

National Park Service
U.S. Department of the Interior
Yosemite National Park



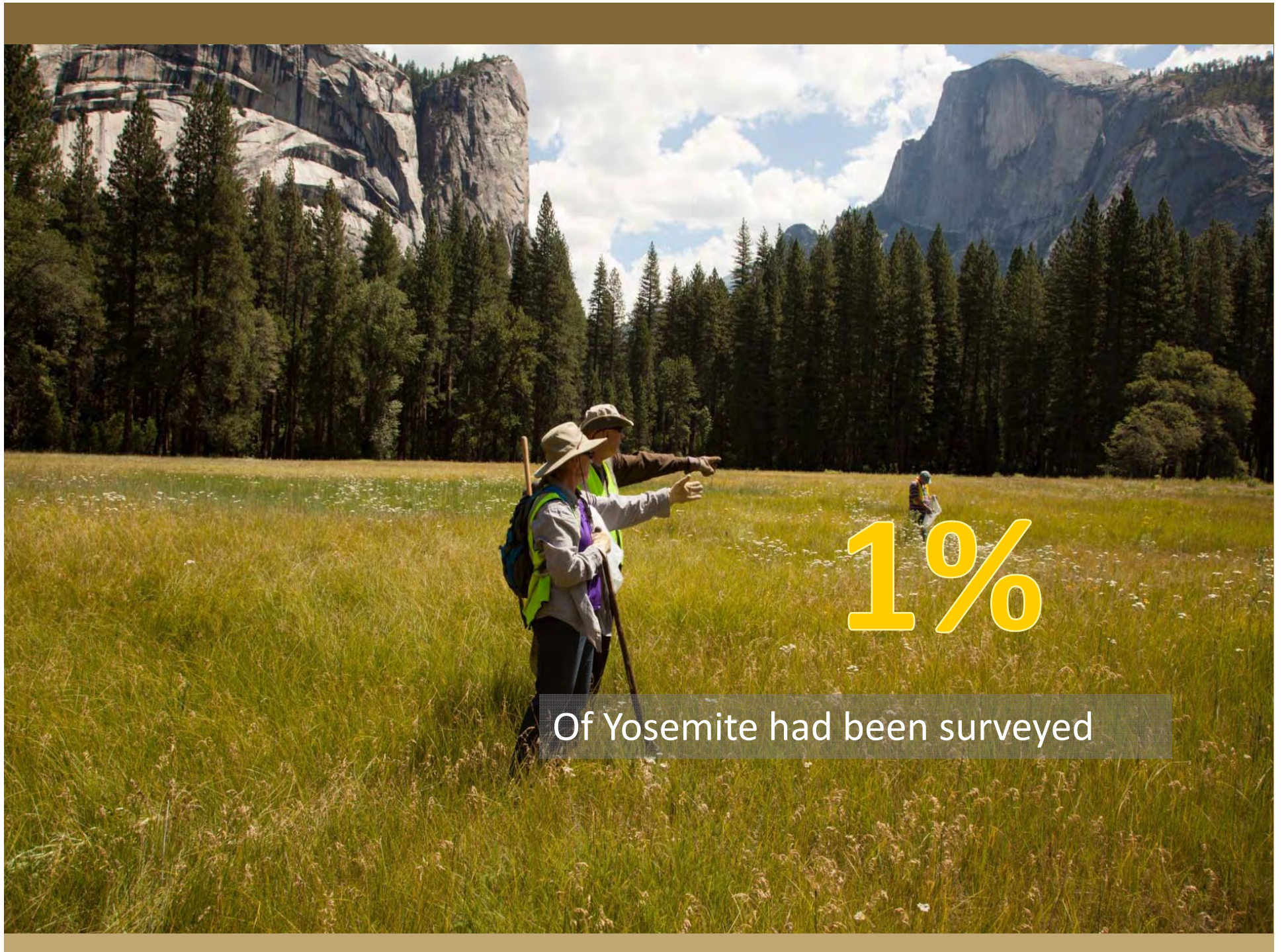
Staying Ahead of the Spread: Early Detection Surveys in Yosemite National Park

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EXPERIENCE YOUR AMERICA





1%

Of Yosemite had been surveyed



Alien Plant Species Threat Assessment and Management
Prioritization for Sequoia-Kings Canyon and
Yosemite National Parks

Open-File Report 02-170



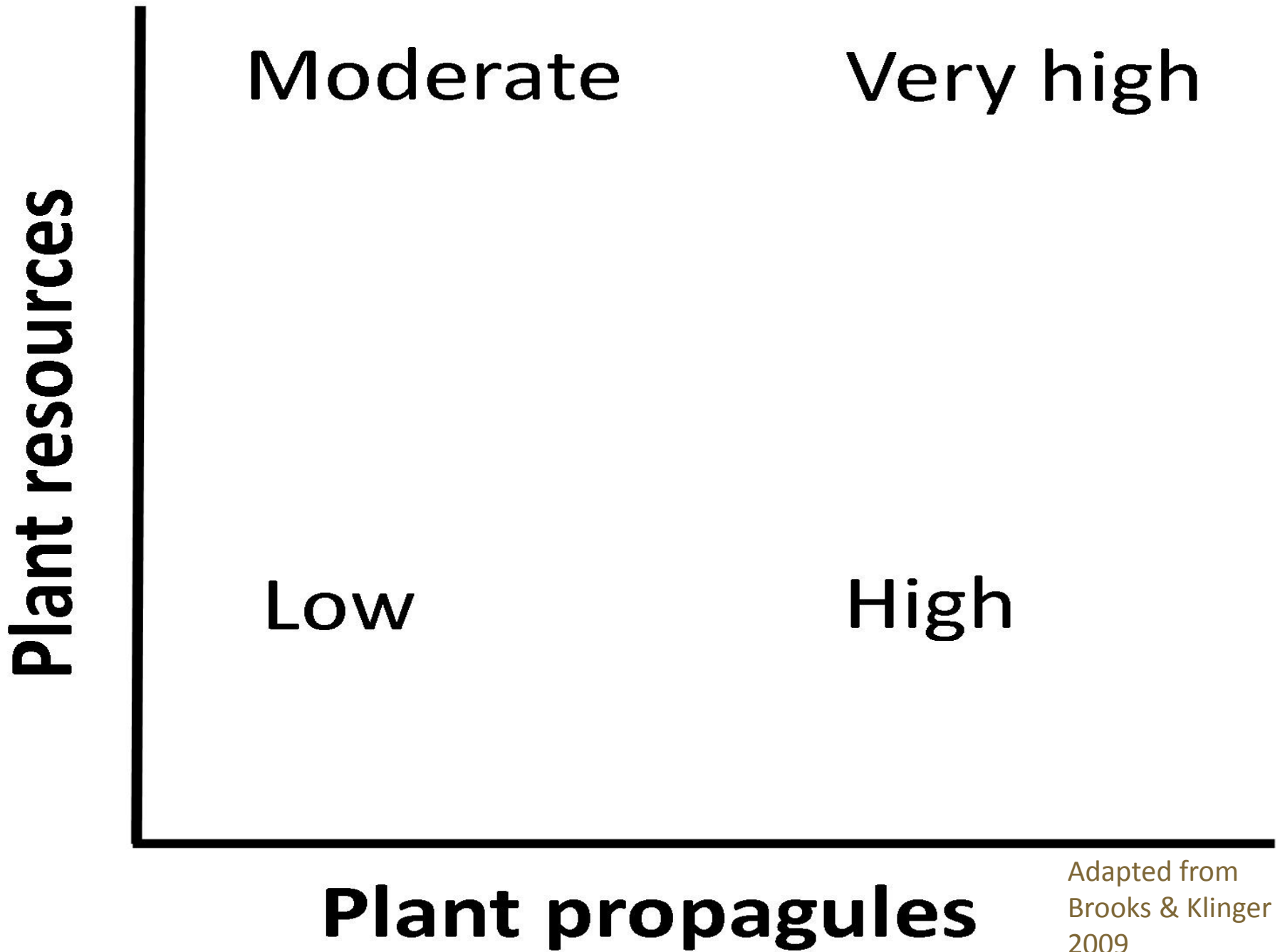
U.S. Department of the Interior
U.S. Geological Survey
Western Ecological Research Center

