A scenic photograph of Mount Rainier National Park. In the background, the snow-capped peak of Mount Rainier rises majestically against a clear blue sky. The mountain's slopes are dotted with patches of snow and exposed rocky terrain. In the mid-ground, a dense forest of evergreen trees, likely spruce and fir, covers the lower slopes. The foreground is a lush, green meadow with various alpine plants and small shrubs. The overall scene is bright and clear, suggesting a sunny day.

Relocating Historic Populations of Sensitive Vascular Plants at Mount Rainier National Park

Allie Howell, Erik Ertsgaard,
& Wendy Gibble

UW Botanic Gardens Rare Plant Care
and Conservation

2025 Washington Botanical Symposium

RARE
PLANT
CARE
& CONSERVATION



University of Washington
BOTANIC GARDENS

Importance of Rare Species Documentation at Mt. Rainier

- Mt. Rainier conserves unique habitat
 - Endemic species
 - Species at the edge of their distribution or elevational range
- Track changes in abundance or distribution
- Inform management

Mt. Rainier

Mt. St. Helens

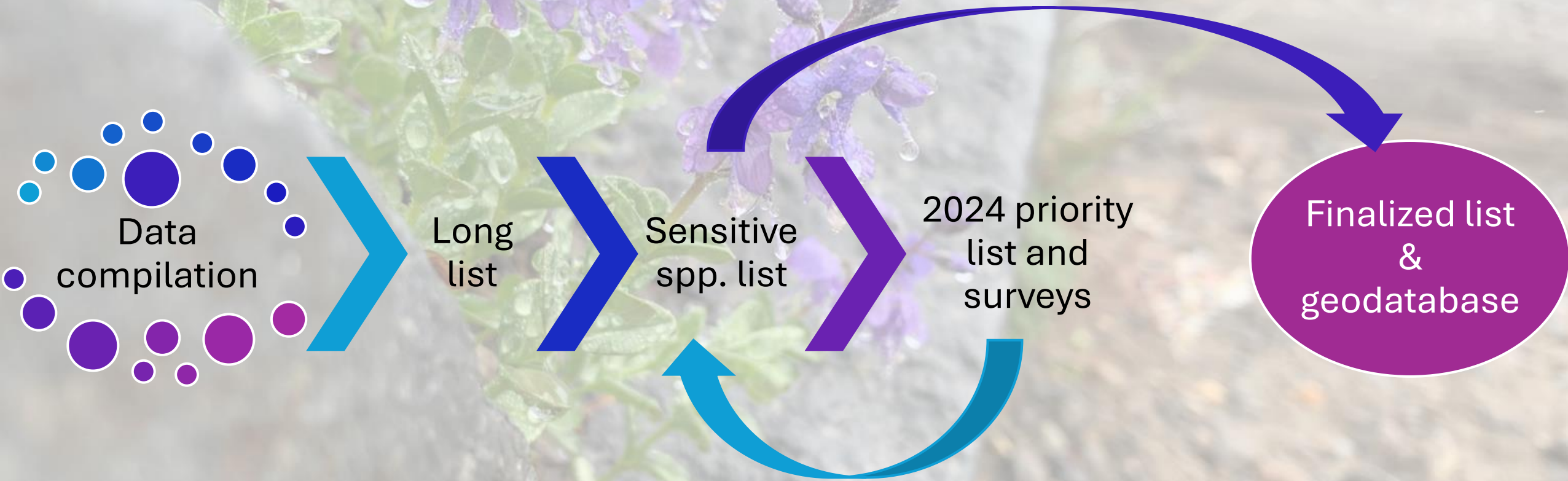
Mt. Adams



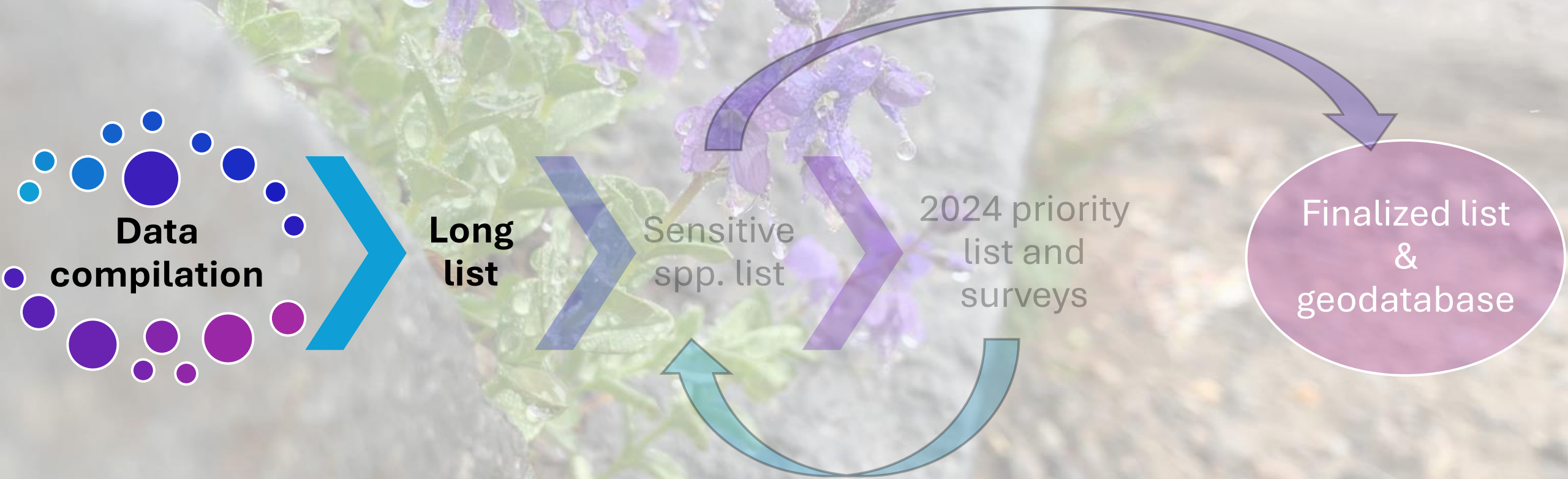
Project Goals

1. Update the Mt. Rainier sensitive vascular plant species list
2. Geospatial database of species locations
3. Field surveys to verify and update spatial data

Sensitive Species List and Geodatabase Construction



Sensitive Species List and Geodatabase Construction

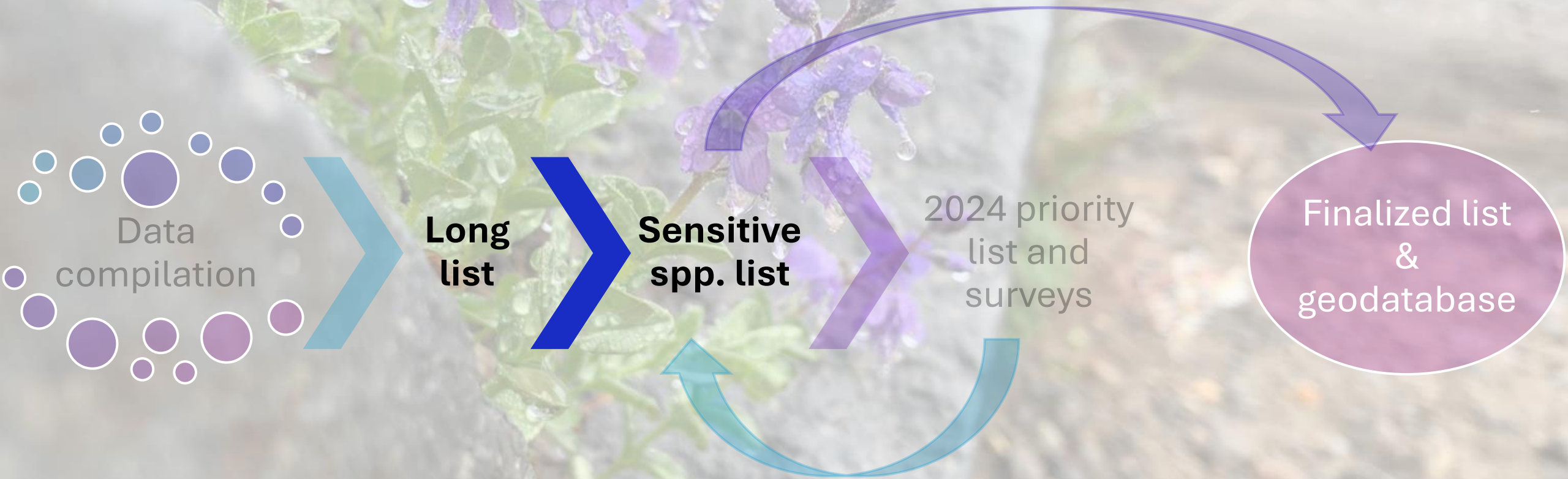


Data Sources and Long List Development

- Existing lists and records:
 - Mt. Rainier and NPS rare species lists
 - WNHP Vascular Plant Species of Conservation Concern
 - Rare Care's 2019-2022 rare species targets
 - Species noted by Burke Herbarium (WTU) team
- Spatial data:
 - CPNWH and Burke Image Gallery records: species with **only 1 record** in Mt. Rainier
- Long list contained 165 species



