

Filling the Gaps: Contributions of Citizen Science to Botanical Inventory

Wendy Gibble



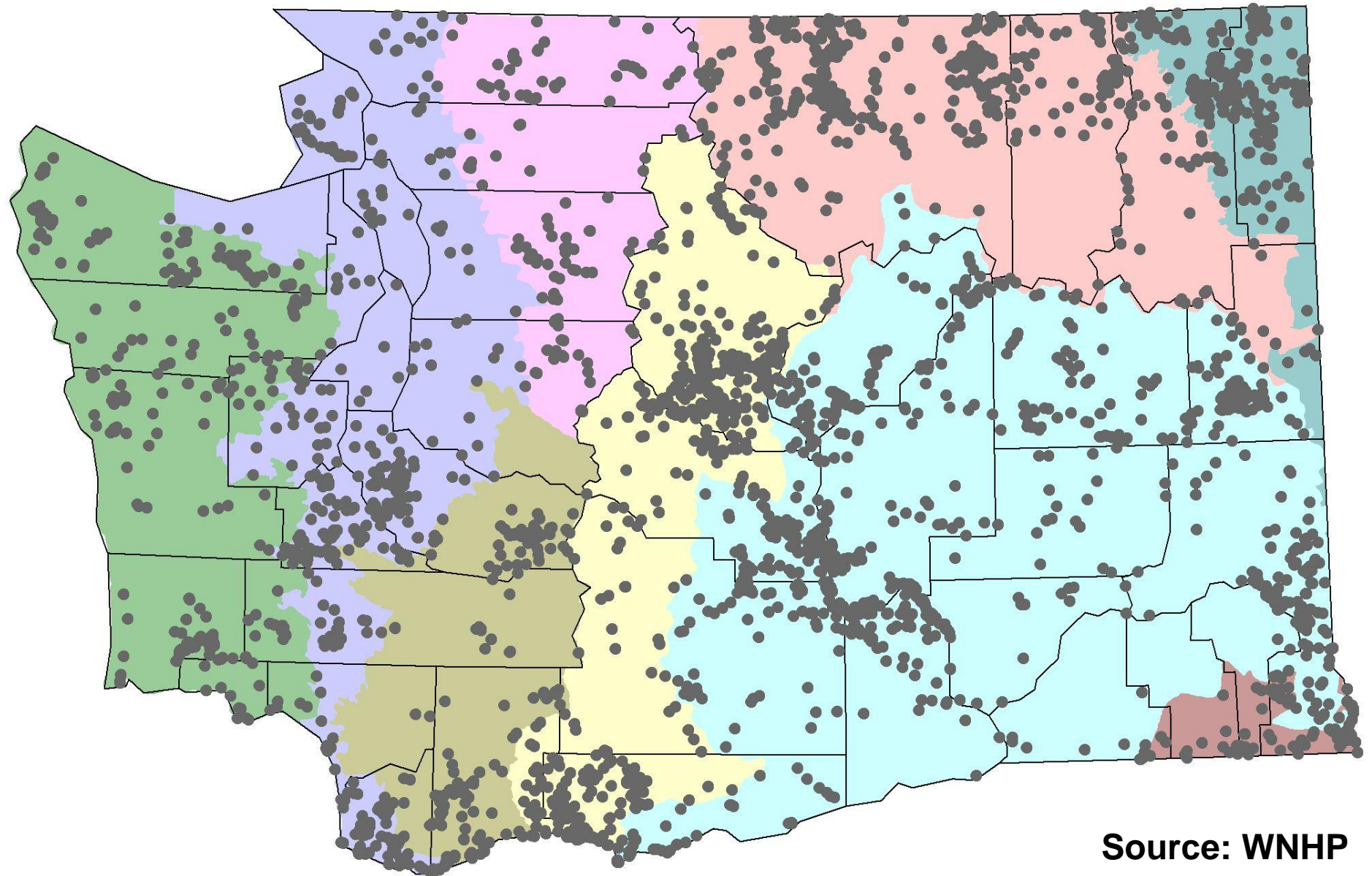
University of Washington
BOTANIC GARDENS

*School of Environmental and Forest Sciences
College of the Environment*

**RARE
PLANT
CARE**
& CONSERVATION

Photo: Janka Hobbs

Rare Plants in Washington



Source: WNHP

Rare Plant Monitoring Objectives

Goal: Update inventory data on rare plant populations in Washington State to support conservation and land management decisions.