Prioritization



People are excellent weed vectors

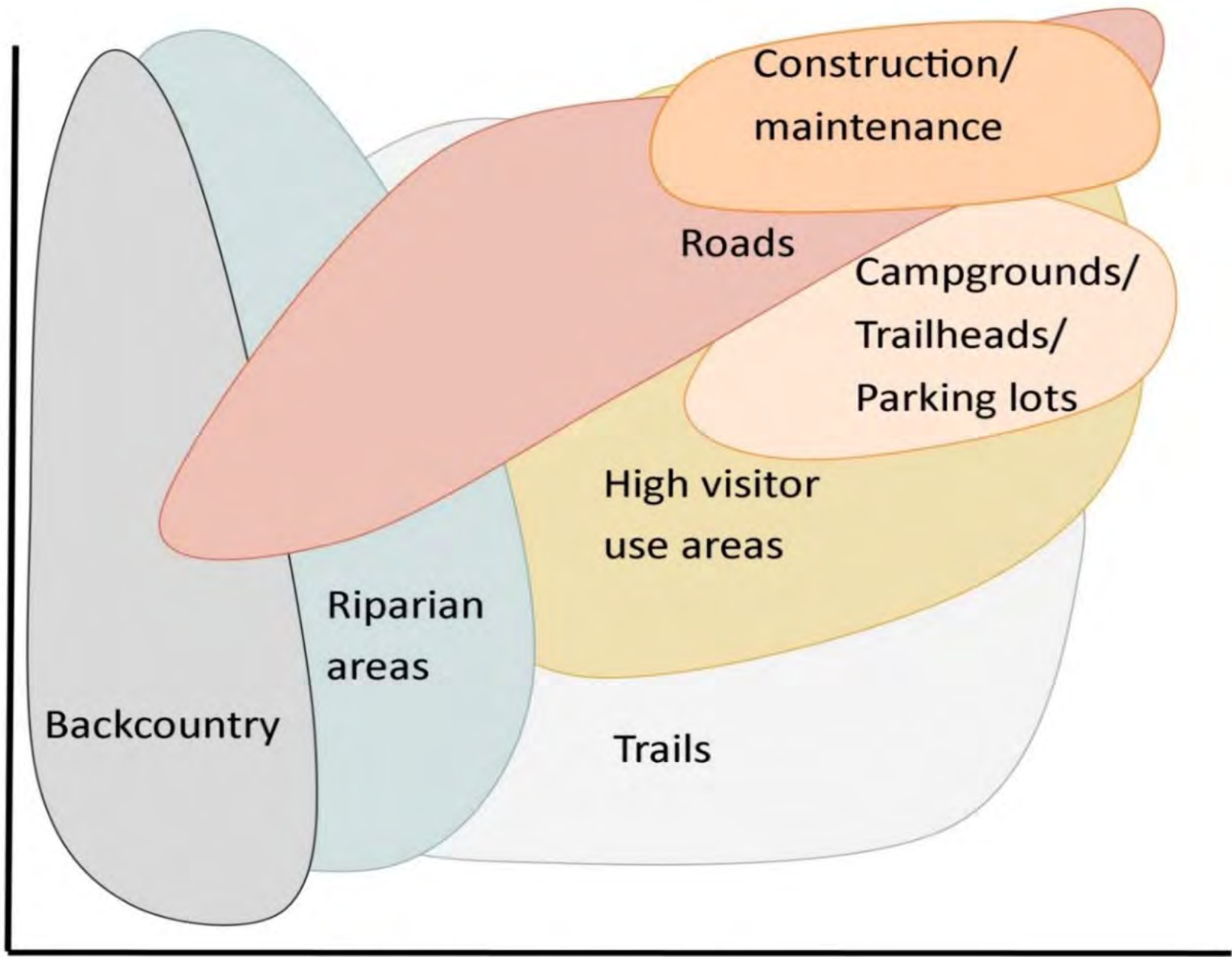




Adapted from
Brooks & Klinger
2009

Probability of invasive plant occurrence	Survey effort for features	Disturbance, Vector, or Habitat	Feature Examples
Highest	All features surveyed	Multiple	<ul style="list-style-type: none"> -Any combination of high and medium probability features, e.g. Trails through a wet area -Stock infrastructure -Staging areas/ stock piles
High	All features surveyed	Transportation corridors	<ul style="list-style-type: none"> - Roads - Trails
		Perennial disturbance	<ul style="list-style-type: none"> - Campgrounds - Parking lots - Dumpsters - Residential areas
Medium	Targeted and stratified	High quality habitat	<ul style="list-style-type: none"> - Wet areas (e.g. streams, seeps) - Recently opened canopy - Meadows - Exposed mineral soil
Low	Inspect periodically	Low quality Habitat	<ul style="list-style-type: none"> - Dry areas - No recent human disturbance - Closed canopy forest