Sensitive Species List and Geodatabase Construction



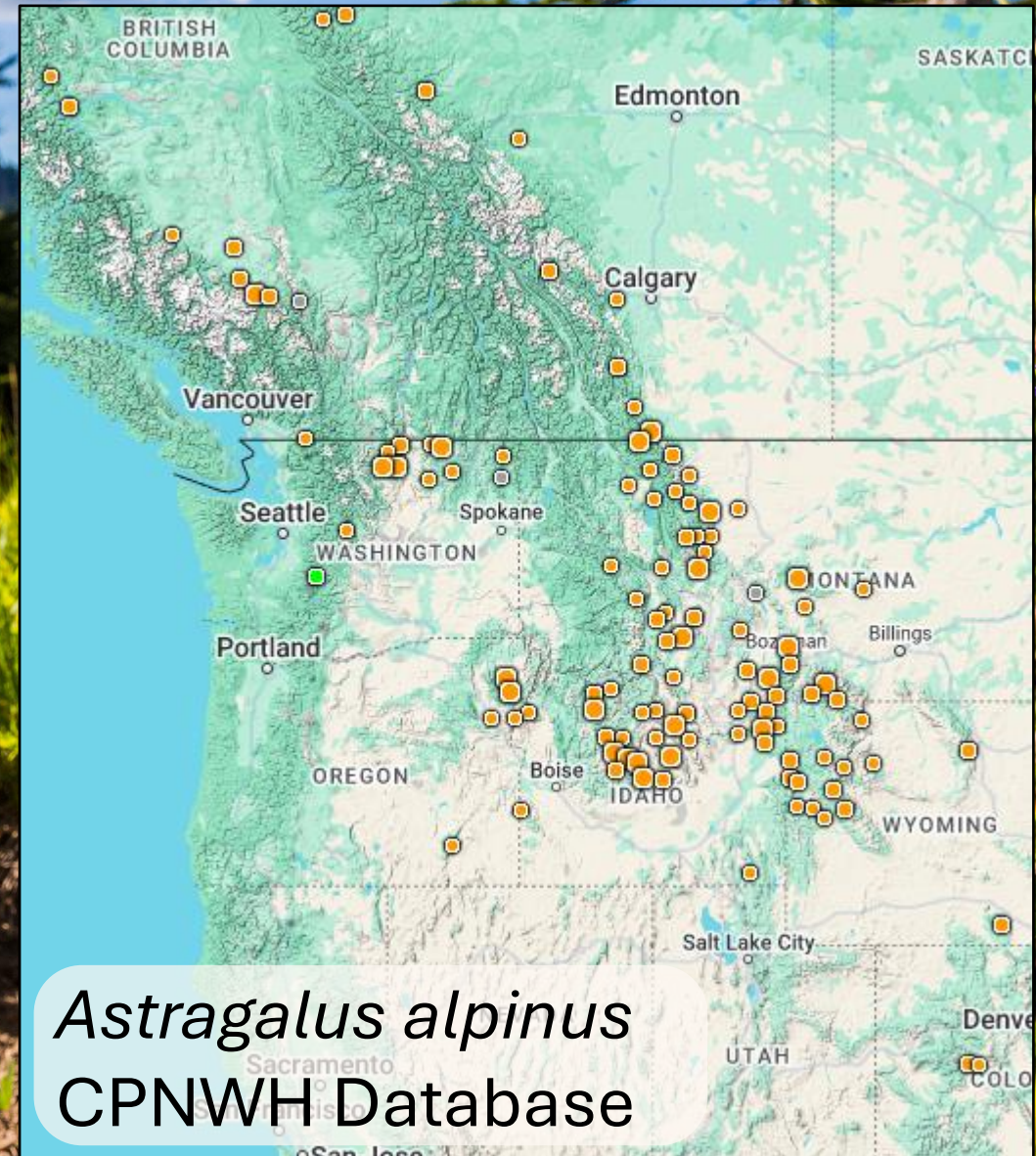
Preliminary Sensitive Species List

- Retained:
 - State sensitive species
 - Mt. Rainier (near) endemics
 - Rare Care 2019-2022 priorities
 - Burke Herbarium team recommendations
 - Species with narrow distribution, disjunct populations, or peripheral populations
- Removed:
 - Species with very imprecise location information
- ~70 species remained on list



