

United States Turtle Mapping Project with a Focus on Western Pond Turtle and Painted Turtle



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Background

- ❖ 220 million years (older than Triassic)
- ❖ Survived several geological changes
- ❖ 48% of 328 recognized turtle species are Threatened
 - 27% of these are Critically Endangered or Endangered



Turtles Are SLOW

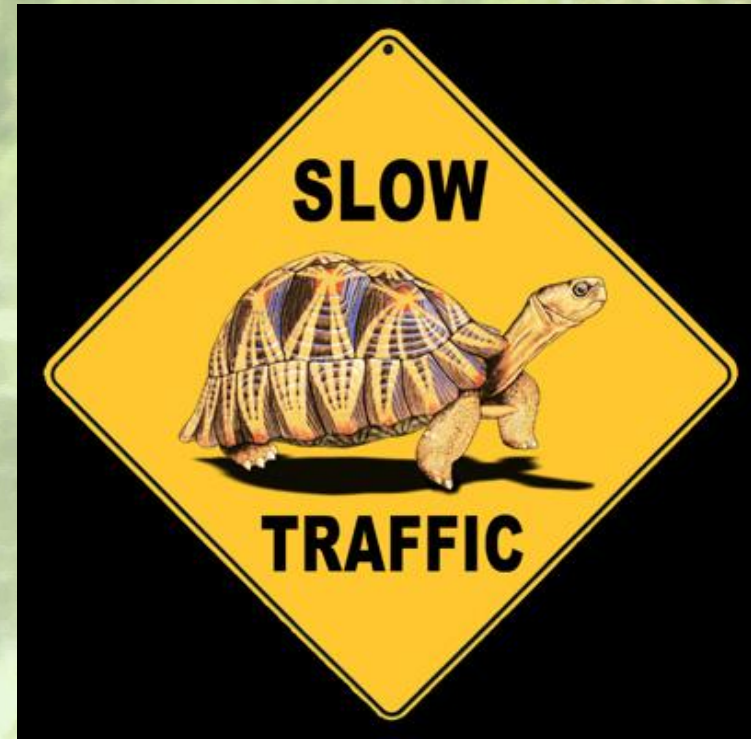
❖ Movement

- Relatively small range

❖ Reproduction

- Maturity: 4-15 years
- Western Pond Turtle: 5-10 years

❖ Slow movement + Reproduction = Vulnerable species



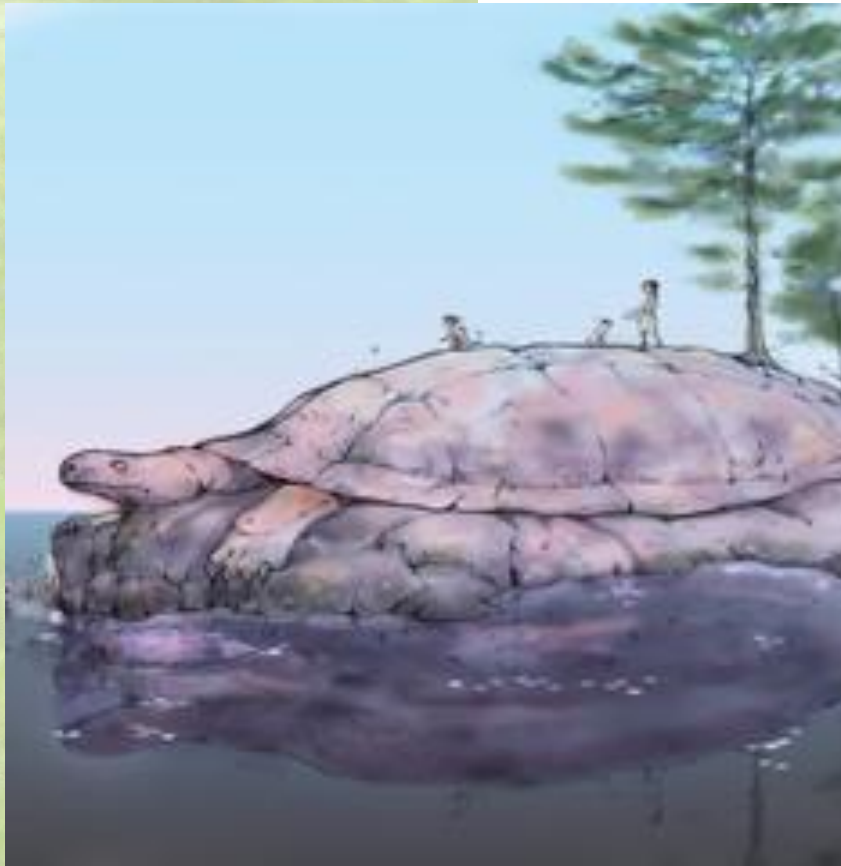
Turtle Threats

- ❖ Habitat loss
- ❖ Road mortality
- ❖ Predation
- ❖ Over-exploitation
- ❖ Recreation disturbances



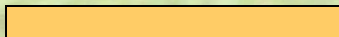
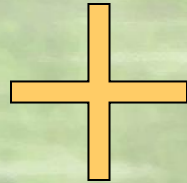
Why Should We Care?

Cultural



Images From: <http://www.oneidaindiannation.com/history/creationstory> (Lower Left), Everett Collection (Upper Right)
http://mdk12.org/instruction/clg/public_release/biology/G3_E5_I3.html (Center),

Year of the Turtle



- ❖ Diamondback Terrapin (*Malaclemys terrapin*)
- ❖ Red-eared Slider (*Trachemys scripta elegans*)
- ❖ Desert Tortoise (*Gopherus agassizii*)
- ❖ Texas Tortoise (*Gopherus berlandieri*)
- ❖ Gopher Tortoise (*Gopherus polyphemus*)
- ❖ Snapping Turtle (*Chelydra serpentina*)
- ❖ Eastern Box Turtle (*Terrapene carolina*)
- ❖ Ornate Box Turtle (*Terrapene ornata*)
- ❖ **Painted Turtle (*Chrysemys picta*)**
- ❖ **Western Pond Turtle (*Actinemys marmorata*)**

Why Focus On These TwoTurtles?



Western Pond Turtle
(*Actinemys marmorata*)



Painted Turtle
(*Chrysemys picta*)

Oregon Natives

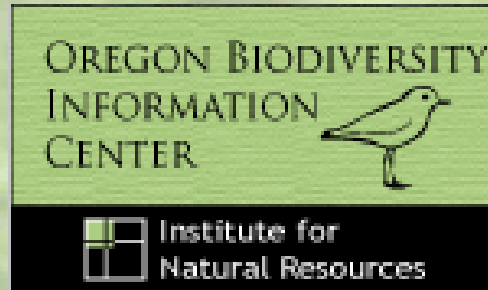
Purpose of the Study

❖ To generate a range-wide map of the distribution of Western Pond Turtle (*Actinemys marmorata*) and western distribution of Painted Turtle (*Chrysemys picta*).