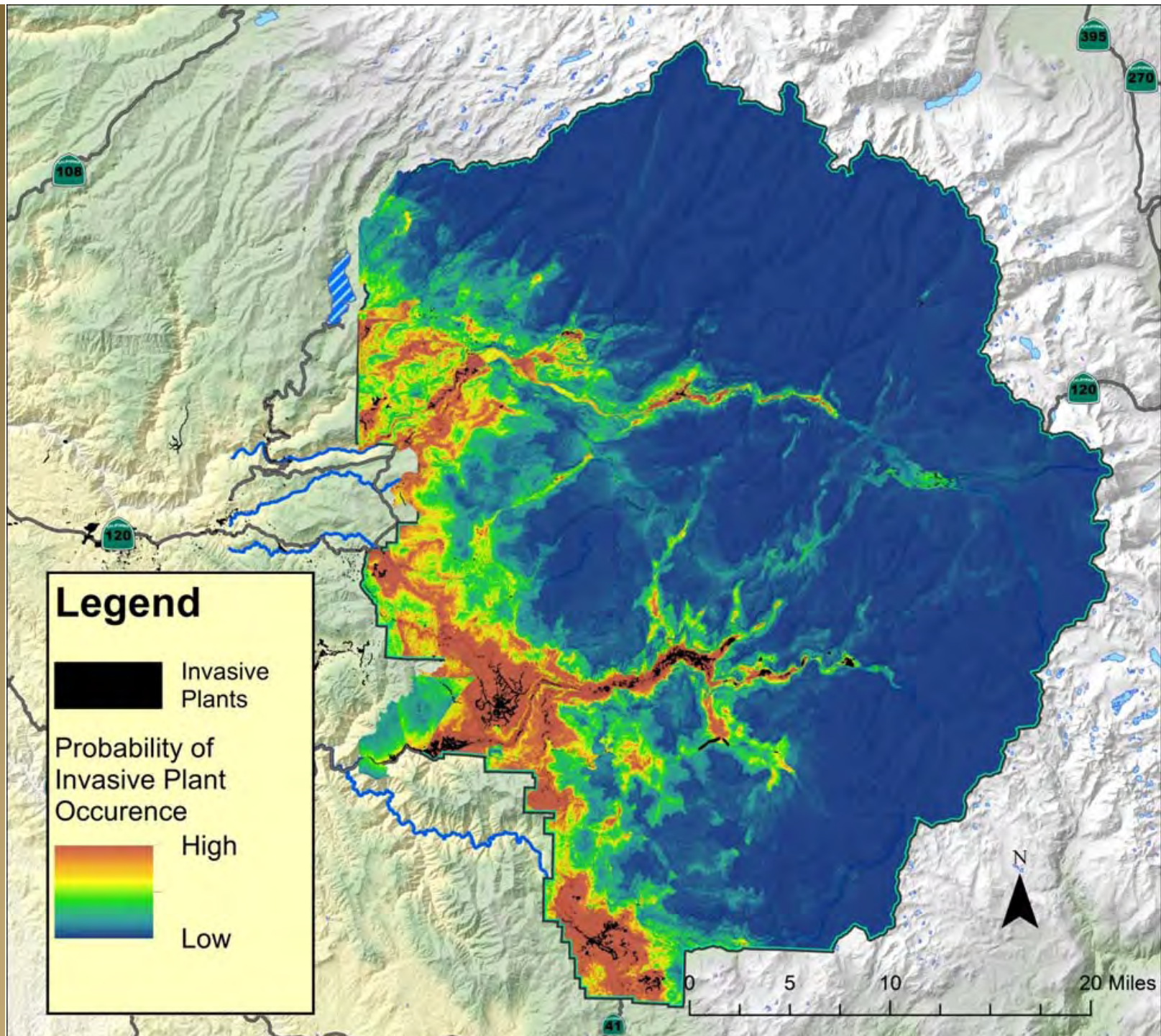
Plant resources



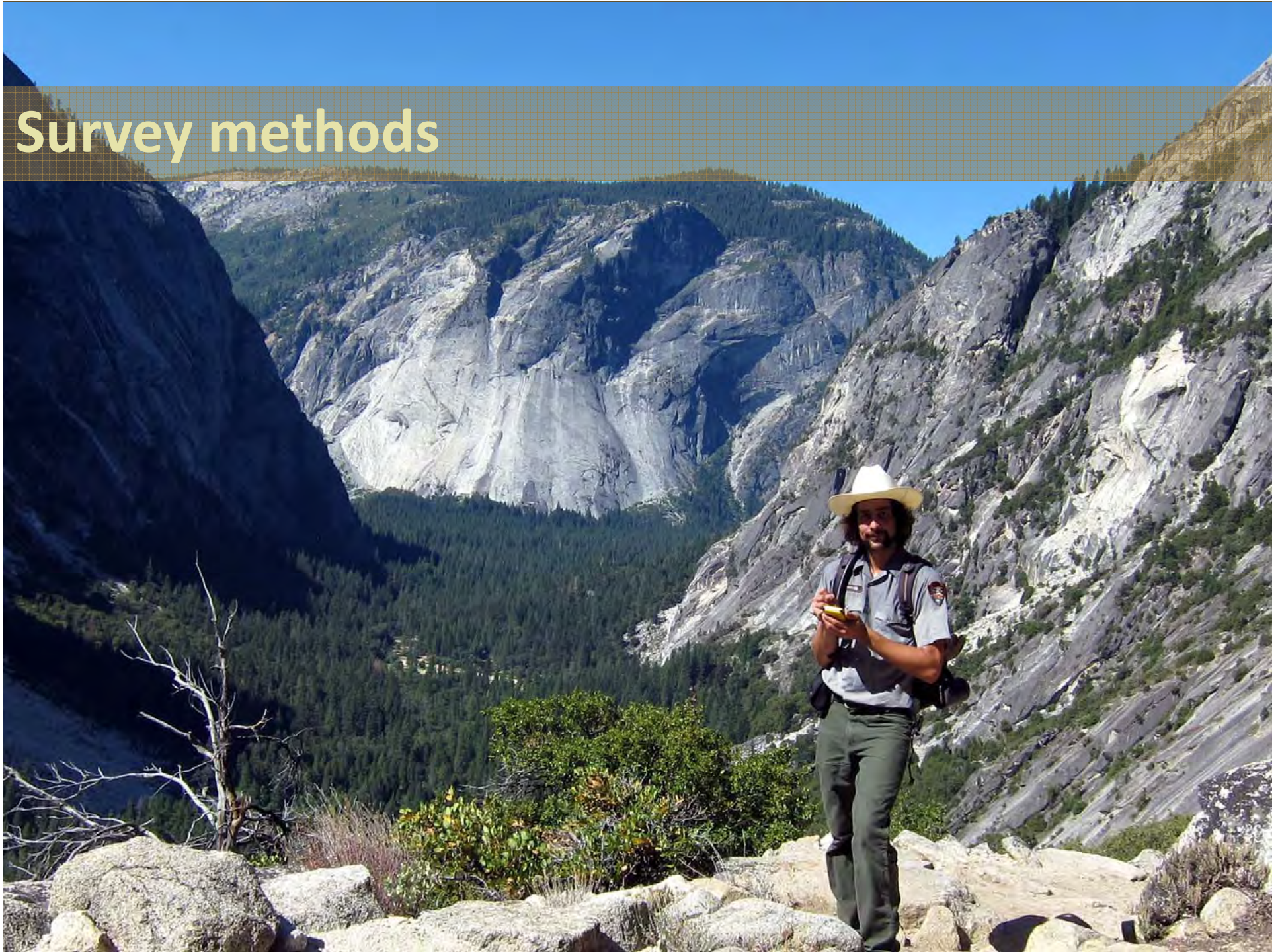
Plant propagules

Species distribution model

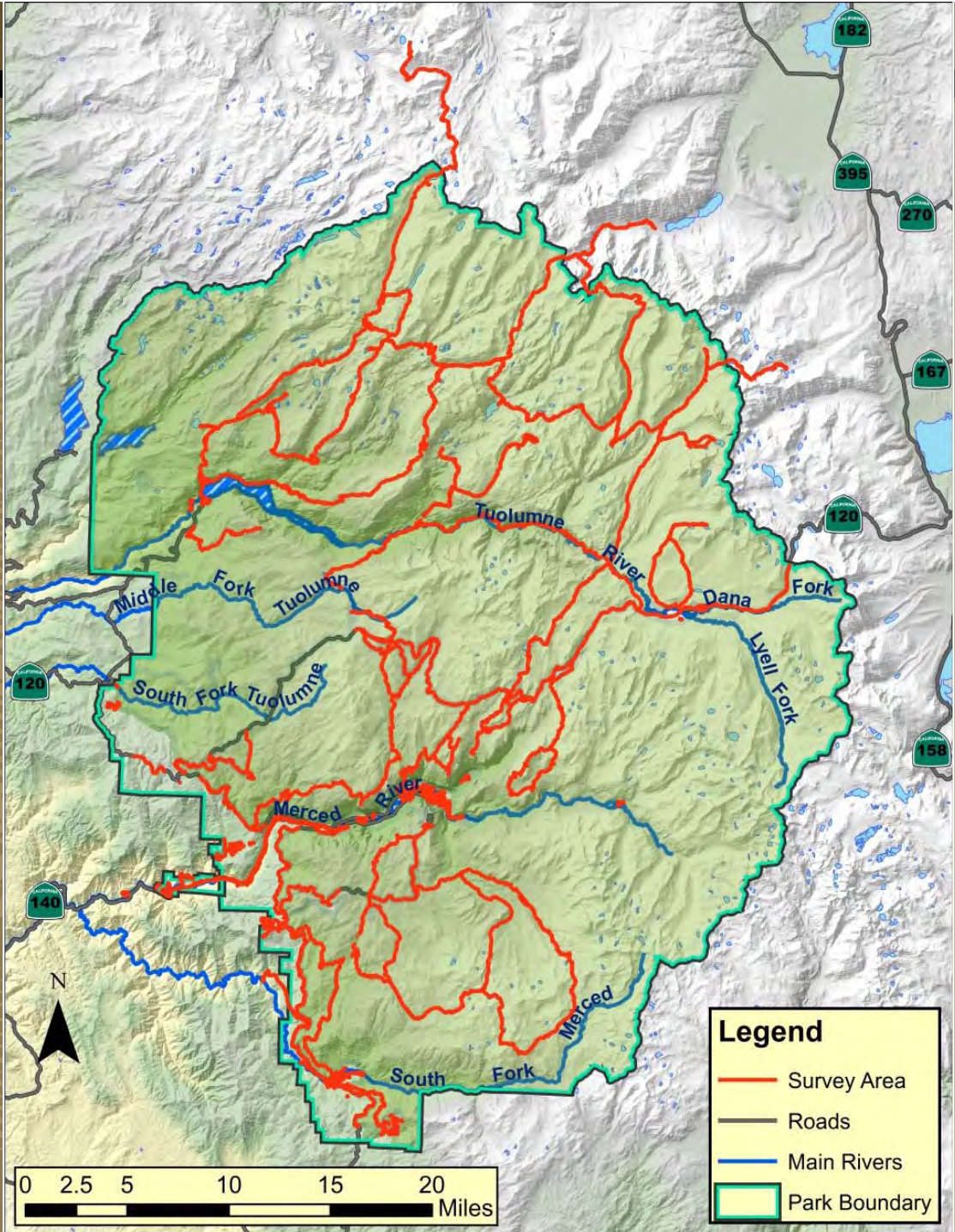