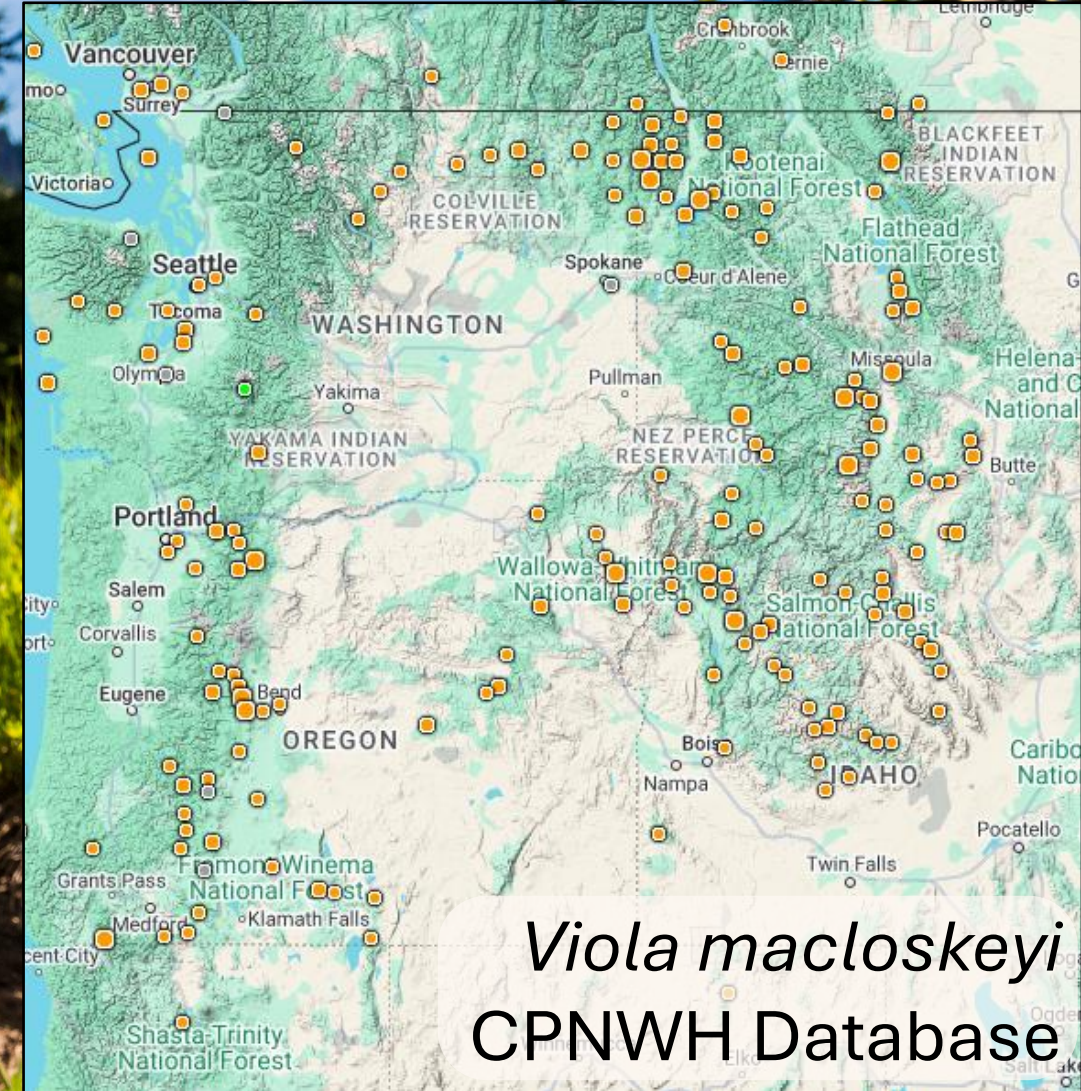
Preliminary Sensitive Species List

- **Retained:**
 - State sensitive species
 - Mt. Rainier (near) endemics
 - Rare Care 2019-2022 priorities
 - Burke Herbarium team recommendations
 - Species with narrow distribution, **disjunct populations, or peripheral populations**
- **Removed:**
 - Species with very imprecise location information
- ~70 species remained on list

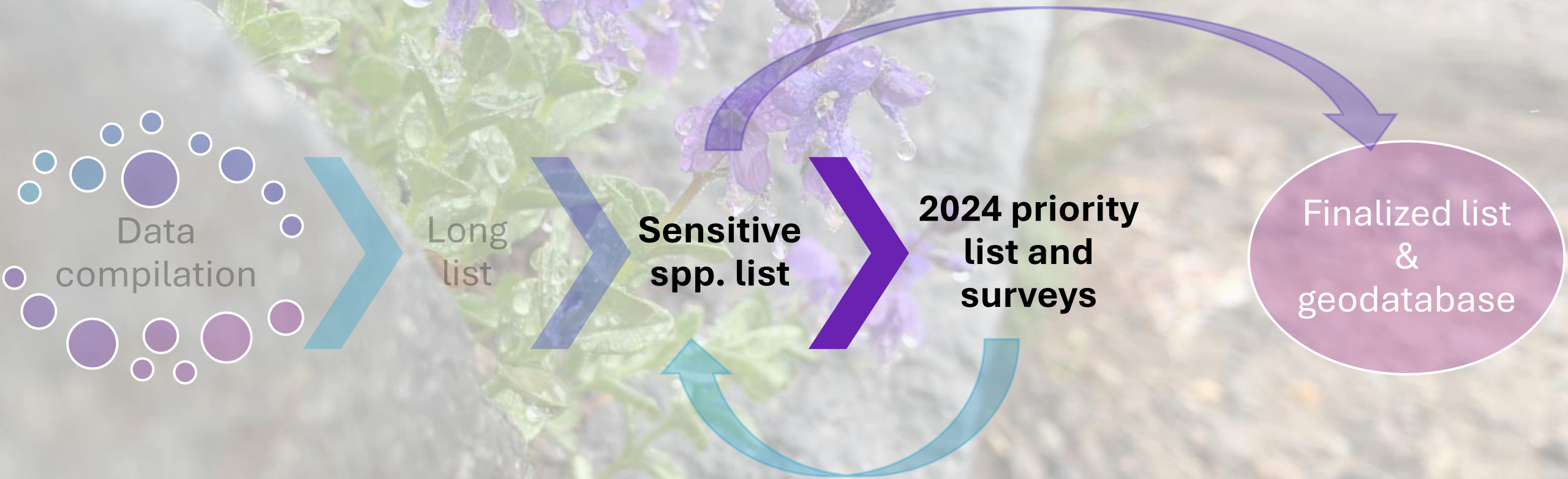



Preliminary Sensitive Species List

- Retained:
 - State sensitive species
 - Mt. Rainier (near) endemics
 - Rare Care 2019-2022 priorities
 - Burke Herbarium team recommendations
 - Species with narrow distribution, disjunct populations, or peripheral populations
- **Removed:**
 - Species with very imprecise location information
- ~70 species remained on list