Project partner:

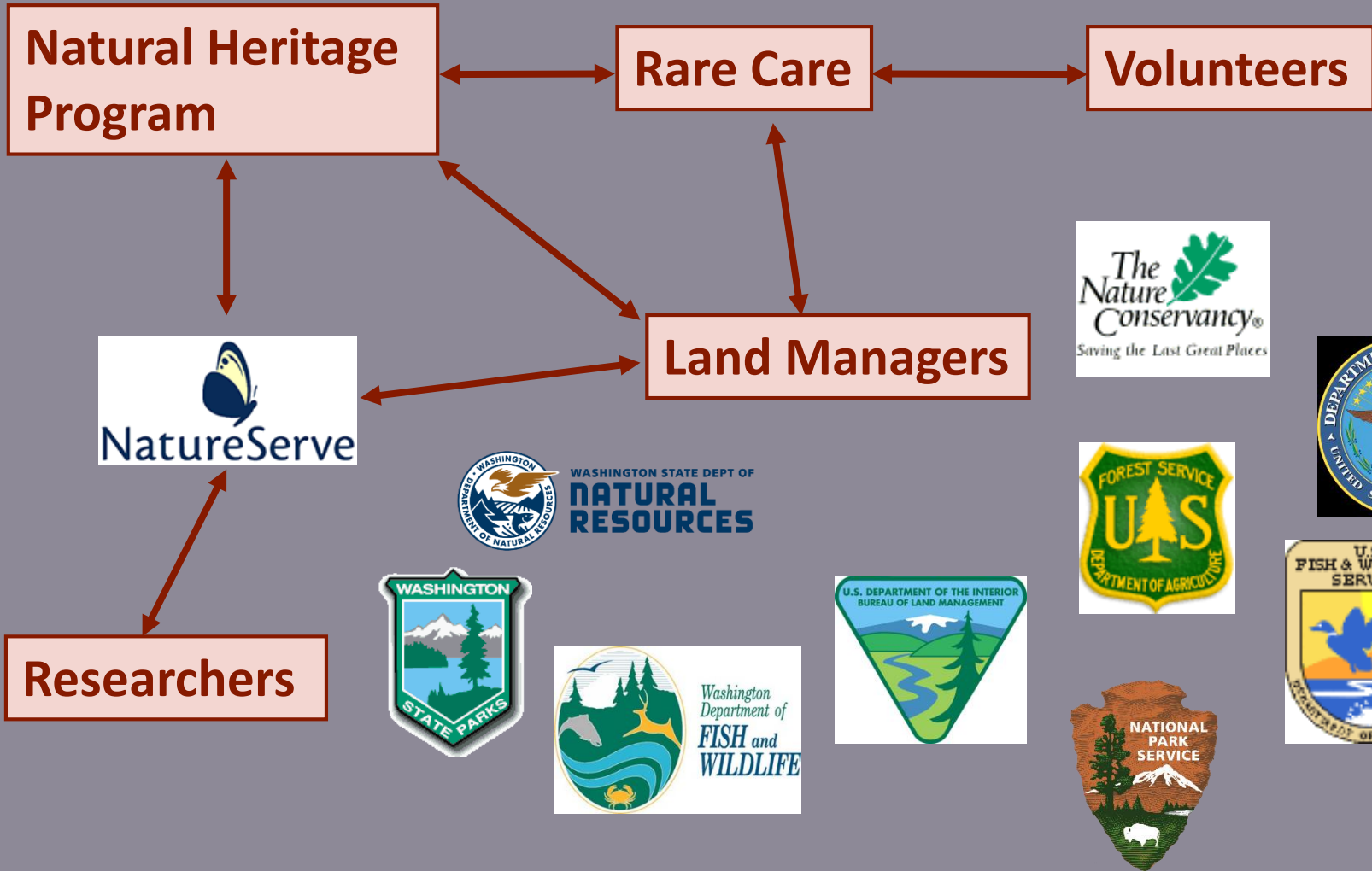
Washington Natural Heritage Program



WASHINGTON STATE DEPT OF
**NATURAL
RESOURCES**

Pale alpine forget-me-not
(*Eritrichium nanum* var. *elongatum*)
State sensitive

Flow of Information



Monitoring Priorities

| | <u>Priority</u> ▶ | <u>Counties</u> ▶ | <u>Phenology</u> ▶ | <u>Taxonomy</u> ▼ | <u>Species</u> ▶ | <u>EO Number</u> ▶ | <u>Last Observation</u> ▶ | <u>Survey Date</u> ▶ | <u>Precision</u> ▶ | <u>Survey Sites</u> ▶ | <u>Managed Area Names</u> ▶ |
|---------------|----------------------|----------------------|-------------------------------|---------------------------------|-------------------------|-----------------------|------------------------------|-------------------------|-----------------------|---------------------------|---|
| <u>Select</u> | Highest | Snohomish | June, July, August | Technical key, Very challenging | Botrychium pedunculosum | 10 | 8/2/1995 | 8/10/2006 | S | Beaver Creek Road | Darrington RD Mt Baker-Snoqualmie National Forest |
| <u>Select</u> | Medium | Chelan | July, August | Technical key, very challenging | Carex proposita | 8 | 8/13/1993 | 8/13/1993 | S | Entiat Mountain | Glacier Peak EWA Wenatchee National Forest Wenatchee River RD |
| <u>Select</u> | Medium | Chelan | July, August | Technical key, very challenging | Carex proposita | 3 | 6/20/1992 | 6/20/1992 | S | Rock Mountain | Wenatchee National Forest Wenatchee River RD |