- Decade of observation comparison
- Discrete site analysis
- Land ownership analysis



Methods: Gathering Data

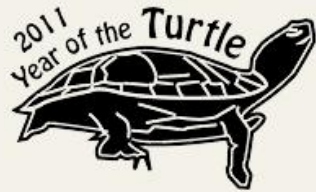


- ❖ British Columbia Ministry of the Environment
- ❖ Montana National Heritage Program
- ❖ Museum of Vertebrate Zoology, Berkeley
- ❖ Wyoming Natural diversity Database

Methods: Gathering Data



2011 Designated YEAR OF THE TURTLE!



2011
Year of the Turtle

Turtle conservation groups in partnership with PARC
are designating 2011 as the Year of the Turtle

Check Out All of Our Year of the Turtle Partners

NEW - Year of the Turtle Newsletter - December

January, February, March, April, May, June, July, August, September, October, November

NEW - Year of the Turtle Calendar - December



Year of the Turtle Newsletter

No. 1, January 2011, p. 9

USA Turtle Mapping Project

Many US freshwater turtles and tortoises are little-studied and basic ecological information is lacking, including where they occur. In 2011, a national effort will be launched to compile new and existing locality data for US turtles and tortoises, with a focus on selected species. These are not always the rarest species but include common species which could easily go the way of the extinct Passenger Pigeon from unmonitored 'take' or habitat degradation. In collaboration with the International Union for the Conservation of Nature (IUCN) Freshwater Turtle Specialist Group, a subset of US species has been identified for which distributional information is critically needed to better gauge their conservation status. Our focal species at this time include:

Diamondback Terrapin (*Malaclemys terrapin*)
Red-eared Slider (*Trachemys scripta elegans*)
Gopher tortoises (*Gopherus* species)
Desert Tortoise (*G. agassizii*)
Texas Tortoise (*G. berlandieri*)
Gopher Tortoise (*G. polyphemus*)
Snapping Turtle (*Chelydra serpentina*)
Box turtles (*Terrapene* species)
Eastern Box Turtle (*T. carolina*; especially *T. e. carolina*)
Ornate Box Turtle (*T. ornata*)
Painted Turtle (*Chrysemys picta*)
Western Pond Turtle (*Actinemys marmorata*)

You can participate in this effort by submitting turtle and tortoise localities on our forms (available at <http://www.parcplace.org/VOY/TurtleLocalityDataTemplate.xls>) to yearoftheturtle2011@gmail.com. Please note that there are both required and optional data columns on these forms. We would like to thank you in advance for your efforts to fill out the required data elements (species identification, date of observation, location, your name and contact information), and to provide a digital photo when possible.



Kimberly Burela (see photo) is a student intern at Oregon State University, Corvallis, who will be working with Dede Olson (US Forest Service, Pacific Northwest Research Station; National Co-Chair of PARC) to compile these forms and develop distribution maps of these species. If you would like to help with data compilation or mapping in your area, please contact Dede: dedeolson@fs.fed.us

Another way that local turtle enthusiasts, schools/classes, or conservation groups may participate in this effort is to conduct a local 'bikblitz' to collect new turtle or tortoise distribution information. Please check with state laws regarding permits that may be needed if you plan to handle or trap these species, and be aware that you cannot go onto others' lands without their permission. And of course, Safety First!

Turtles in the News

Chris Tabaka, veterinarian at the Binder Park Zoo in Battle Creek, MI, discusses the road to recovery for turtles following Enbridge Inc.'s oil spill into the Kalamazoo River in July 2010. Read the full story at http://www.mlive.com/news/kalamazoo/index.ssf/2010/12/veterinarian_discusses_rescues.html.

If you have items to contribute to Turtles in the News, please send links to newsletter editor David Dimitrie at yearoftheturtle2011@gmail.com.



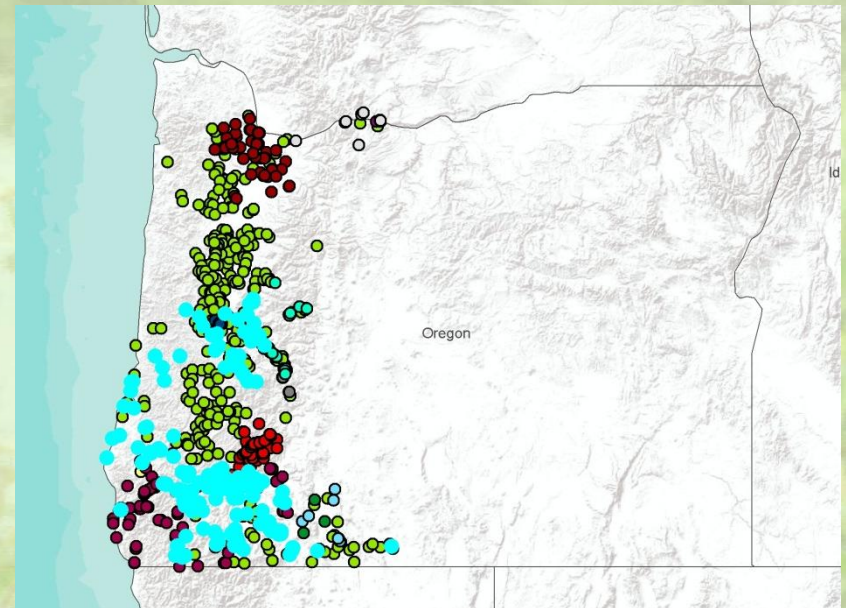
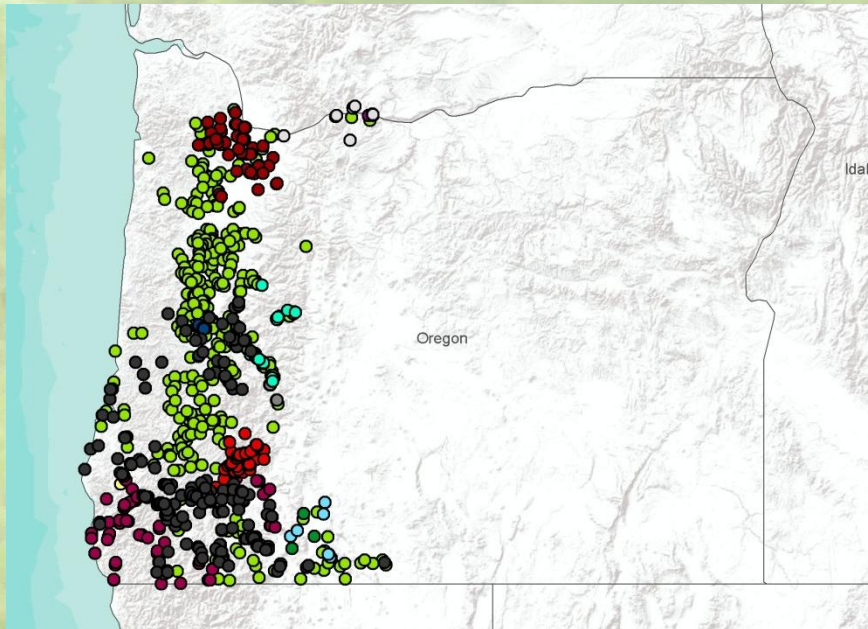
Western Pond Turtle. Pencil drawing by Dede Olson, from a photo by Garth Hodgson.

