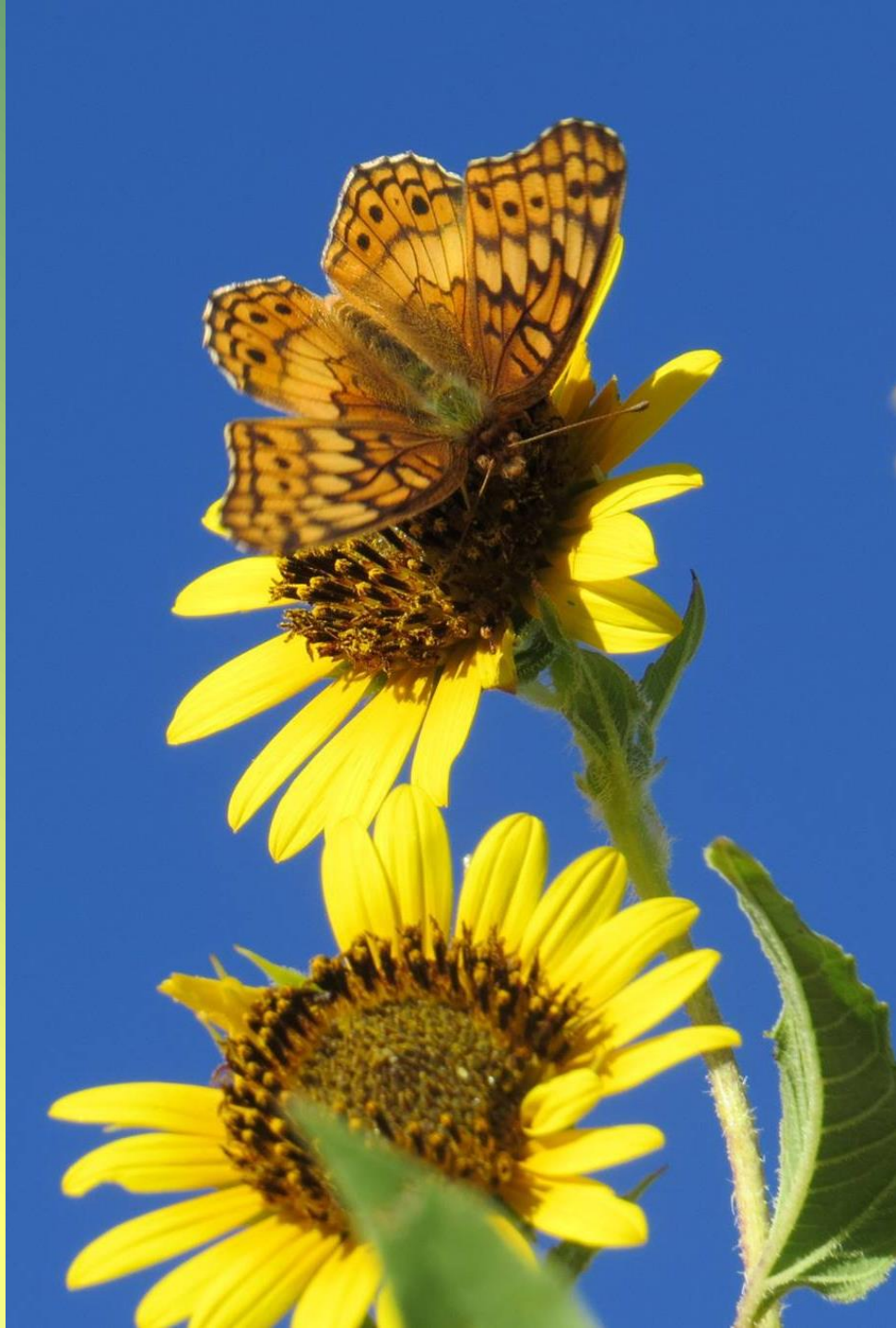