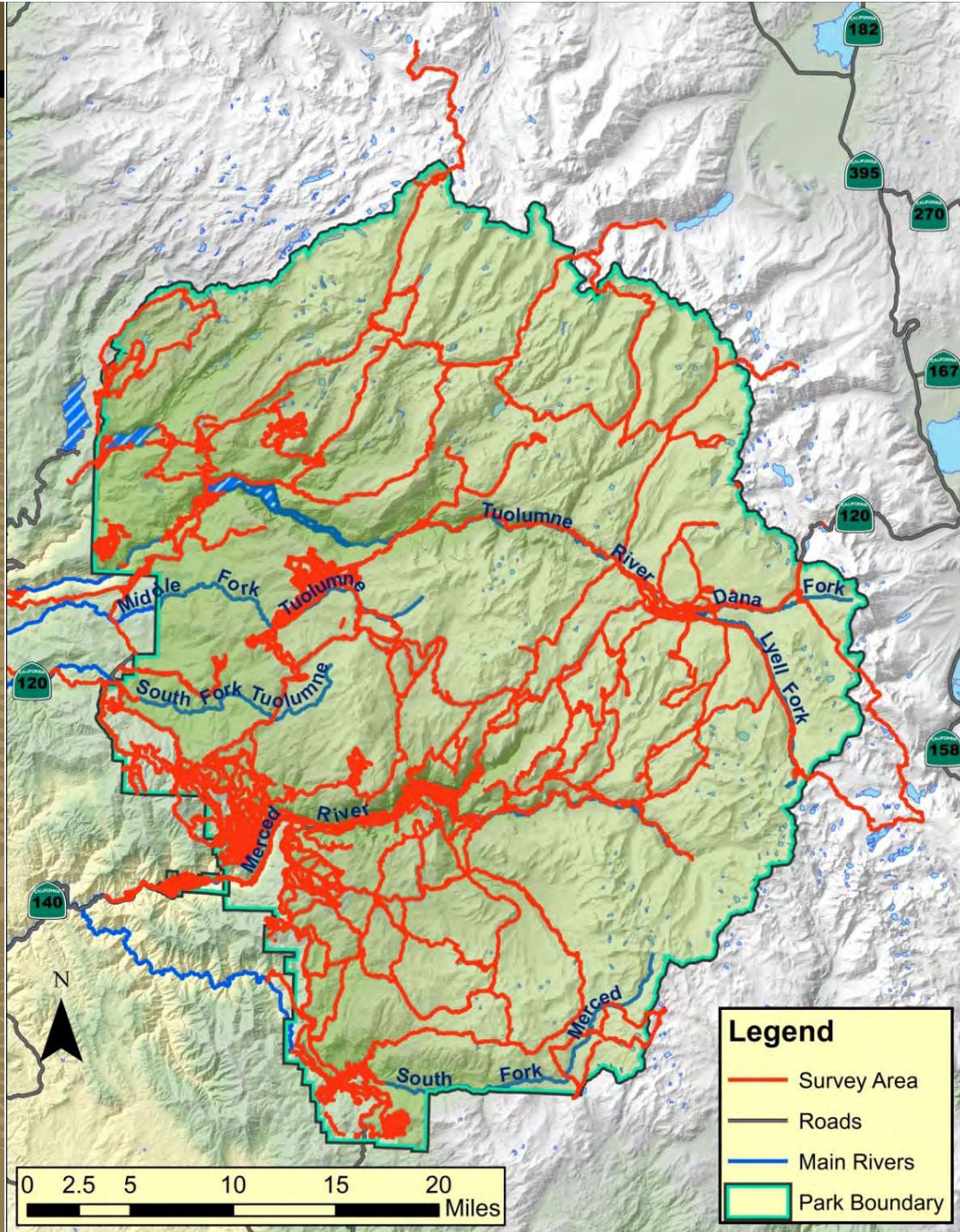


Survey methods



2012



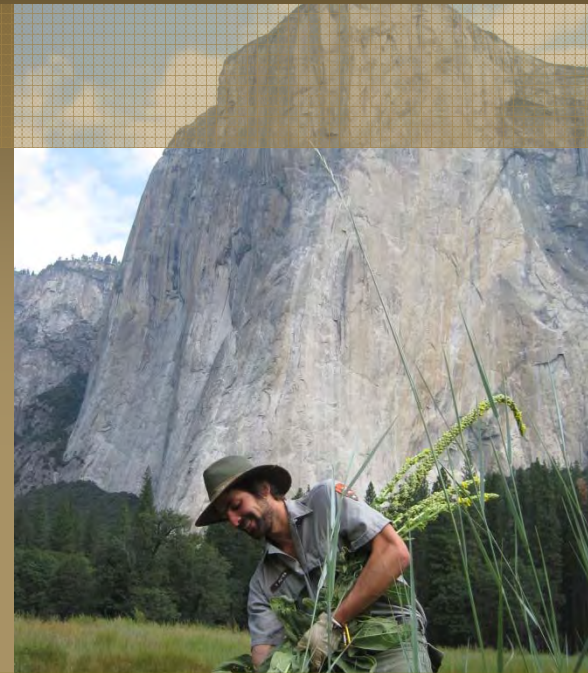
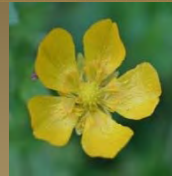