| <u>Select</u> | Highest | Kittitas | April, May, June, July | Technical key | Erythranthe suksdorfii | 14 | 5/28/1995 | 5/18/2012 | S | Ryegrass Rest Area South | Yakima Training Center |
| <u>Select</u> | Highest | Kittitas | April, May, June, July | Technical key | Erythranthe suksdorfii | 10 | 5/28/1995 | 5/18/2012 | S | MIDDLE CANYON TRIBUTARY | Yakima Training Center |
| <u>Select</u> | Highest | Okanogan | June, July | Technical key | Erythranthe pulsiferae | F01 | | | | South Summit-French Creek | Okanogan National Forest Methow Valley RD |
| <u>Select</u> | Highest | Okanogan | June, July, August | Technical key | Botrychium paradoxum | 10 | 7/31/1996 | 7/31/1996 | S | Hodges Horse Pasture | Okanogan National Forest Tonasket RD |
| <u>Select</u> | Highest | Okanogan | May, June | Technical key | Carex cordillerana | D01 | | | | | Sinlahekin WA |
| <u>Select</u> | Highest | Okanogan | June, July, August, September | Technical key | Botrychium ascendens | 19 | 7/31/1996 | 7/31/1996 | S | Hodges Horse Pasture | Okanogan National Forest Tonasket RD |

Project Accomplishments (2001 to present)



- 424 volunteers trained statewide
- 42,326 volunteers hours donated
- 1,886 surveys completed
- >1,000 occurrences visited
- >75 new populations discovered
- 16 focus species completed

Yellow mountain-avens (*Dryas drummondii*)
State sensitive



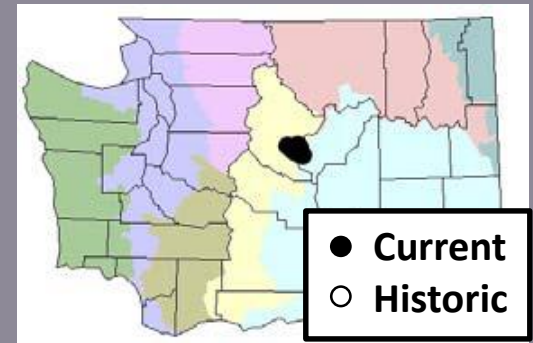
Richard Ramsden

Thompson's Clover

(*Trifolium thompsonii*)