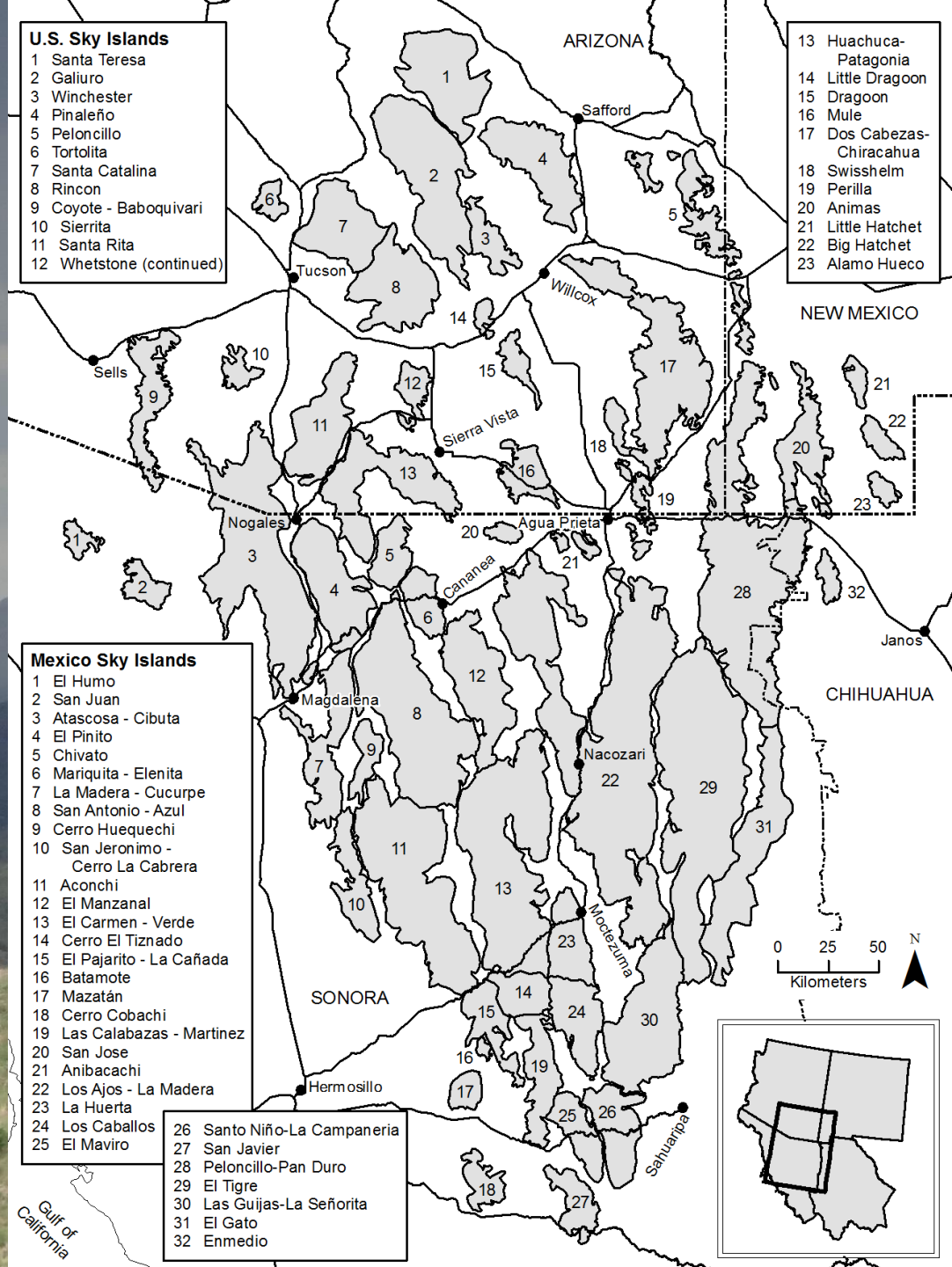
SKY ISLAND ALLIANCE