Yosemite survey results

- 15,189 acres surveyed
- Added to flora
 - 33 new non-native species to Yosemite
 - 3 CA native plants
 - 1 new species to CA (*Dracocephalum parviflorum*)



Yosemite survey results



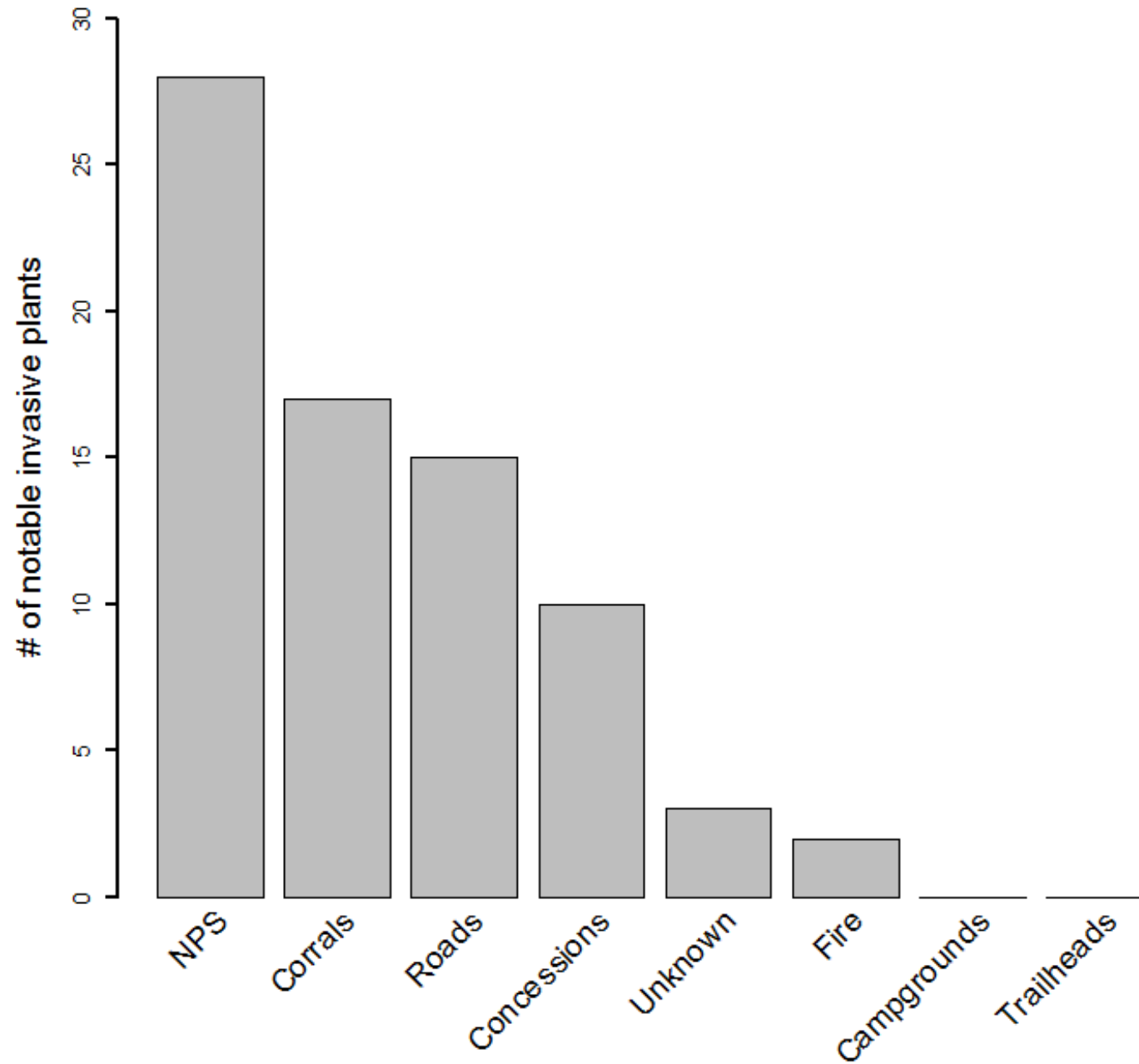
	Before 2012	After
Gross infested acres	1,332	2,314
Acres surveyed	8,003	20,138
Number of mapped occurrences	9,503	16,535
Mapped wilderness weeds	1,496 from 52 taxa	2,173 from 78 taxa

Sequoia survey results

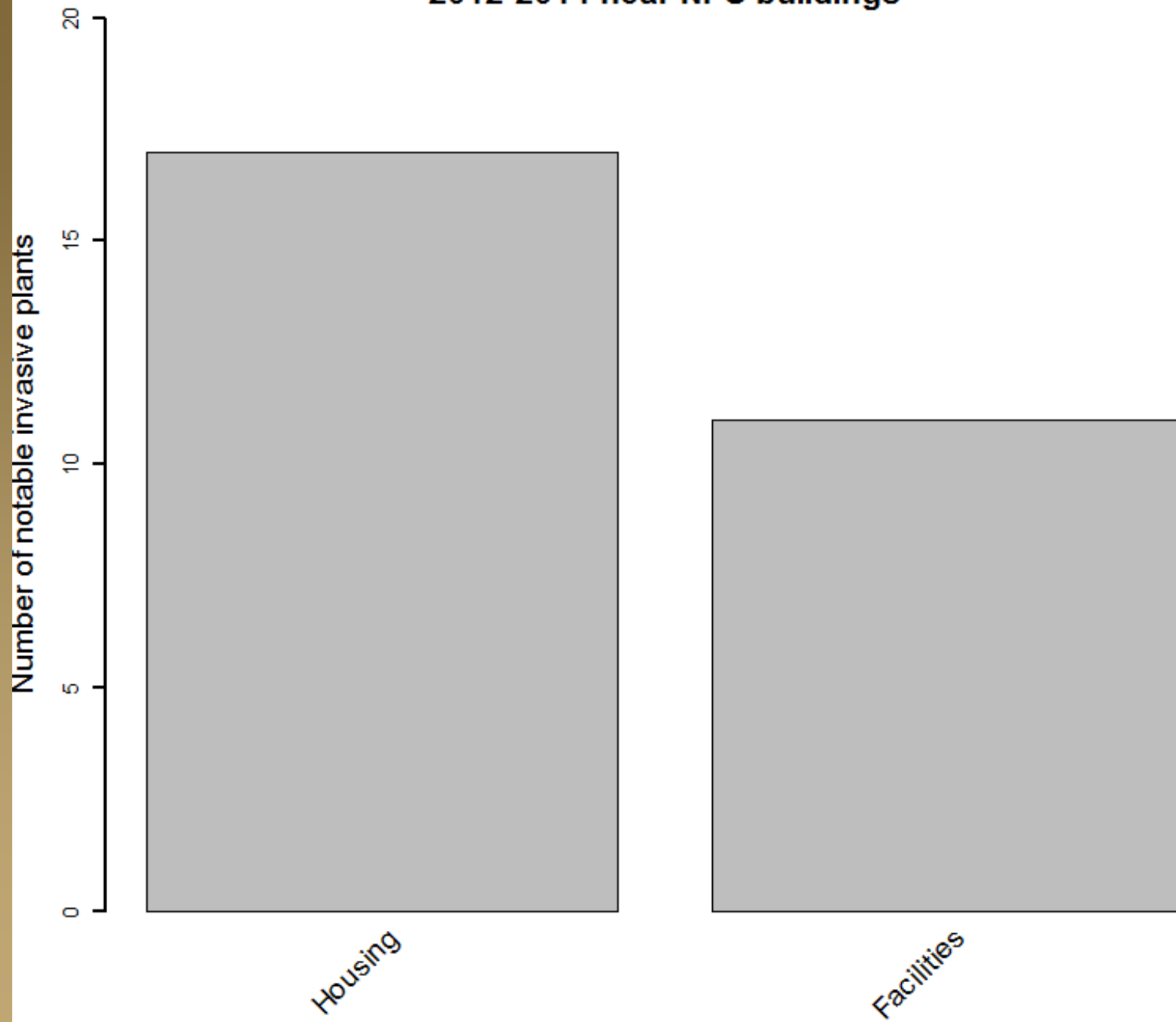
- Revisited low elevation developed areas in Sequoia NP
- 700 acres surveyed
- Added to flora
 - 10 new non-native species to Sequoia