Sensitive Species List and Geodatabase Construction



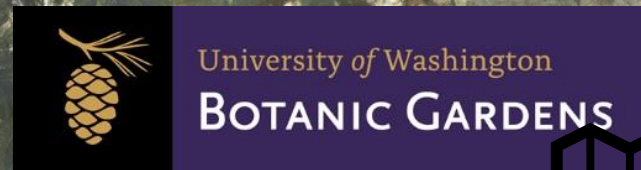
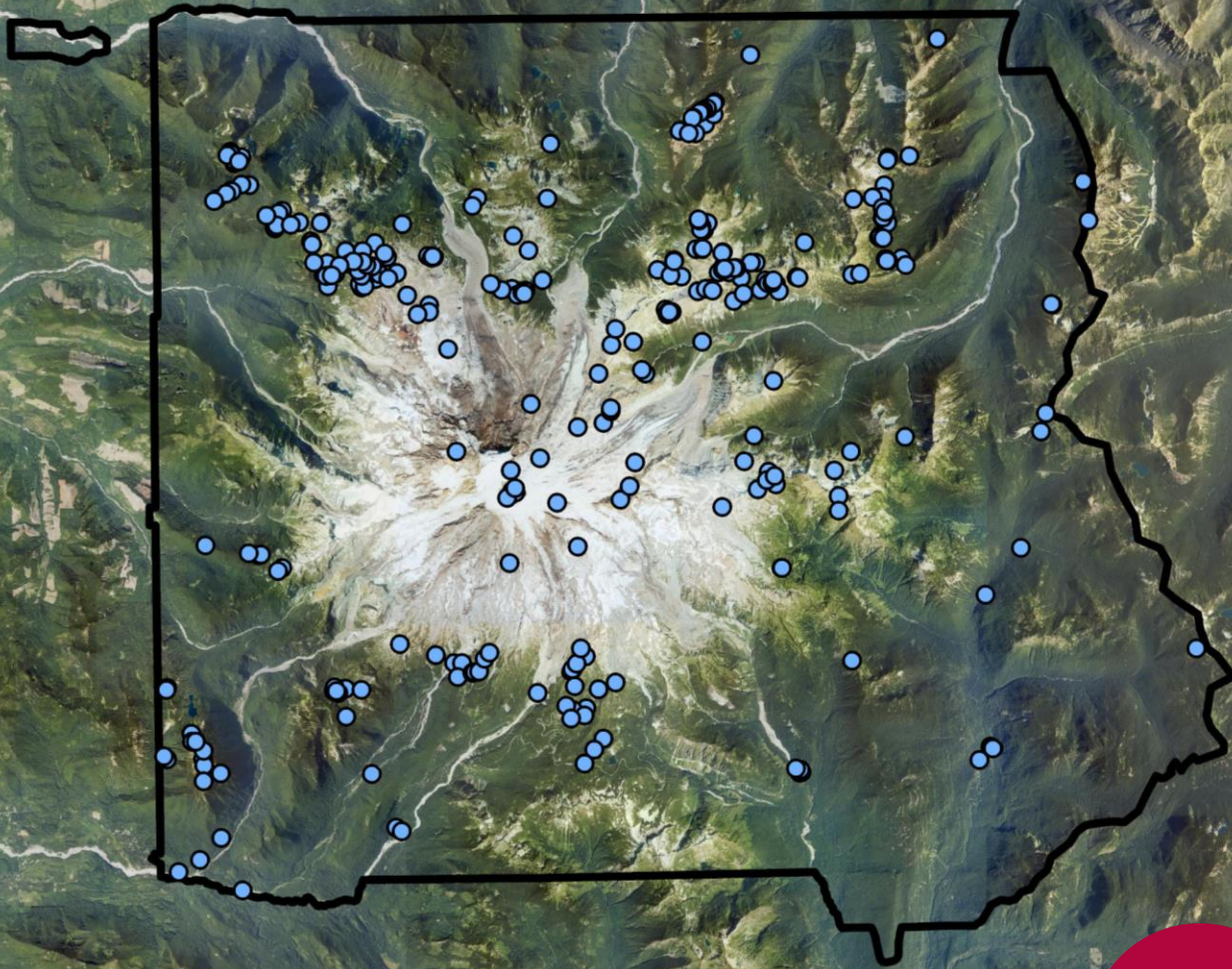
A person wearing a green cap, a maroon long-sleeved shirt, and a bright orange and yellow high-visibility vest is working on a rocky mountain slope. They are leaning over a small, young evergreen tree, possibly planting or tending to it. The ground is covered in dark, jagged rocks and some sparse green vegetation. In the background, a large, snow-capped mountain (Mt. Rainier) rises majestically under a clear blue sky. The overall scene is a high-altitude alpine environment.