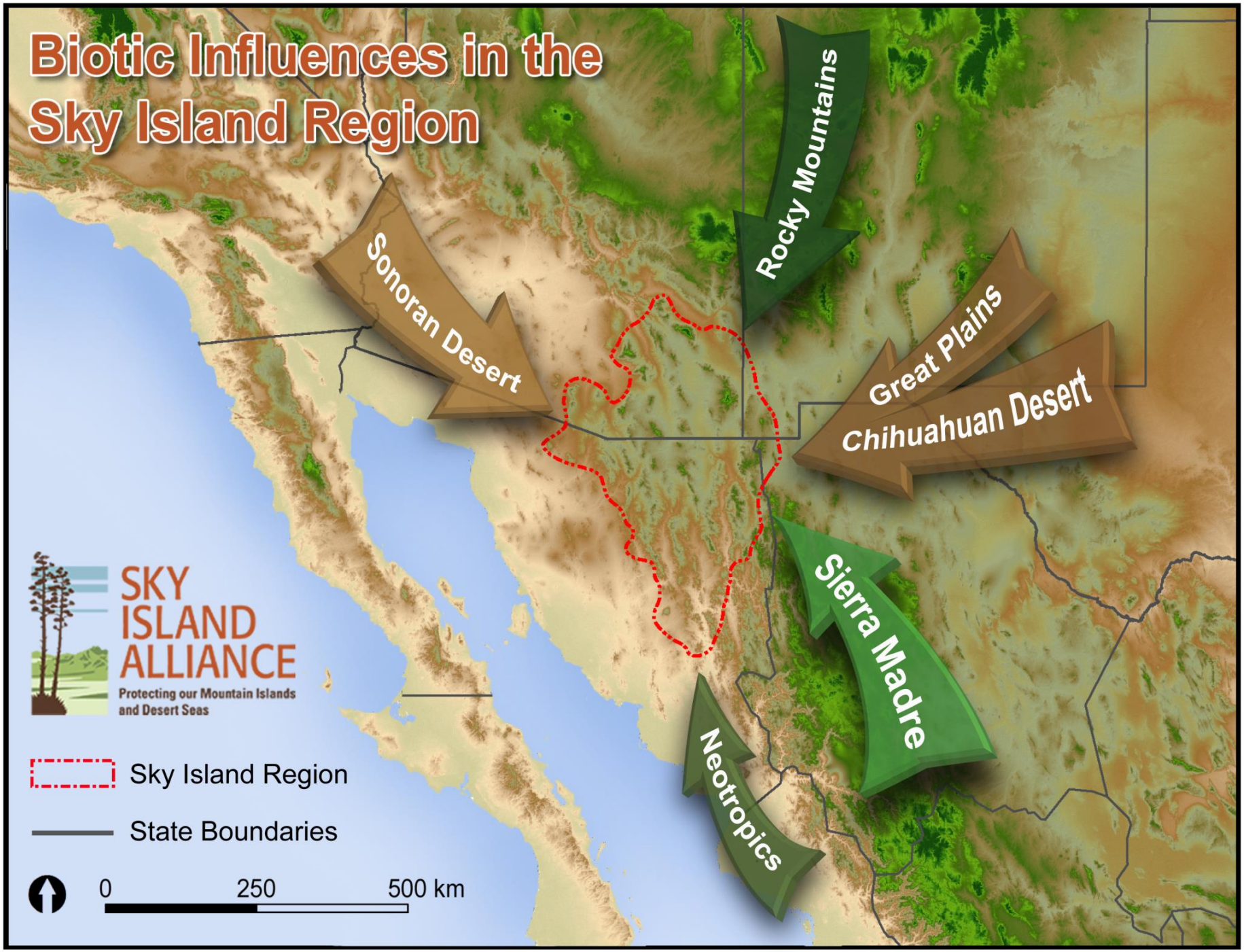



Sky Island Alliance
To Preserve and Restore the
Native Biological Diversity
of the
Sky Island Region
(primarily southeastern Arizona and
northern Sonora, Mexico)
www.skyislandalliance.org