Submit your turtle art, stories, and poetry

Submit your turtle art (in jpg, tiff, or pdf format) and copies of your stories and poems via email to yearoftheturtle2011@gmail.com. Please include your name, location, and any comments about the submission in your email message. We will select several submissions to include in upcoming newsletters.

Methods: Remove Redundancy

- ❖ ArcMap Version 9.3.1
- ❖ Duplicate Records Detected with “Select By Location” Tool
 - Compares points between files
 - 10-m buffer distance



Methods: Comprehensive File

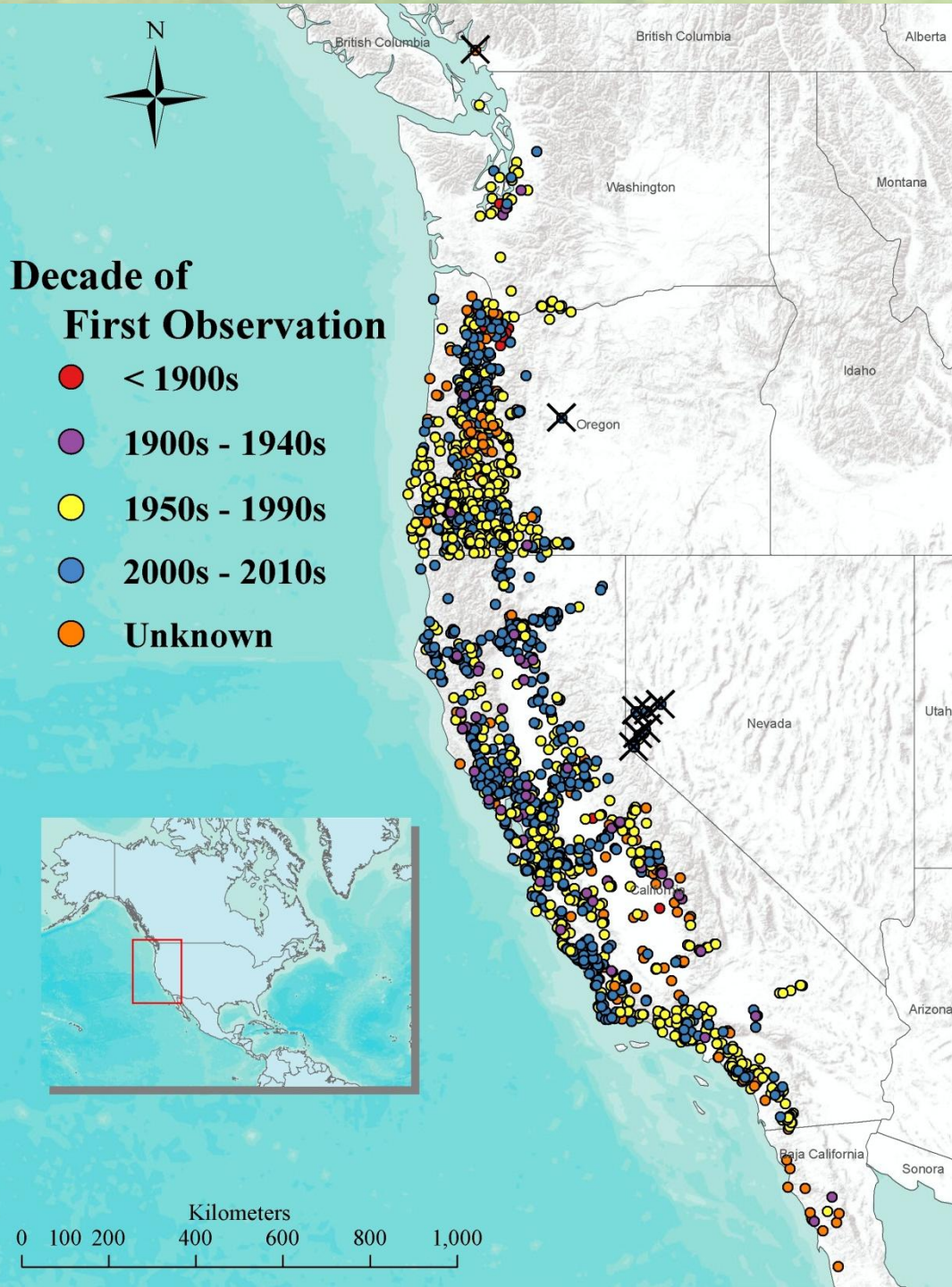
- ❖ Remaining locations and attributes combined
- ❖ Comprehensive database mapped and analyzed using ArcMap
 - Decade comparison generated
 - Discrete sites and land ownerships analyzed