Association of notable invasive plant occurrences 2012-2014



Associations of notable invasive plant occurrences 2012-2014 near NPS buildings



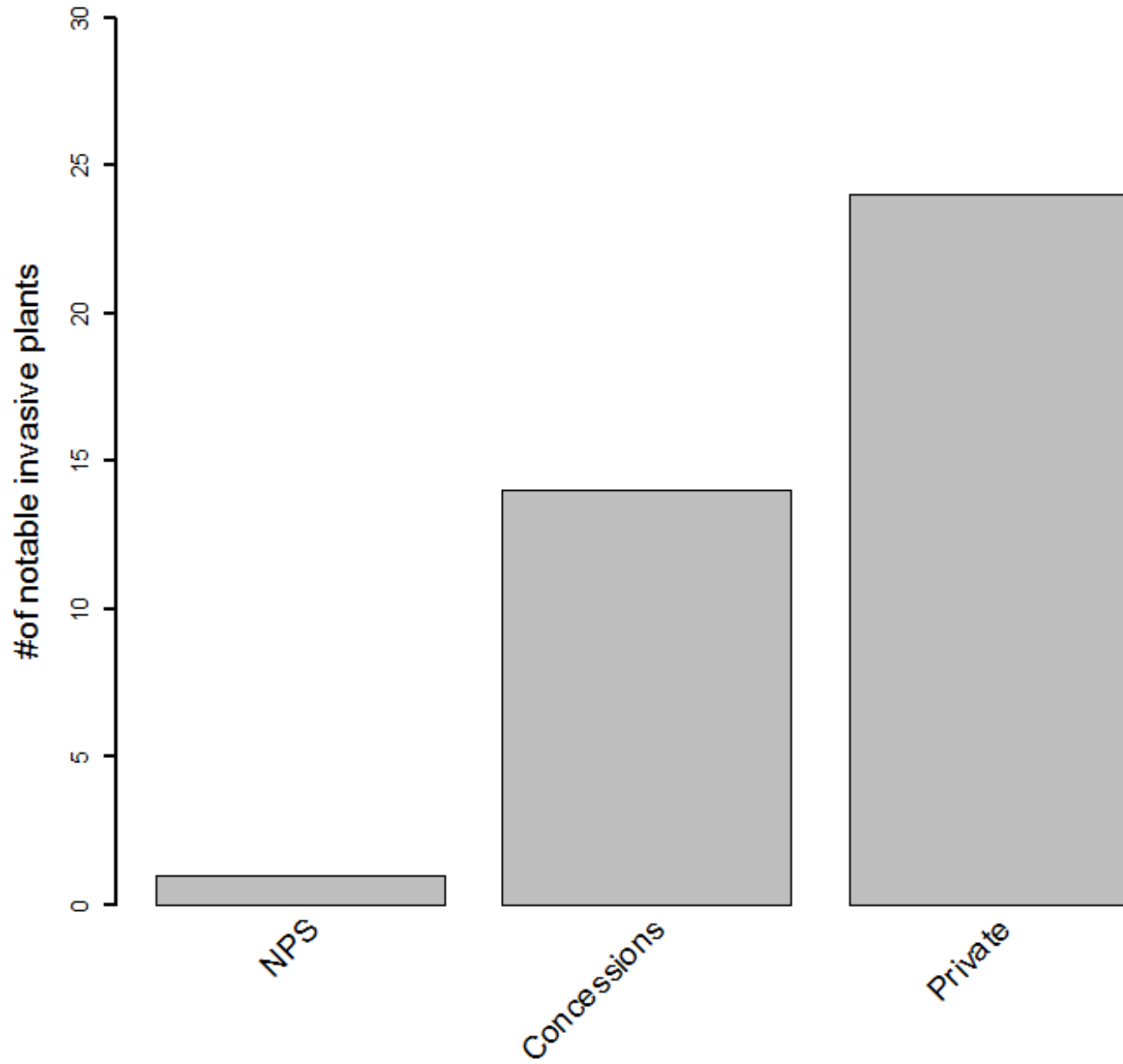
Tuolumne stock use



28 species in
Tuolumne stock
sites

18 species
associated with
campgrounds,
roads, trails,
facilities

Notable invasive plant occurrences in Tuolumne Corrals 2012-2014



Roadsides and parking lots

16 notable species

Highest percentage of Cal-IPC rated weeds