State sensitive (G2)

USFWS Species of Concern



| Site | Previous Survey: | | Rare Care Survey (Count) | Larger or Smaller |
|------|------------------|------|--------------------------|-------------------|
| | Size | Year | | |
| 1 | 1,000s | 1992 | >360,000 | Larger |
| 9 | N/A | 1989 | 1,000,000 | |
| 17 | N/A | 1976 | Not Found | |
| 20 | 300 | 1986 | | |
| 21 | N/A | 1993 | 30,000 | |
| 25 | 2,000 | 2000 | 500,000 | Larger |
| 26 | >100 | 1997 | 5,000 – 8,000 | Larger |



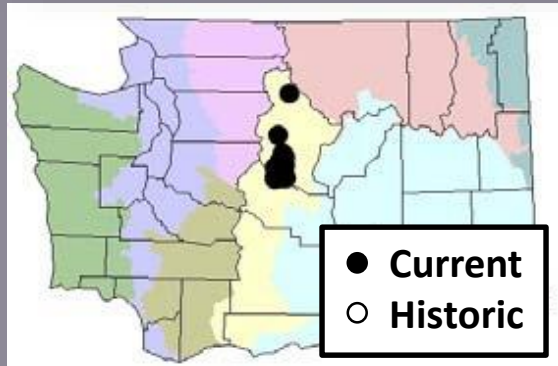
Seely's silene (*Silene seelyi*)

USFWS Species of Concern

State sensitive (G2G3)