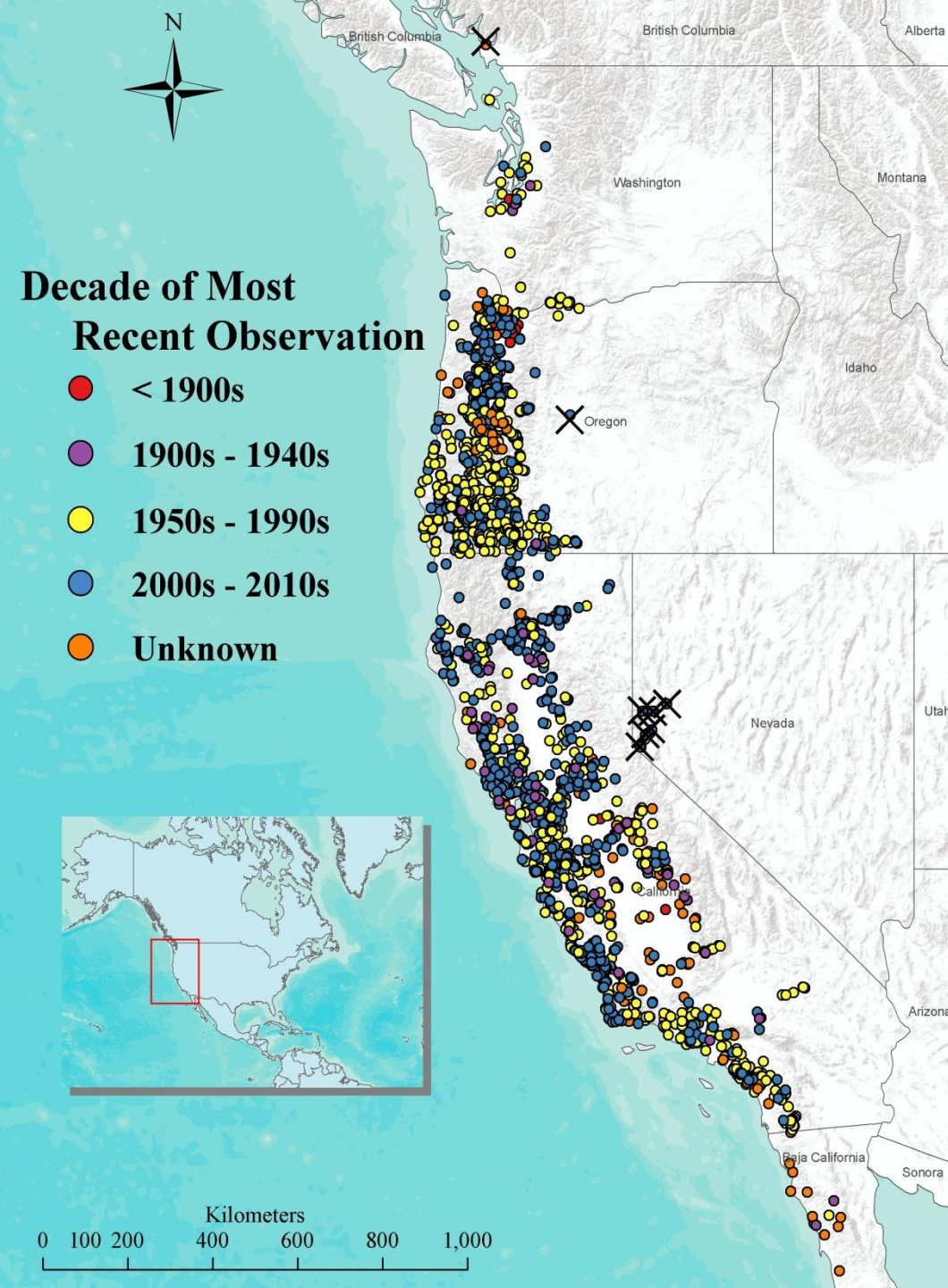
Results: Western Pond Turtle



- ❖ X=extirpated/marginal sites (R. Bruce Bury pers. commun.)
- ❖ N=2,935 locations
- ❖ Earliest: 1 January 1850