Wilderness



Native or not

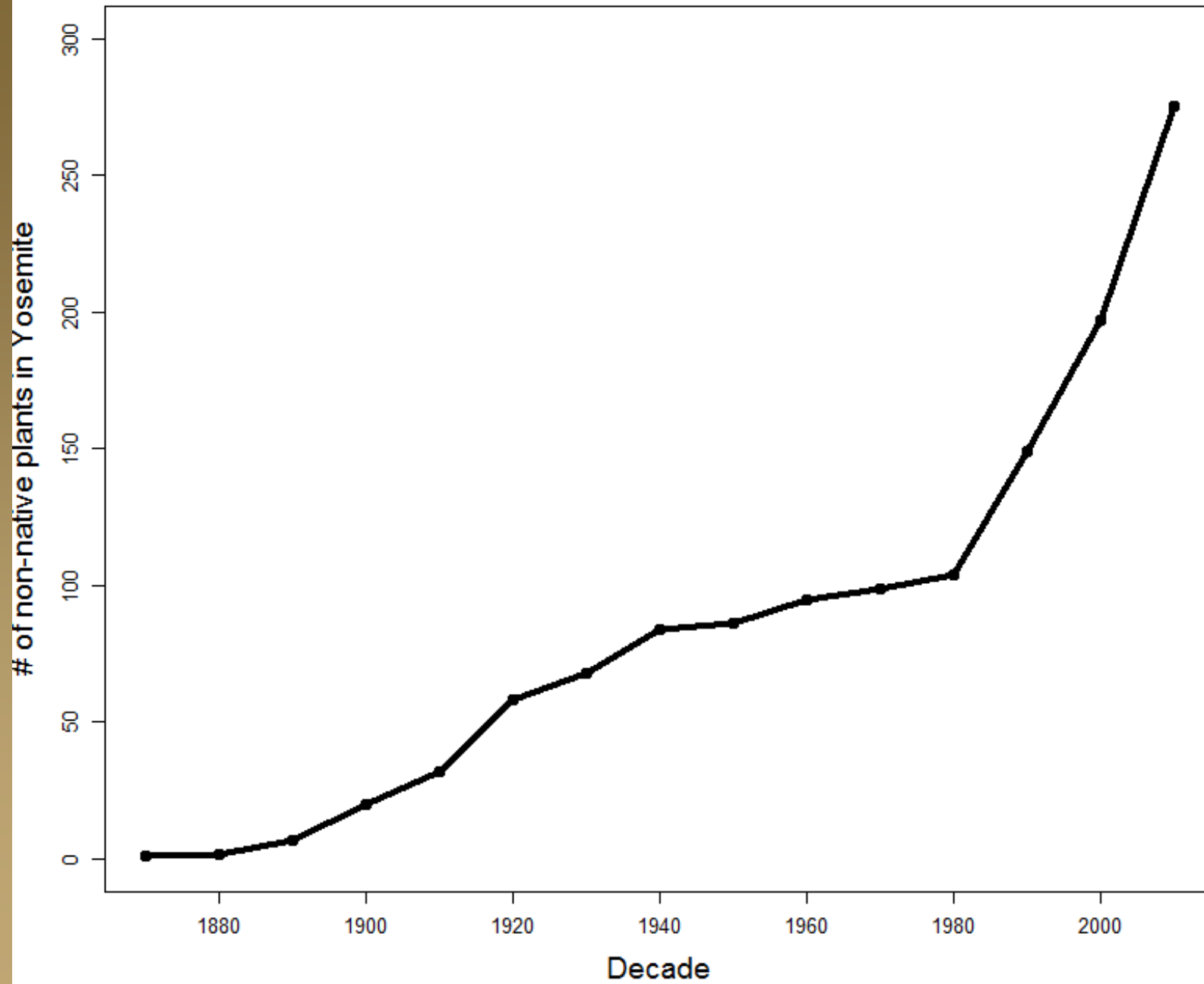


A photograph of a vast field of tall grasses, likely a meadow or prairie. The grasses are a mix of green and light brown/tan, suggesting some are in bloom or have dried. The field extends to the horizon under a clear sky. Overlaid on the image is a large yellow percentage and a text box.

16%

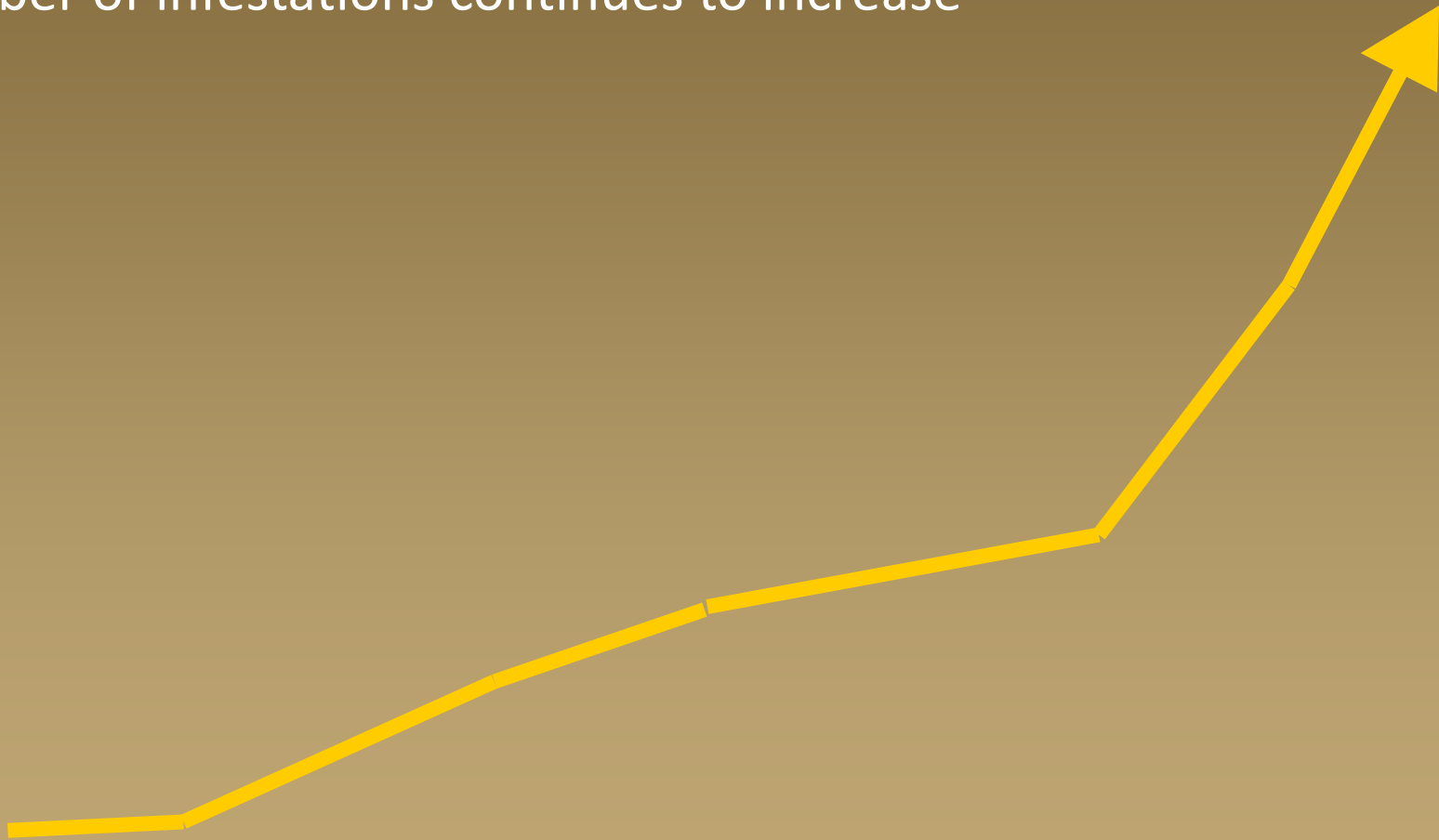
Of plants in Yosemite are non-native (276/1674)