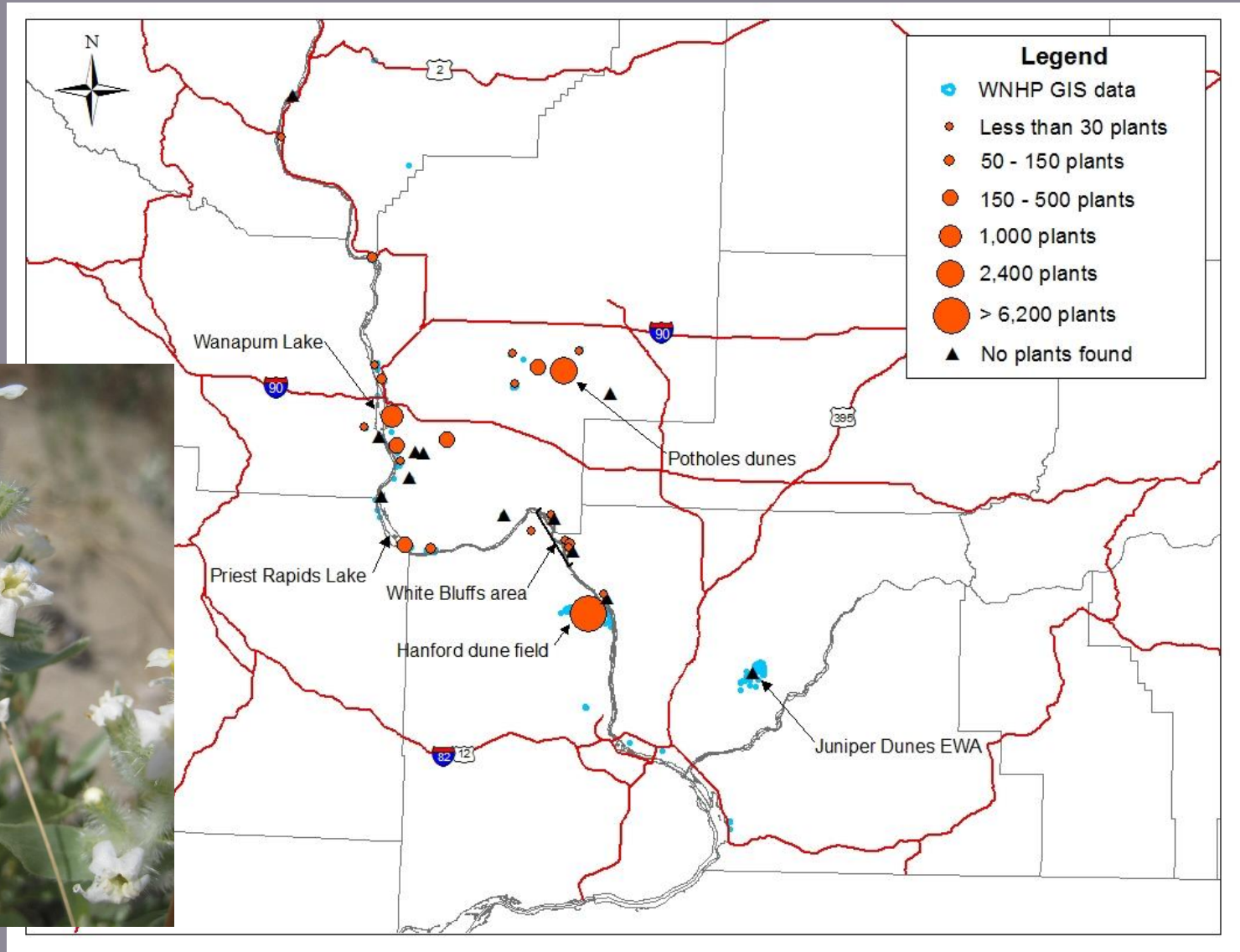
Michael Muscari



| Site | Previous Survey: | | Rare Care Survey (Count) | Larger or Smaller |
|------|------------------|------|--------------------------|-------------------|
| | Size | Year | | |
| 1 | N/A | 1951 | | |
| 2 | N/A | 1935 | | |
| 3 | 10 | 1984 | 163 | Larger |
| 6 | 4 | 1980 | 21 | Larger |
| 7 | >50 | 1990 | 16 | Smaller |
| 8 | N/A | 1990 | Not Found | |
| 9 | N/A | 1987 | 29 | |
| 10 | 144 | 1998 | 103 | Smaller |
| 12 | N/A | 1987 | 4 | |
| 13 | 38 | 1998 | 54 | Larger |
| 14 | N/A | 1990 | 25 | |
| 15 | 44 | 1990 | 47 | Larger |
| 16 | 6 | 1990 | 18 | Larger |
| 17 | N/A | 1991 | 11 | |
| 18 | 4 | 1992 | 2 | Smaller |
| 19 | 2 | 1992 | 69 | Larger |
| 20 | 4 | 1992 | 57 | Larger |
| 21 | >70 | 1998 | 50 | Smaller |
| 22 | 496 | 1993 | 72 (partial) | |
| 23 | 11 | 2001 | 200 | Larger |
| 24 | 3 | 1998 | | |

Gray cryptantha (*Cryptantha leucophaea*)

State threatened (G2G3), USFWS Species of Concern



Betty Swift

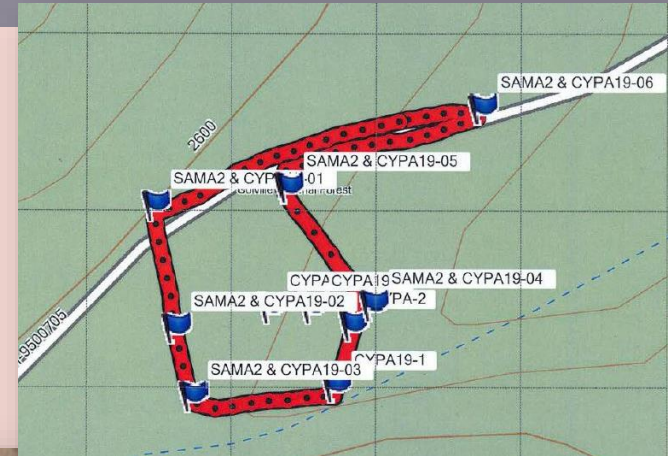
New Populations – i.e. Columbia River Gorge