Photos By: Jo Staff



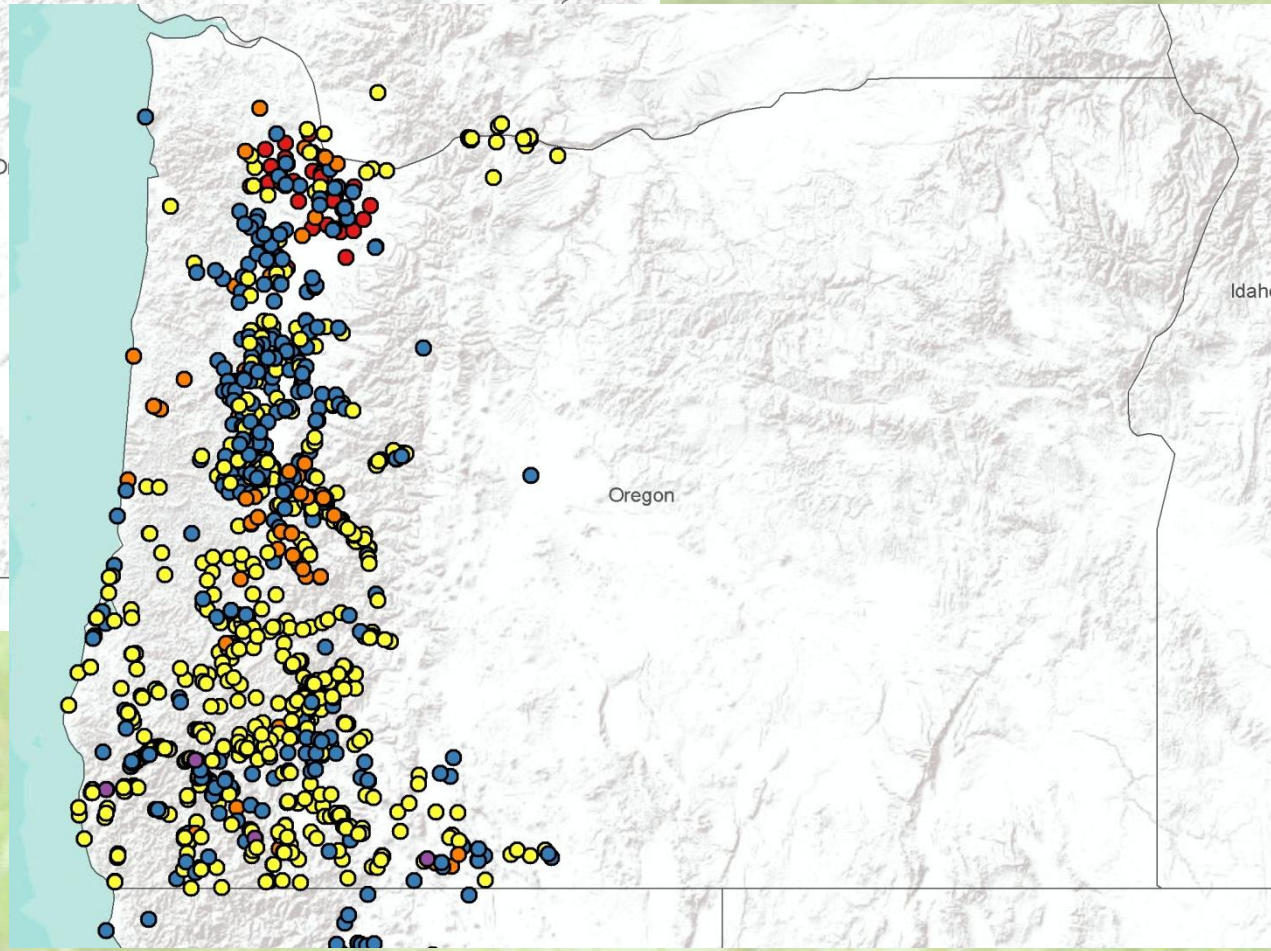
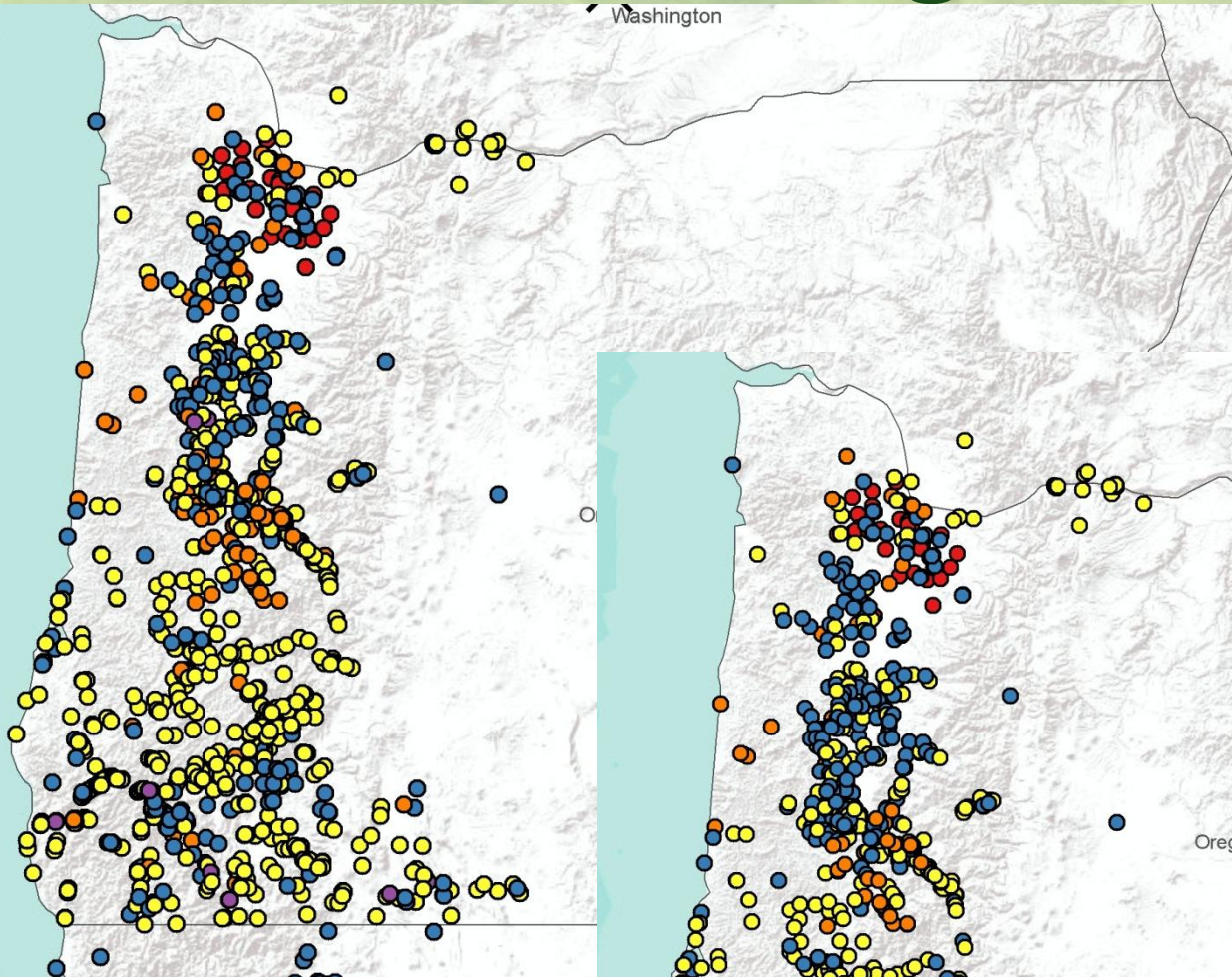


❖ 91 Locations Revisited in 2000s

Decade	1 st Observation	Recent Observation
<1900s	50	50
1900s	4	4
1910s	23	23
1920s	17	16
1930s	33	33
1940s	23	19
1950s	26	23
1960s	143	140
1970s	80	66
1980s	253	222
1990s	1066	1058
2000s	897	988
2010s	21	21
Unknown	299	272
Total	2,935	2,935