There are 55 Sky Island mountain ranges in this region, 23 occurring in the US (AZ and NM) and 32 occurring in Mexico (Sonora and Chihuahua)



Mountain Islands – Desert and Grasslands Seas


Biotic Influences in the Sky Island Region
Rocky Mountains
Sonoran Desert
Great Plains
Chihuahuan Desert
Sierra Madre
Neotropics
SKY ISLAND ALLIANCE
Protecting our Mountain Islands and Desert Seas
Sky Island Region
State Boundaries
0
250
500 km

4,000+ Native Plants

Many endemics and species at the edge of their range

We know that the climate is changing…

- Less winter precipitation, earlier spring onset
- More extreme weather
- Native plants are already responding

Pollinators in the Sky Islands

In just the Chiricahua Mountains alone:

- 500 species of bees
- 60 species of butterflies
- 14 species of hummingbirds
- 21 species of bats

The sky Islands are a continental migratory corridor for a myriad of wildlife species, including pollinators

We do know a few things…

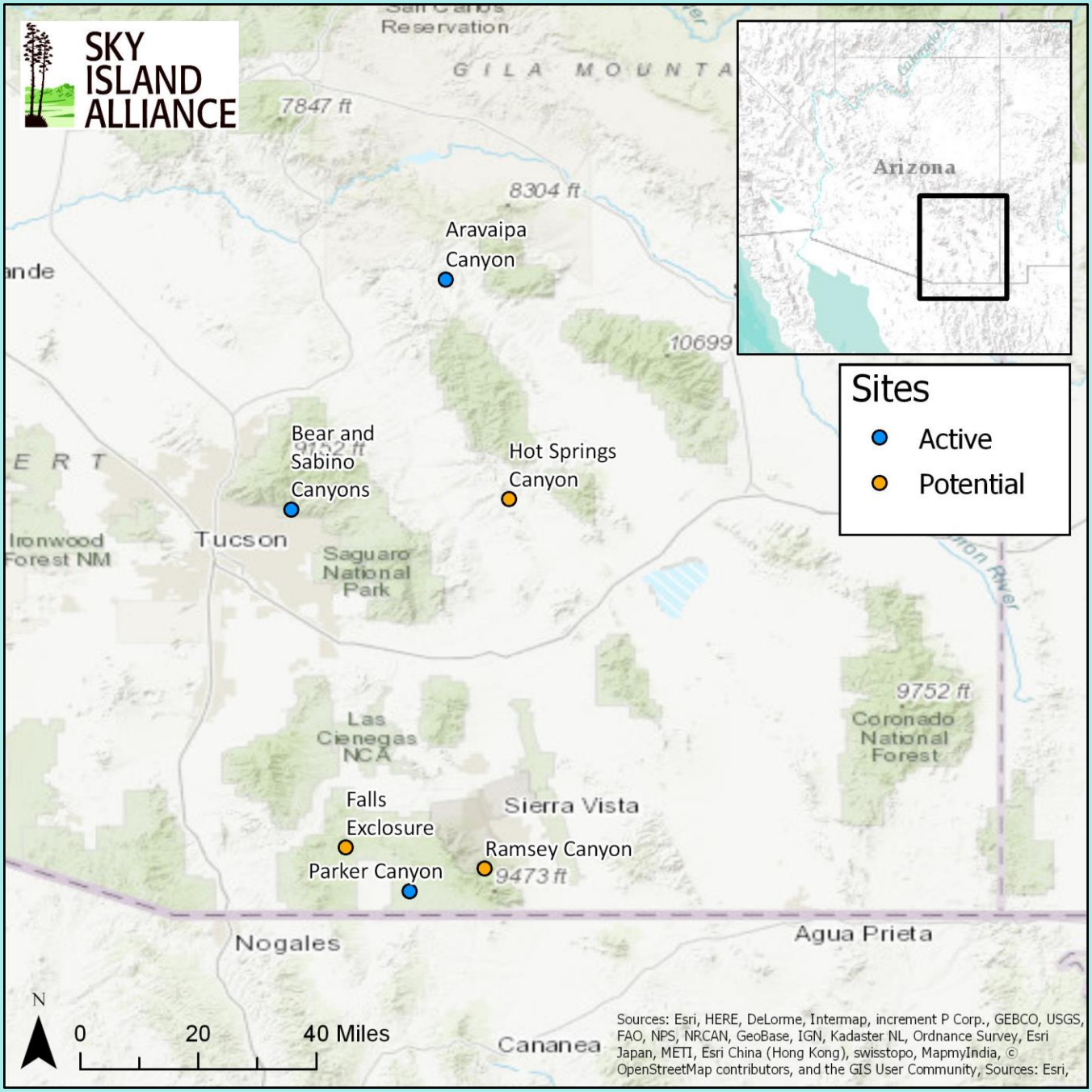
- Monarchs use riparian areas for movement corridors (SW Monarch Study)
- Diversity is good
- Phenological de-coupling – plants and pollinators getting out of sync in time or space
- Different pollinator groups prefer different floral characteristics
  - Color and shape of flowers
  - Late and early blooming species are important