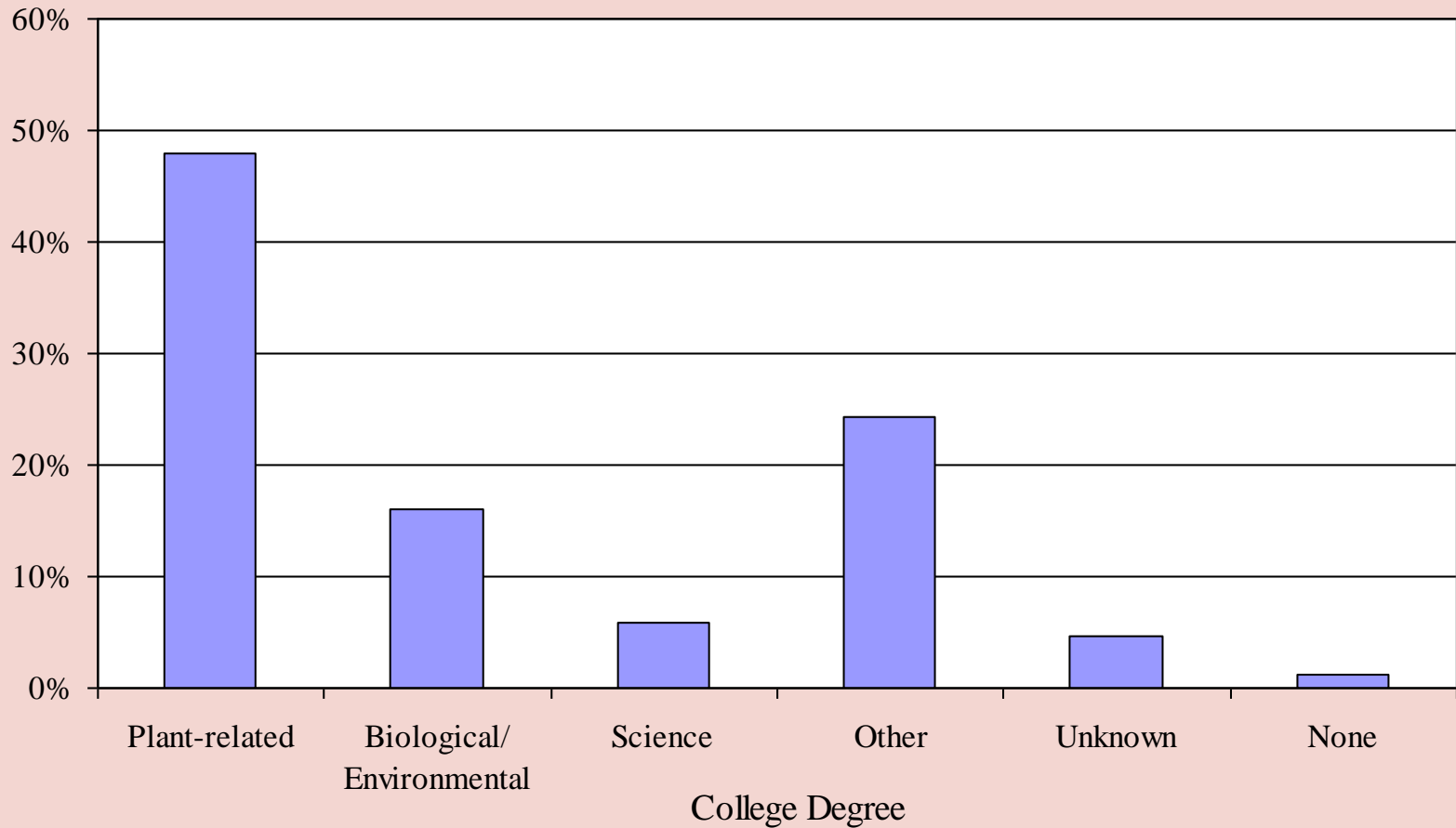
Developing Consistent Data Quality

Strategies:

- Standardized procedures and forms
- Volunteer handbook
- QA review of monitoring reports
- Post-review follow-up
- Volunteer recruitment and screening

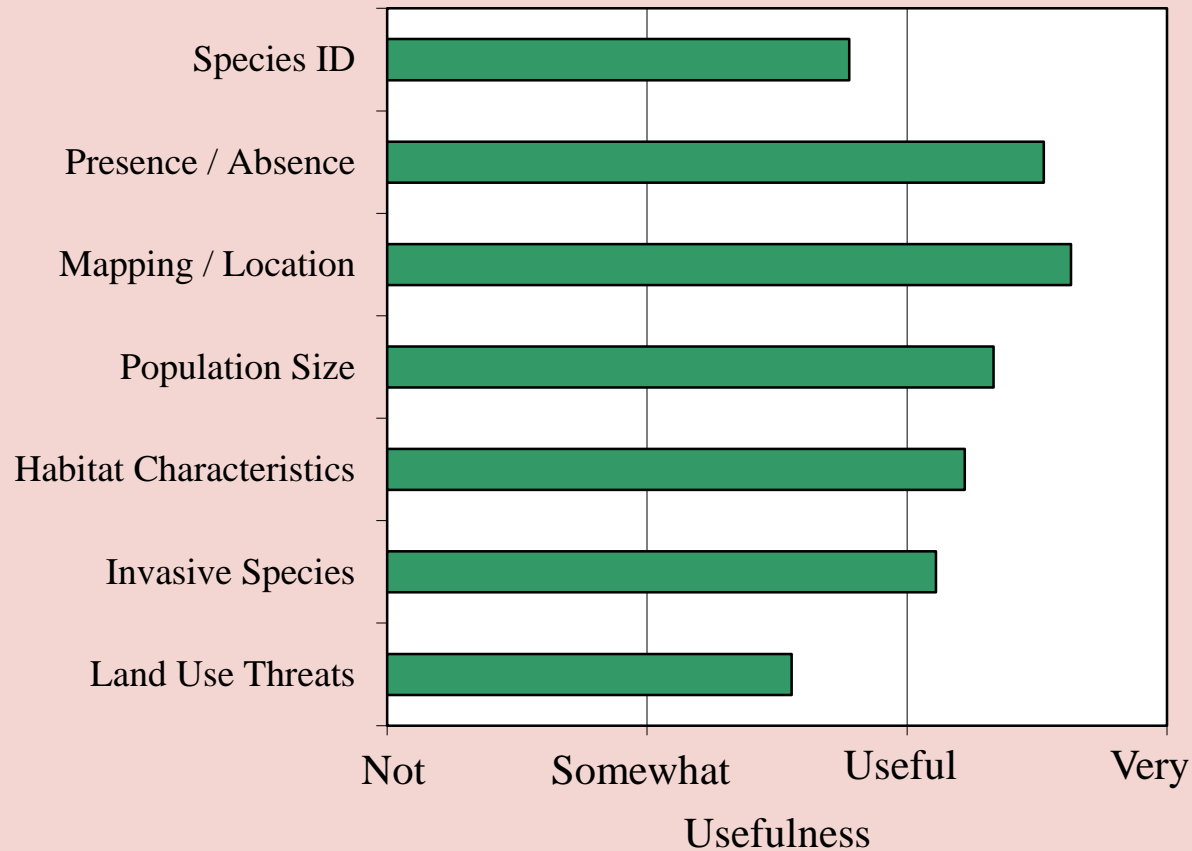


Rare Plant Monitors' Backgrounds



Based on a survey of 169 active volunteers

Use of Monitoring Data



Unanticipated benefit: Populations brought to attention of land managers.

Closing Thoughts

- 20+ years between surveys is too long – citizen science programs can help fill the gap
- Program creates connections across the state and across jurisdictions
- There is still much to be discovered – even where many have gone before!
- Send in your sighting reports



**Interested in volunteering
for Rare Care?**

Visit www.uwbotanicgardens.org/rarecare/

Thank you, volunteers!

This program would not be possible without our partnership with the **Washington Natural Heritage Program**. Thank you!

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