2024 Priority Species List

- State sensitive
- Taxa with narrow distribution
- Mt. Rainier is peripheral or disjunct
- Spatially explicit records to guide a search
- 28 species with high relocation likelihood for 2024 field season

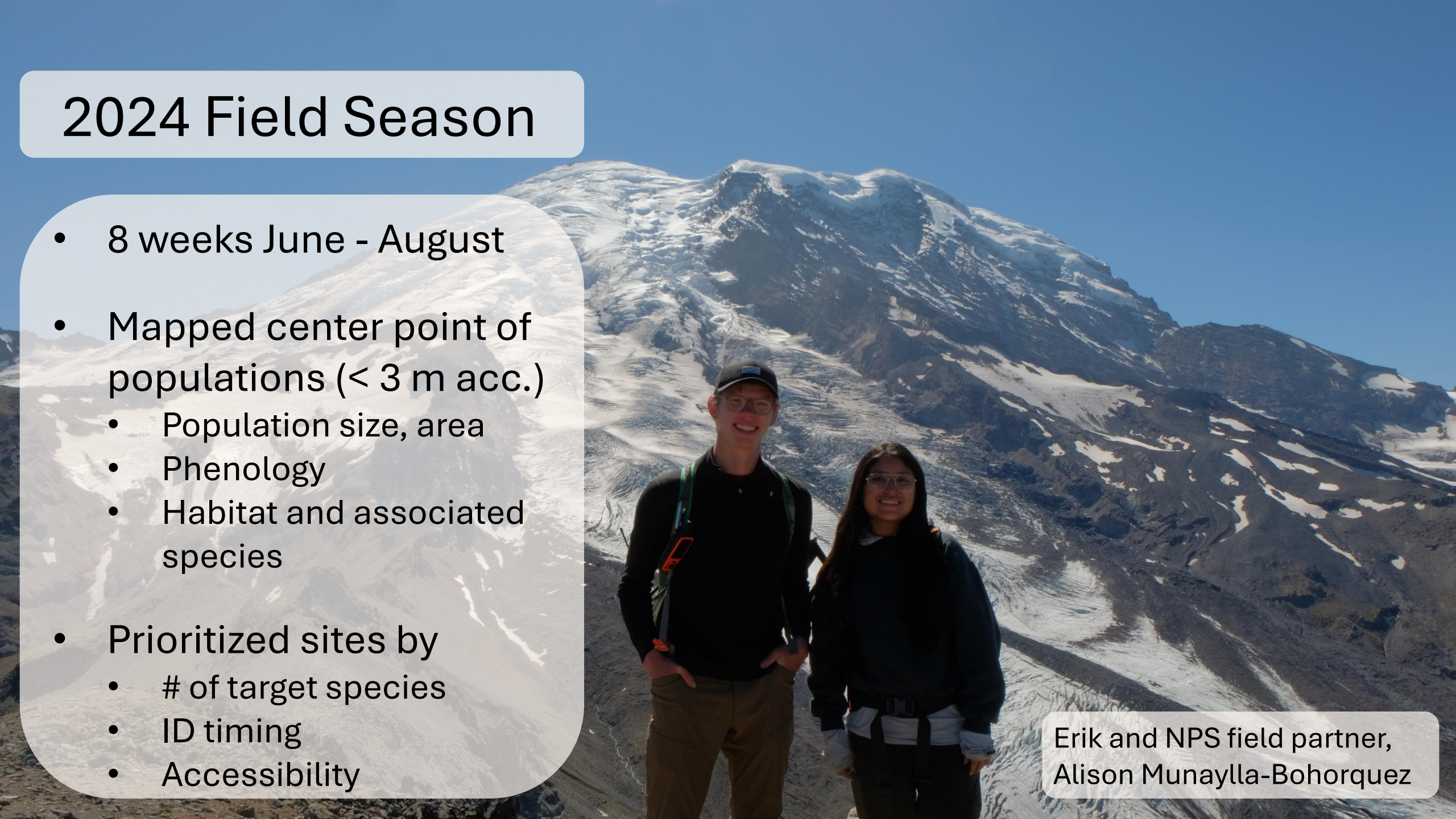
2024 Field Surveys Database Construction

- Spatial point data from:
 - CPNWH database
 - Burke Image Collection
 - Research-grade iNaturalist observations
 - Rare Care's 2019-2022 mapping efforts