What have we been doing differently?

- No spring planting; focus on monsoon season
- More emphasis on ensuring plant establishment
  - Water harvesting, mulch, handwatering with volunteers
- Careful selection of species
  - What works now *AND IN THE FUTURE*?
  - Are there ways to fill resource gaps?

Project Spotlight:

Supporting Pollinator Adaptation Needs in the Sky Islands



Identify Nectar Deficit Areas

Regionally Strategic Locations

Riparian Areas Choked with Invasives

Seed Collection

- Start as soon as possible! Don't wait to finalize species selection
- Native plant producers directly involved
- Collections made according to BLM Seeds of Success protocols
- Collection from same watershed and used for container plant propagation and seeding using seed balls

- Great Volunteer Activity for all ages
- Excess material archived for use in this project and future projects

Create Space for Native Plants

- Fountain grass (*Pennisetum setaceum*)
- Tree of Heaven (*Ailanthus altissima*)
- Johnson grass (*Sorghum halepense*)
- Vinca (*Vinca major*)
- Over 8.5 miles of riparian areas treated in 2017 & 2018
  - Hand removal with volunteers
  - Chemical treatment with crews

Choosing Restoration Plant Species

1. Gather baseline vegetation data – what is already there to work with?
2. Conduct search to expand list of site-appropriate species