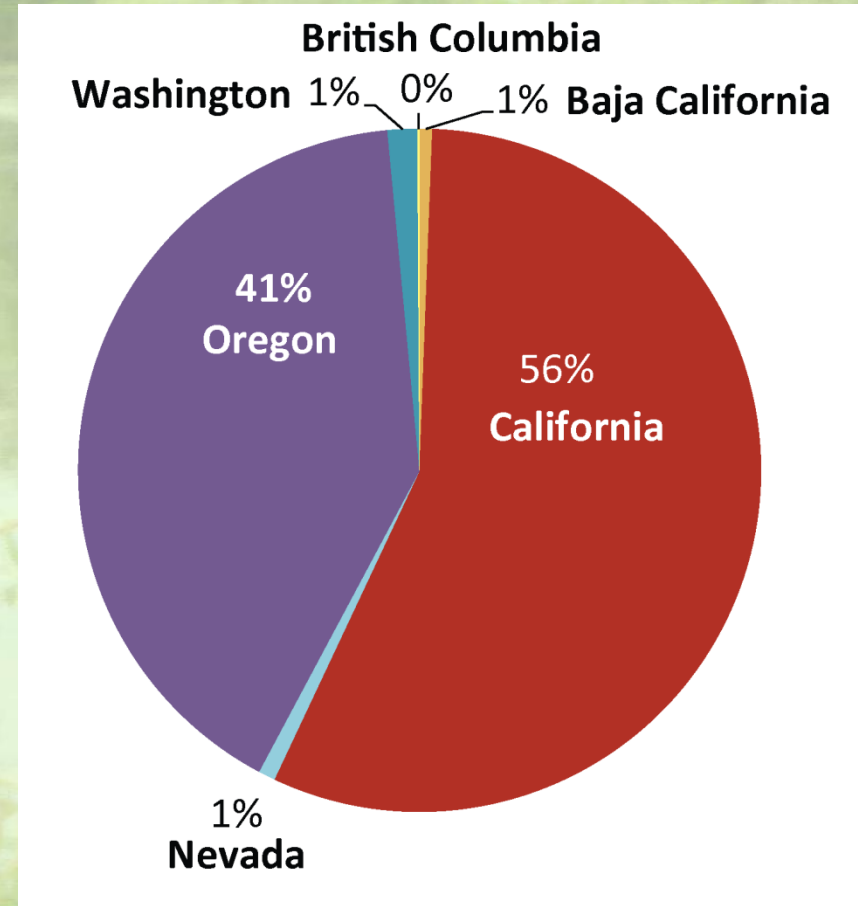
Oregon

- < 1900s
- 1900s - 1940s
- 1950s - 1990s
- 2000s - 2010s
- Unknown



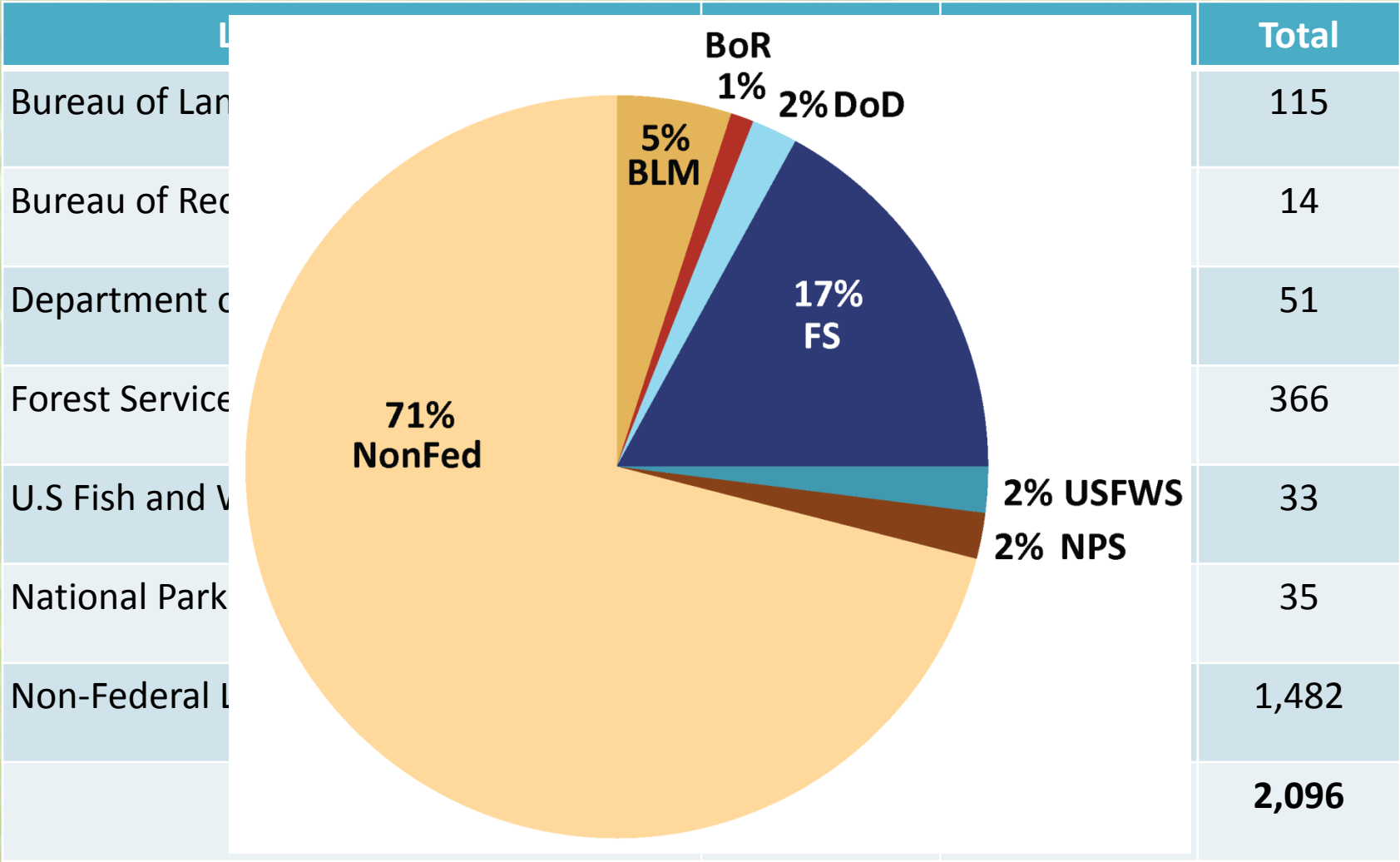
Discrete Sites by State

State/ Province	Number of Sites
Baja California, Mexico	14
California, US	1,191
Nevada, US	16
Oregon, US	859
Washington, US	30
British Columbia, Canada	1
Total	2,111 (2,096 U.S locations)