2024 Field Season

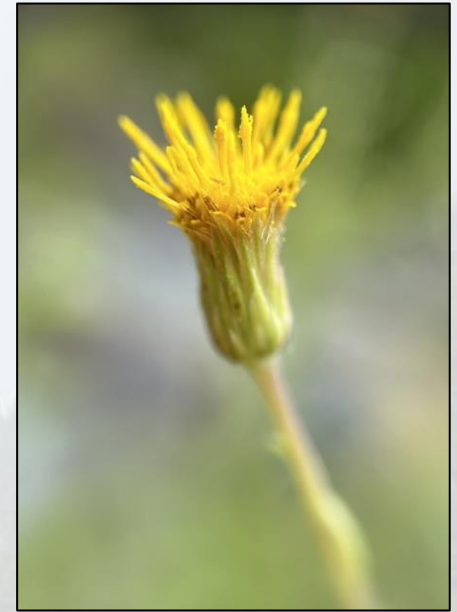
- 8 weeks June - August
- Mapped center point of populations (< 3 m acc.)
 - Population size, area
 - Phenology
 - Habitat and associated species
- Prioritized sites by
 - # of target species
 - ID timing
 - Accessibility

A photograph of two people, a man and a woman, standing in front of a large, snow-capped mountain. The man is on the left, wearing a black long-sleeved shirt, khaki pants, a black cap, and glasses. The woman is on the right, wearing a black long-sleeved shirt, black pants, and glasses. They are both smiling. The background is a vast, rugged mountain landscape with patches of snow and dark rock under a clear blue sky.

Erik and NPS field partner,
Alison Munaylla-Bohorquez

Highlights – *Heterotheca oregona*

- Discoid Asteraceae species found in flood-prone gravel riverbanks of WA and OR (G4S1)
- Located on multiple reaches of two of the Parks' largest rivers
- Often found with swarms of moth pollinators



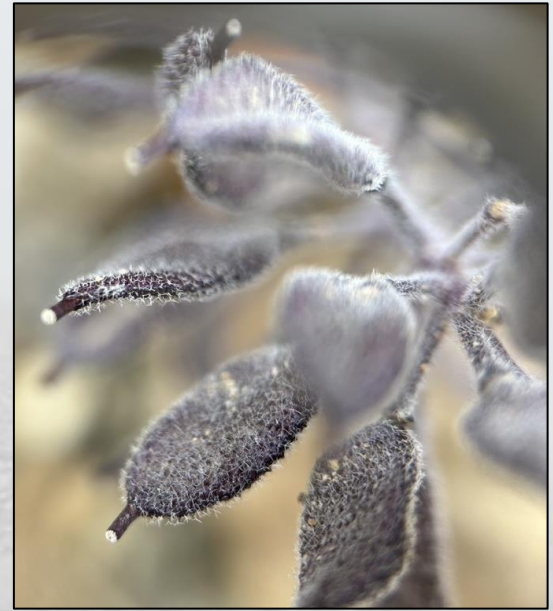
Highlights – *Eleocharis nitida*



- Tiny spikerush more common in the Northeast; one population in Washington (G4SU)
 - “probably more considerably overlooked than rare” (NatureServe)
- Located in a highway ditch
- Area will be protected from roadside exotic weeds control

Highlights – *Draba aureola*

- High alpine Draba known only from high-elevation volcanoes across the Cascades (G4SNR)
- Found in a last-effort search through a fellfield while starting downclimb (at 8300')
- Previously observed at 11,800'!



Misidentification Discoveries



Draba oligosperma → *Draba novolympica*

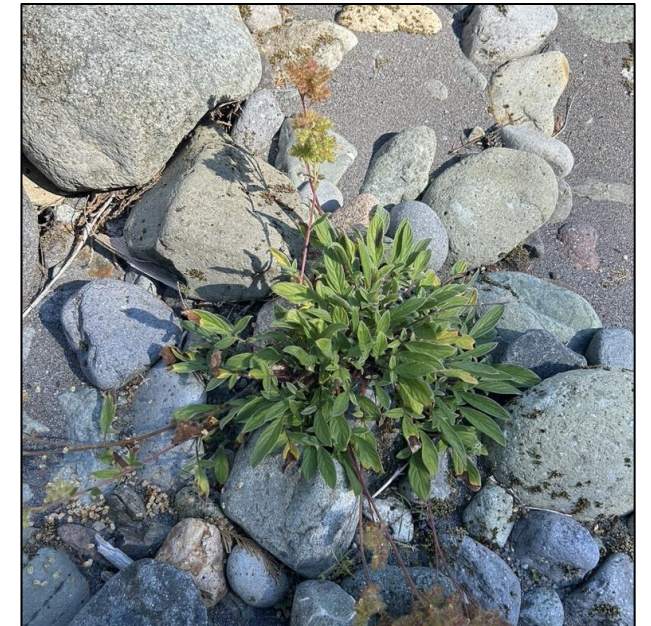


Artemisia campestris var. *borealis*

- Alpine → *Artemisia furcata*
- Riparian → *Artemisia ludoviciana*



Phacelia mutabilis → *Phacelia hastata*



Carex rostrata → *Carex utriculata*

Field Season Outcomes

- Across 34 sites surveyed:
 - 14 species relocated (22 sites)
 - 4 species confirmed misidentified
 - 9 sites unsuccessful