Cumulative non-native plants in Yosemite



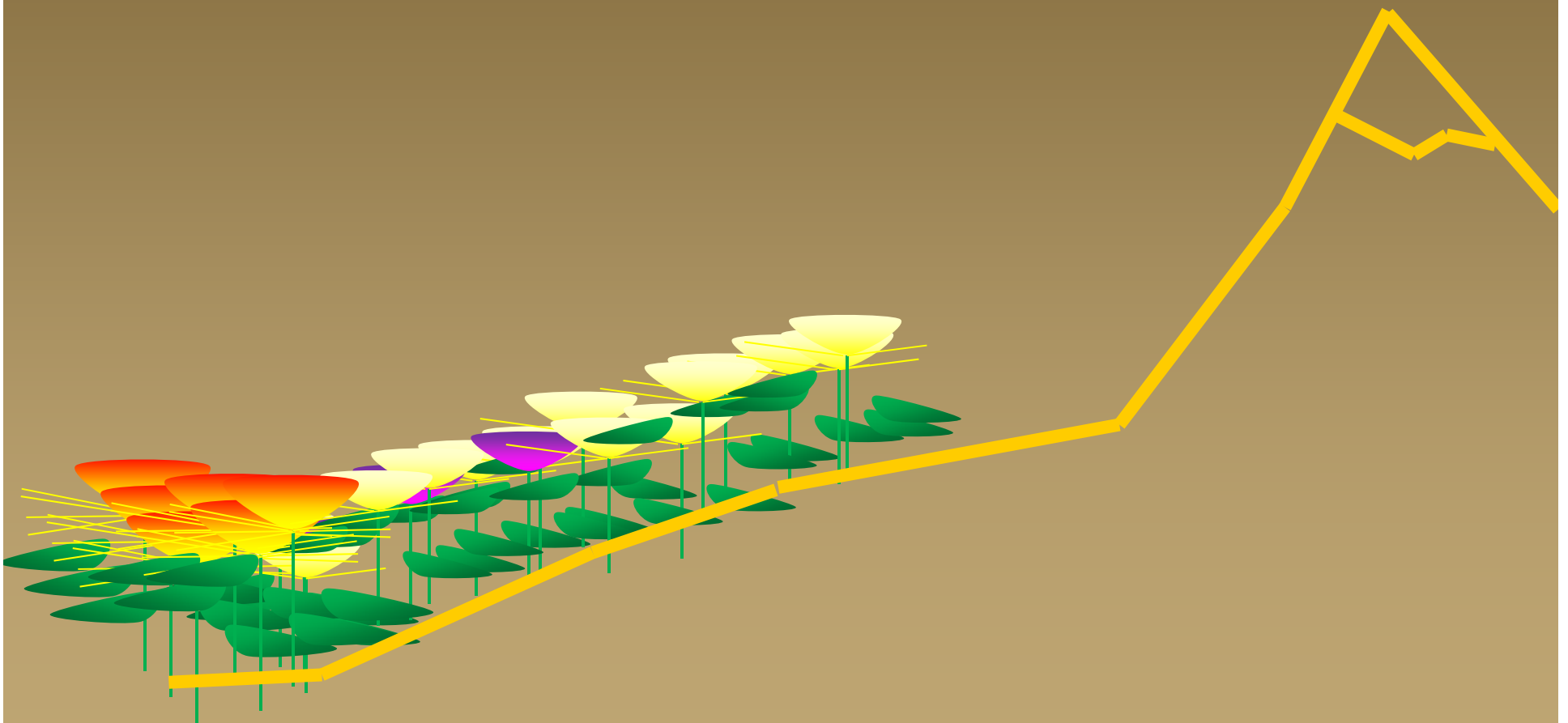
What did we learn?

Number of infestations continues to increase



Recap

Native and non-native species are moving around



4 million tourists are not the problem



We appear to be the problem!



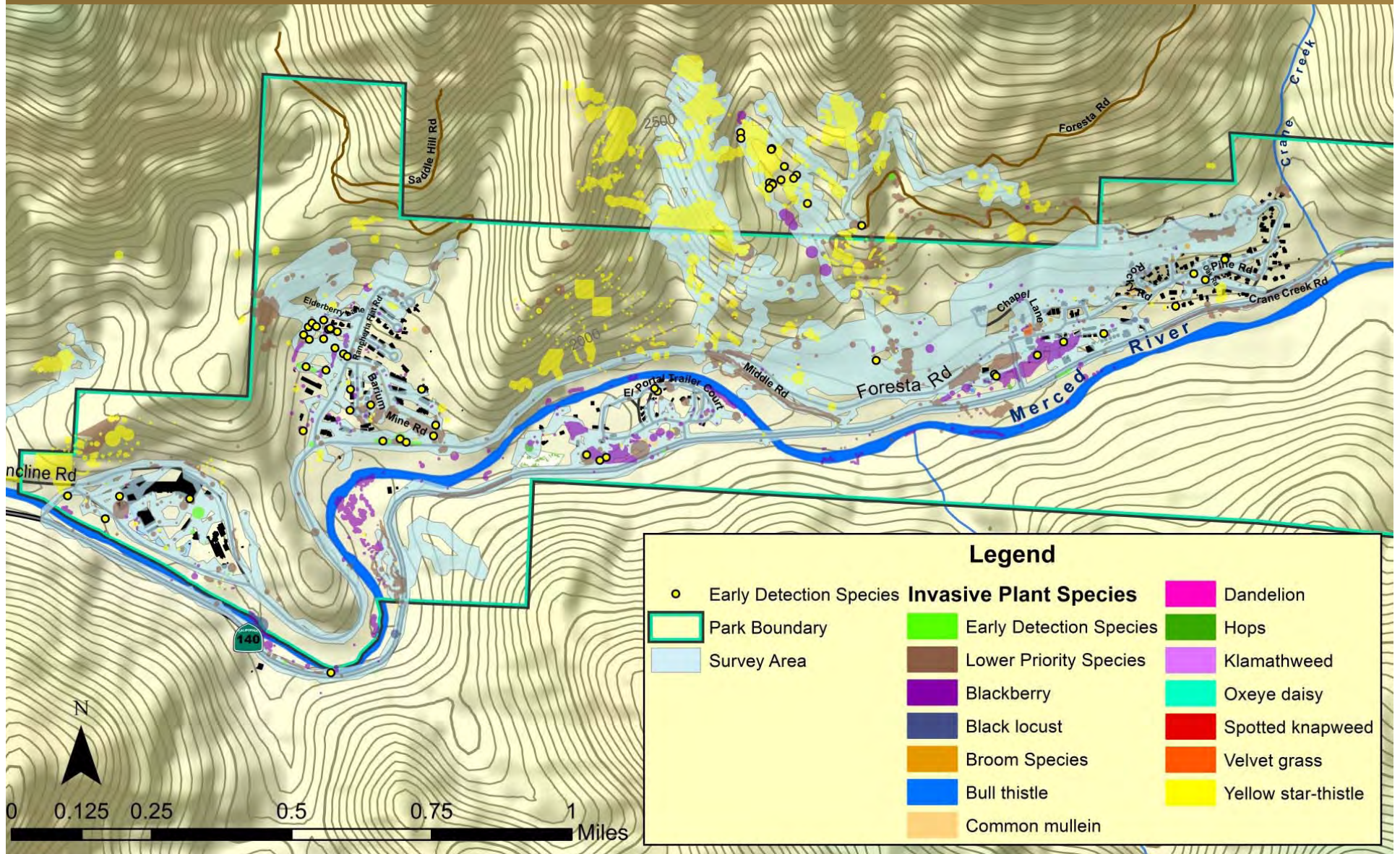
Reduce disturbance, check vectors



Practice land management hygiene



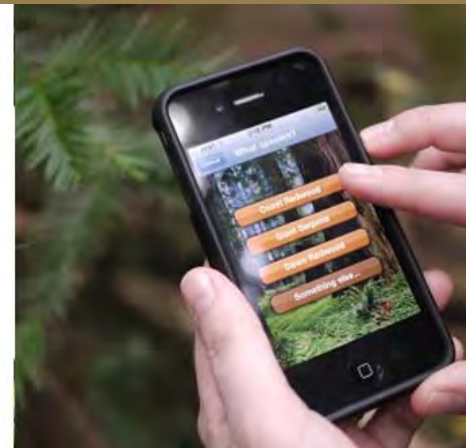
New weeds are right under our noses



Botanical expertise is critical



Take advantage of new technology



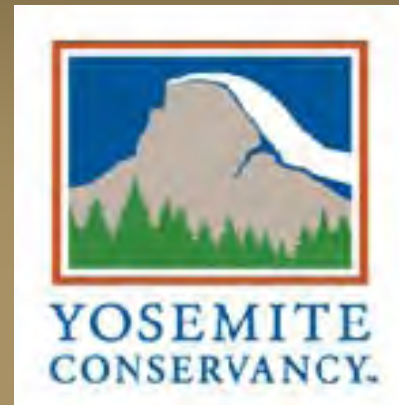


Rapid Response



Thanks!!!

- Yosemite Conservancy
- Garrett Dickman and Yosemite staff
- Athena Demetry and Sequoia staff
- Volunteers
- You!



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Questions?