Discrete Sites by Land Ownership

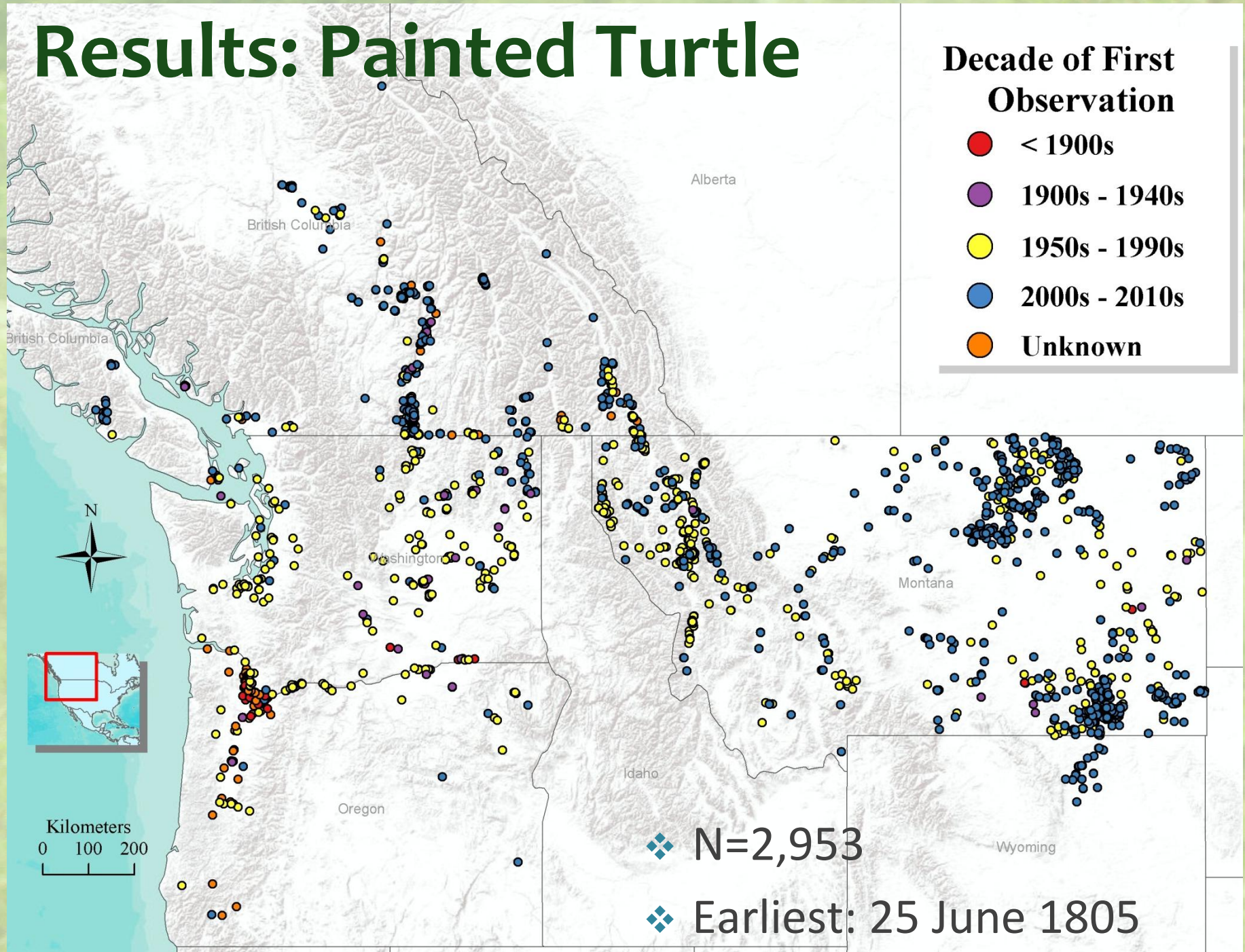
US Only



Results: Painted Turtle

Decade of First Observation

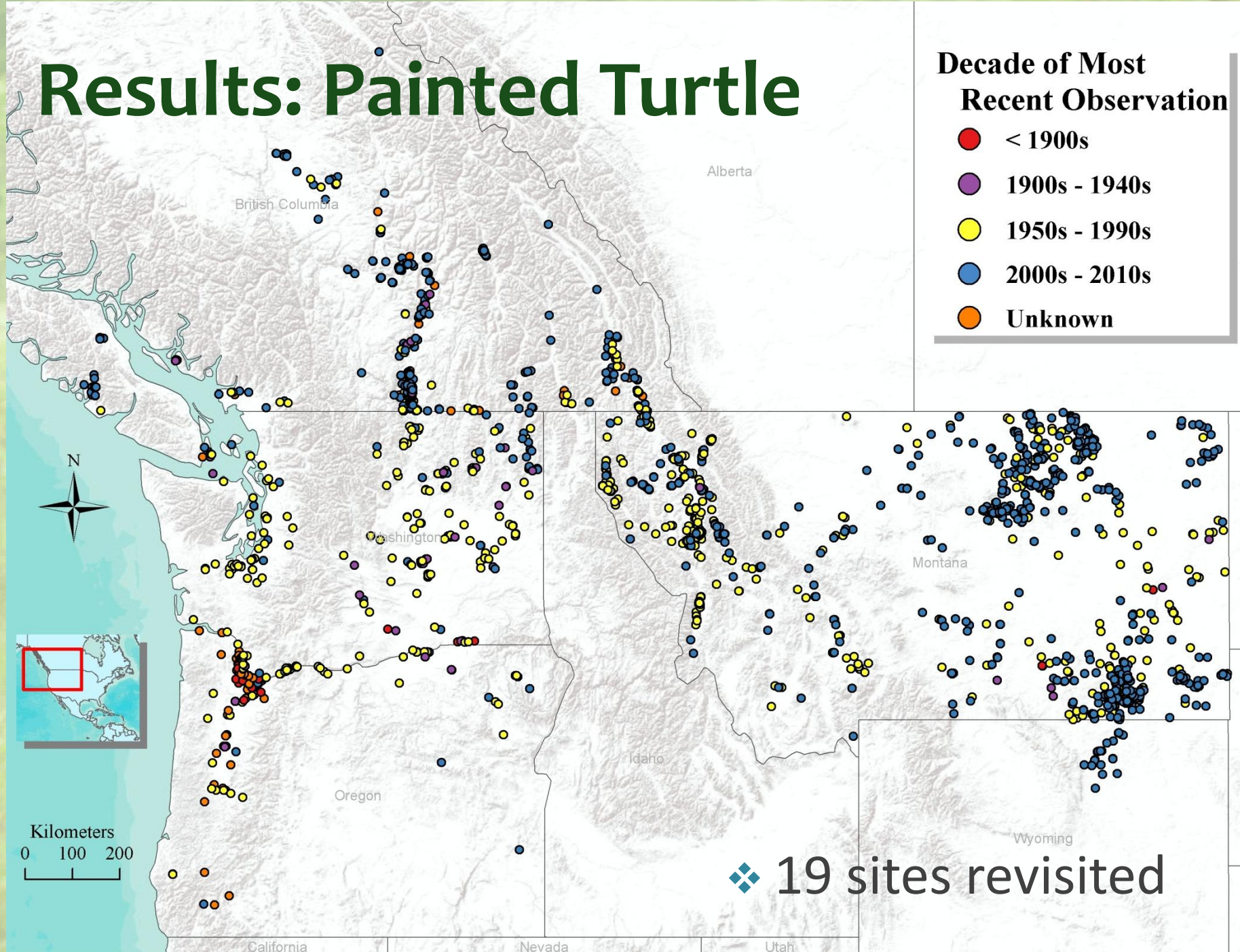
- < 1900s
- 1900s - 1940s
- 1950s - 1990s
- 2000s - 2010s
- Unknown