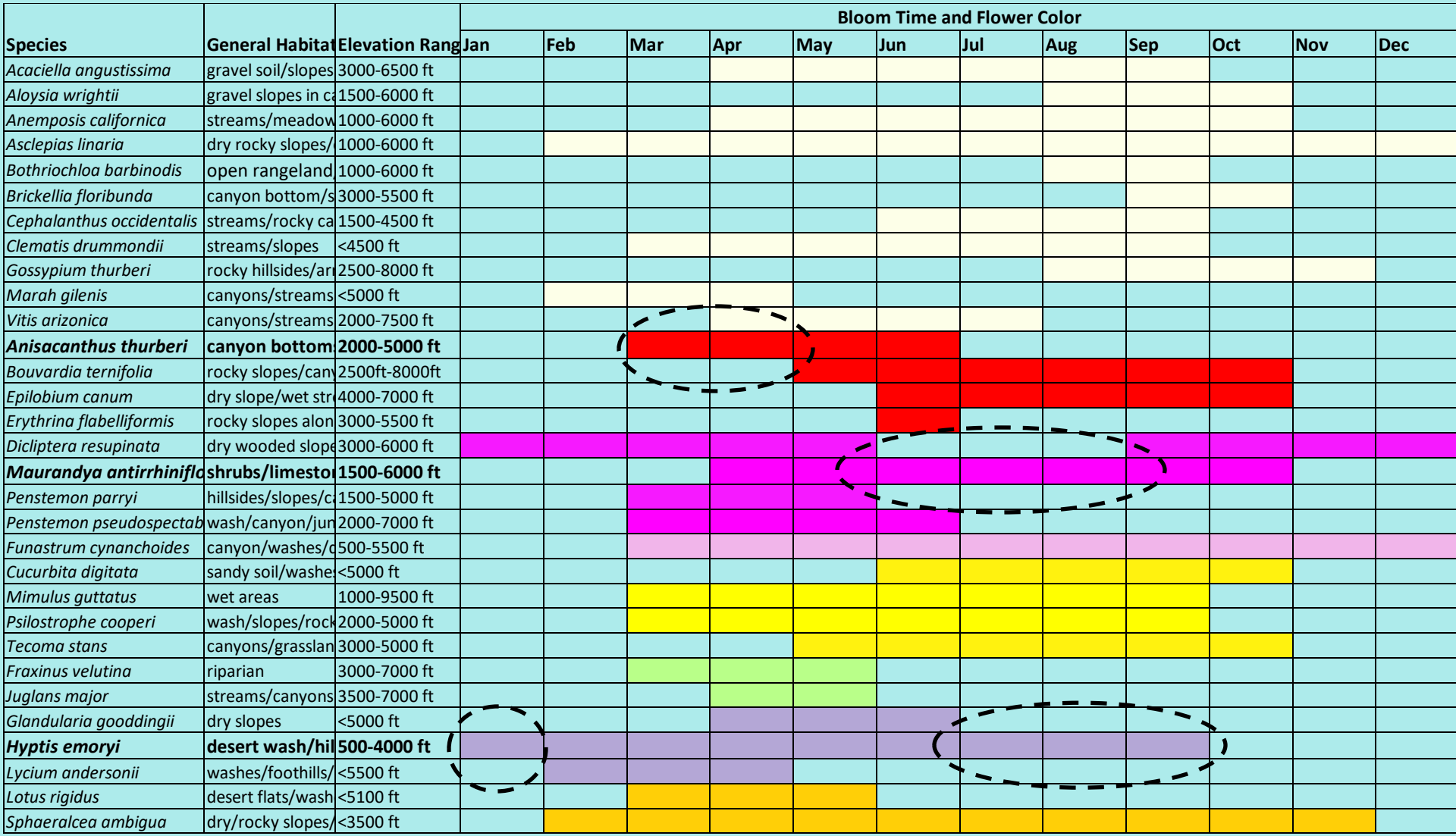
- Species that fill gaps or extend bloom periods
- Lower-elevation or broad elevation species that are appropriate now and can be expected to persist in drought?


desert honeysuckle
(*Anisacanthus thurberi*)


desert lavender
(*Hyptis emoryi*)