- Refined tools for NPS staff to identify sensitive plant locations
 - Cleaned geodatabase
 - Species information



Sensitive Species List and Geodatabase Construction

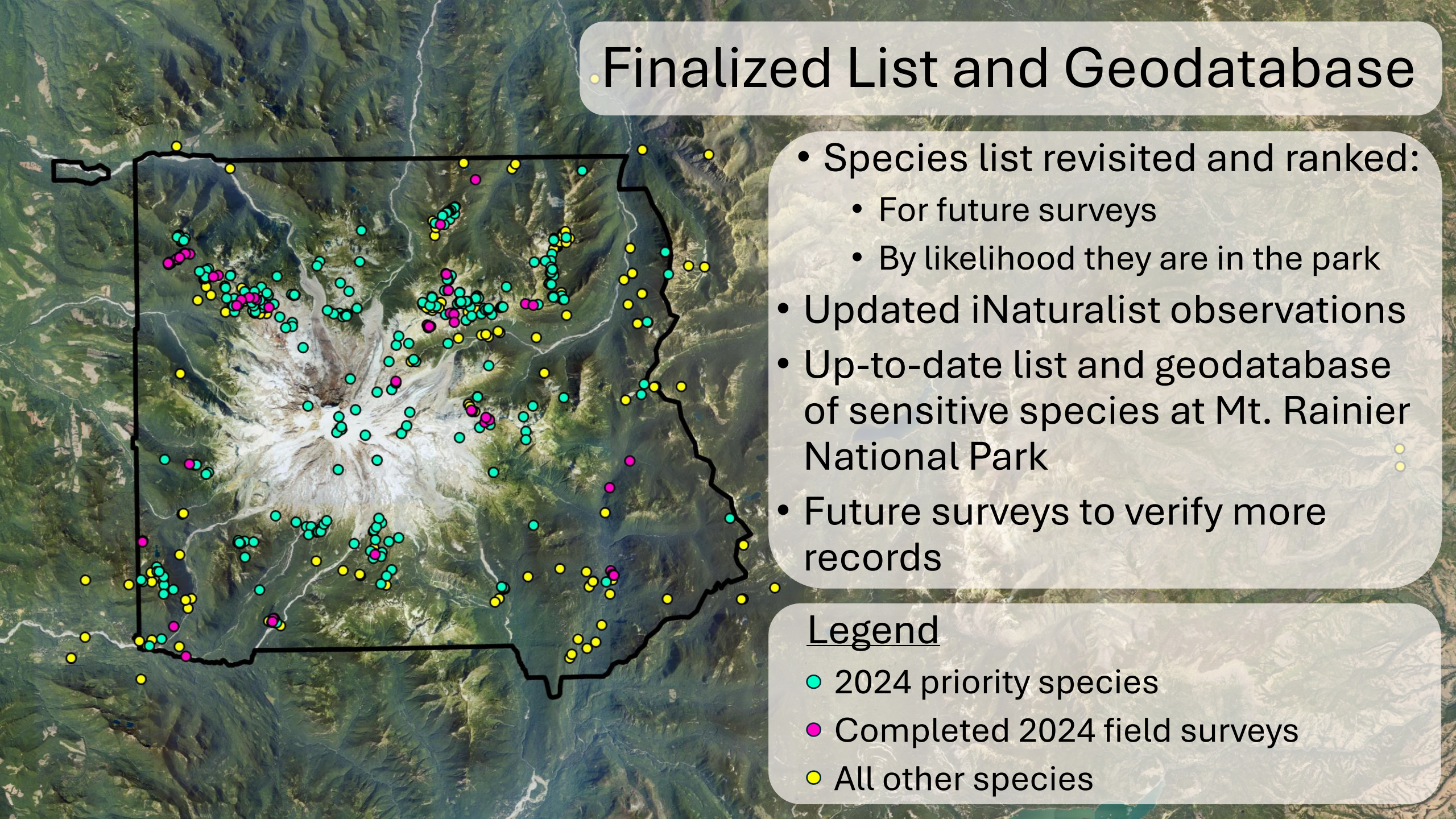


Finalized List and Geodatabase

- Species list revisited and ranked:
 - For future surveys
 - By likelihood they are in the park
- Updated iNaturalist observations
- Up-to-date list and geodatabase of sensitive species at Mt. Rainier National Park
- Future surveys to verify more records

Legend

- 2024 priority species
- Completed 2024 field surveys
- All other species



Thank you!

- **Beth Fallon (NPS)**
- **Alison Munaylla-Bohorquez (NPS)**
- **Erik McLaury (NPS)**
- **Lindsey Skidmore (NPS)**
- **David Giblin (Burke Herbarium (WTU))**
- **Peter Zika (Burke Herbarium (WTU))**
- **Burke Herbarium (WTU)**
- **WA DNR Natural Heritage Program**
- **iNaturalist contributors**



Funded through the PNW Cooperative Ecosystems
Studies Unit Cooperative Agreement P23AM00444