Results: Painted Turtle

Decade of Most Recent Observation

- < 1900s
- 1900s - 1940s
- 1950s - 1990s
- 2000s - 2010s
- Unknown



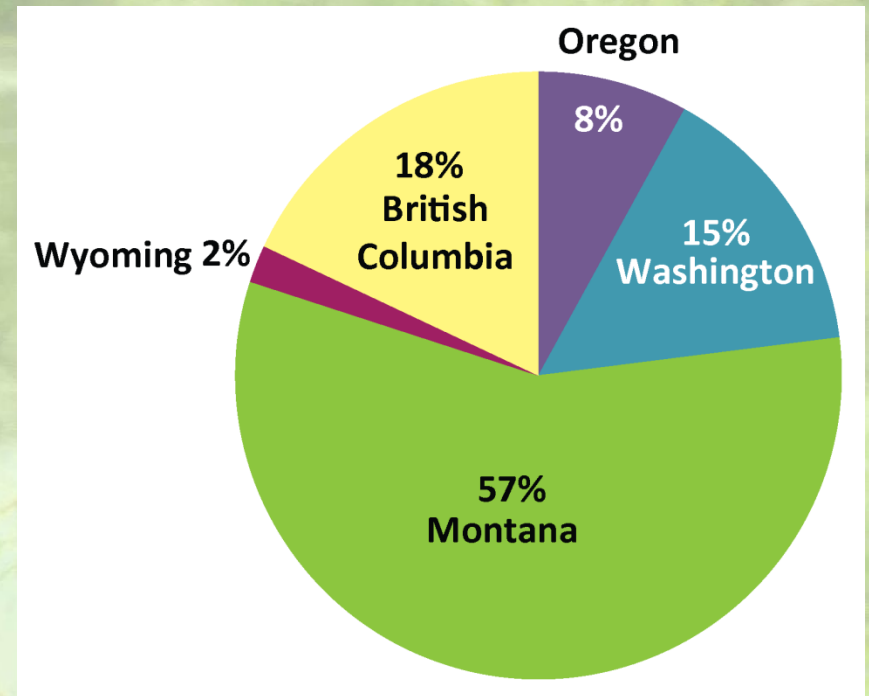
◆ 19 sites revisited

Decade Breakdown of Sites

Decade	1 st Observation	Recent Observation
<1900s	38	38
1900s	16	16
1910s	5	5
1920s	14	14
1930s	50	48
1940s	20	20
1950s	23	23
1960s	29	28
1970s	98	82
1980s	185	197
1990s	716	716
2000s	1402	1409
2010s	157	157
Unknown	200	200
Total	2,935	2,935

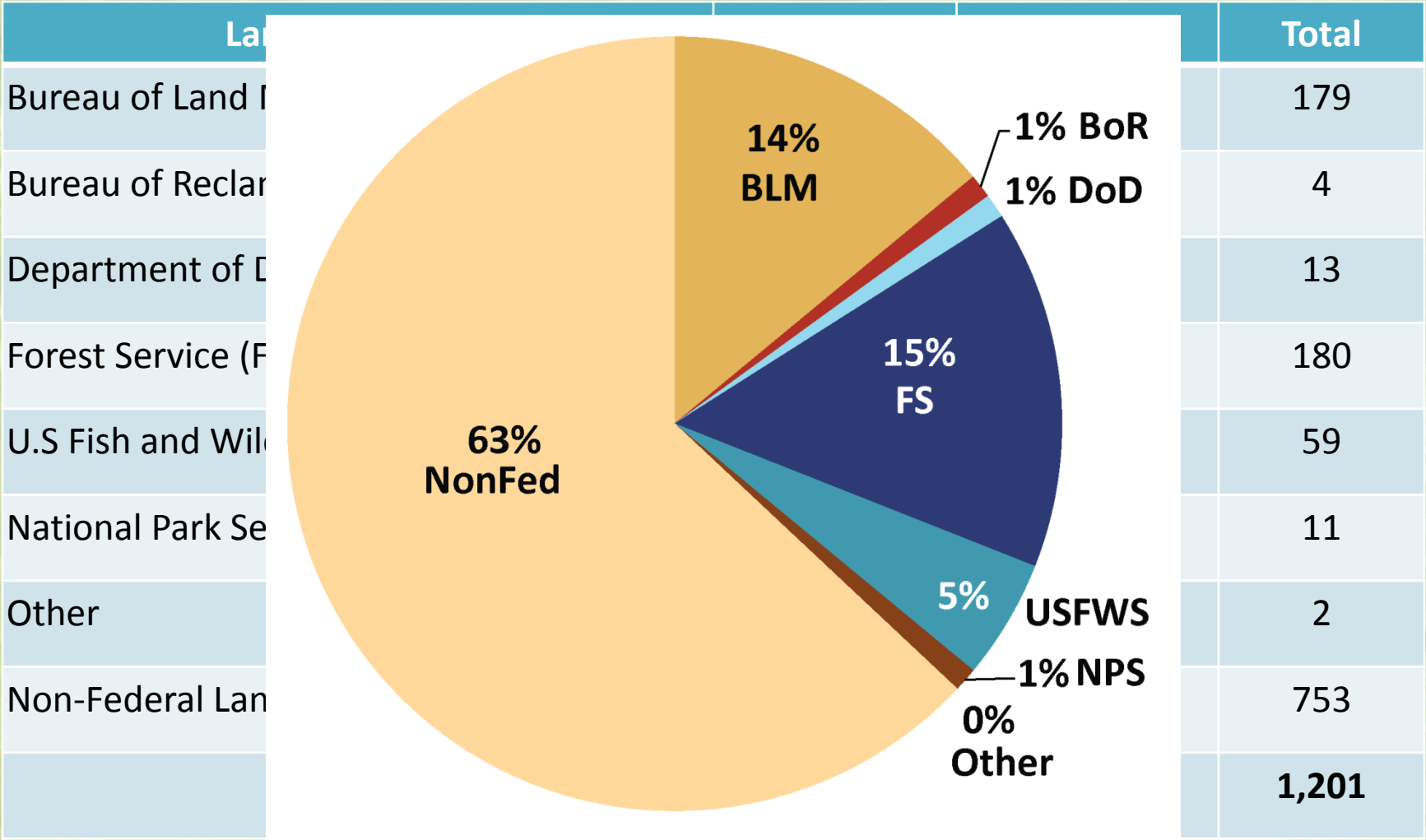
Discrete Sites by State

State/ Province	Number of Sites
Oregon, US	120
Washington, US	219
British Columbia, Canada	268
Montana, US	841
Wyoming, US	21
Total	1,469 (1,201 U.S locations)



Discrete Sites By Land Ownership

US Only



Where to go from here?

- ❖ Data issues
- ❖ Field inventories needed
 - Gaps
 - “Old” Sites- extant? Reproductive?
- ❖ Painted Turtle range expansion
- ❖ Manuscript submission



Acknowledgements

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