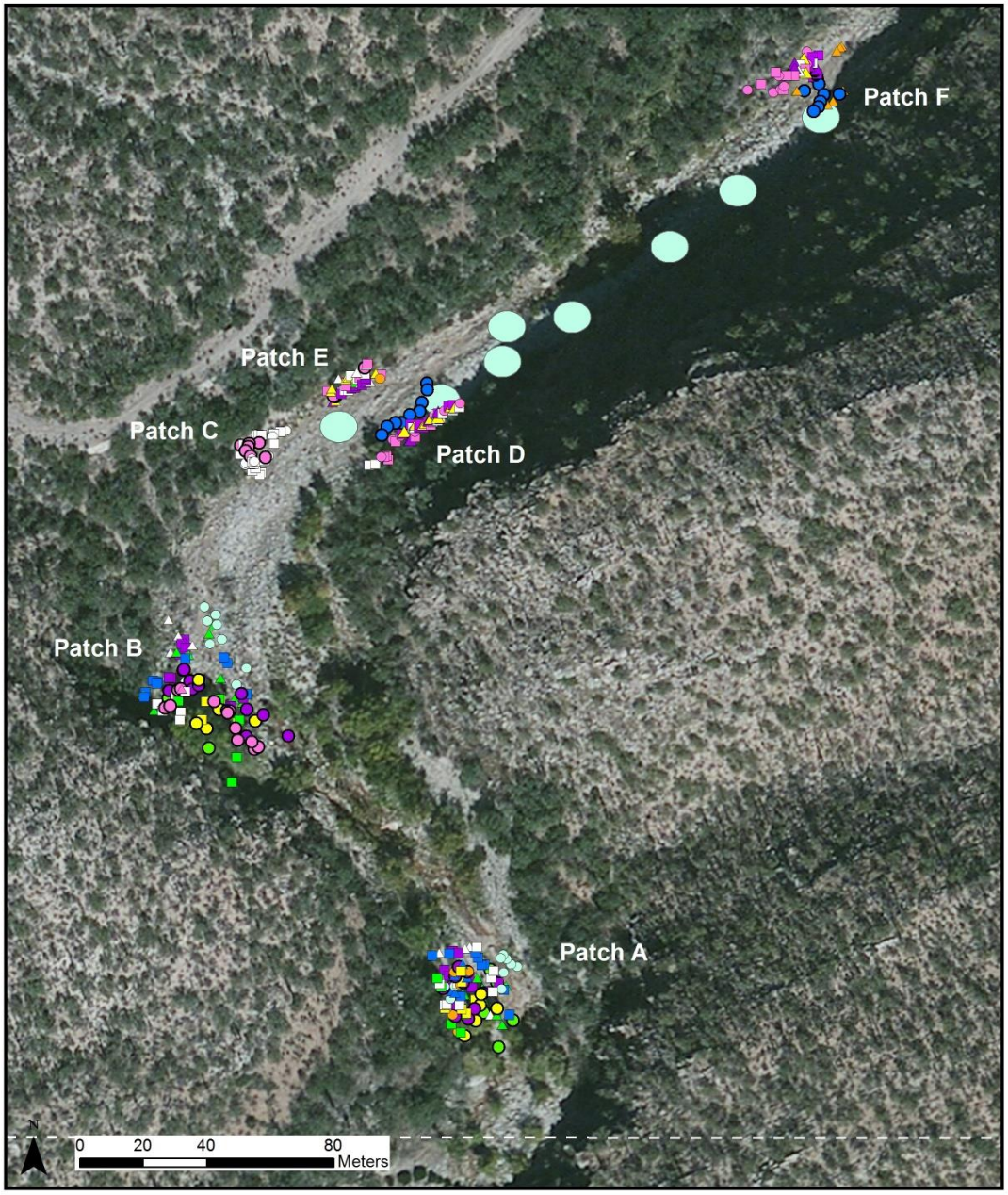

snapdragon vine / roving sailor
(*Maurandya antirrhiniflora*)

Add Species that Expand Resources & Fill Gaps



Native Plant Installation

- Tightly planted islands; each plant GPS'd for monitoring
- Efficient for pollinators and maintenance
  - Hand water
  - Follow up invasives treatment



Take Aways

- No ground-breaking new approaches, just small tweaks and adjustments to what we've always been doing
- Restoration now is not about looking to the past, but looking to the future
  - What actions, and where can they be implemented that are likely to be DURABLE and LONG-LASTING?

Project Partners

WCS

National Forest Foundation

Forest Service U.S. Department Agriculture

Friends of Sabino Canyon

Borderlands Restoration

The Nature Conservancy

U.S. Fish and Wildlife Service Partners for Fish & Wildlife

In 2017-18, 300+ Sky Island Alliance Volunteers have contributed over **10,000 hours** for a matching contribution of over **$250,000.**

Pima County Natural Resources Parks • Recreation

Signature Botanica, L.L.C.

Gila Watershed Partnership of Arizona

Sabino Canyon Volunteer Naturalists

Arizona Conservation Corps AZCC

Alianza Mariposa Monarca


Questions?
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