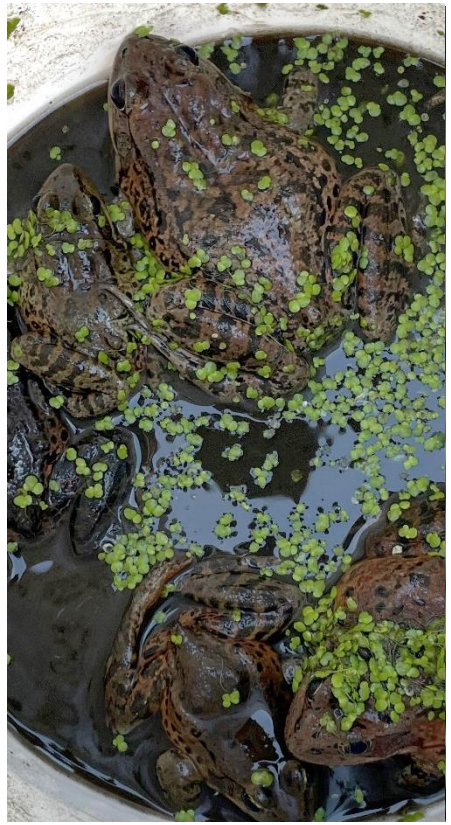
Alameda Creek Watershed Forum

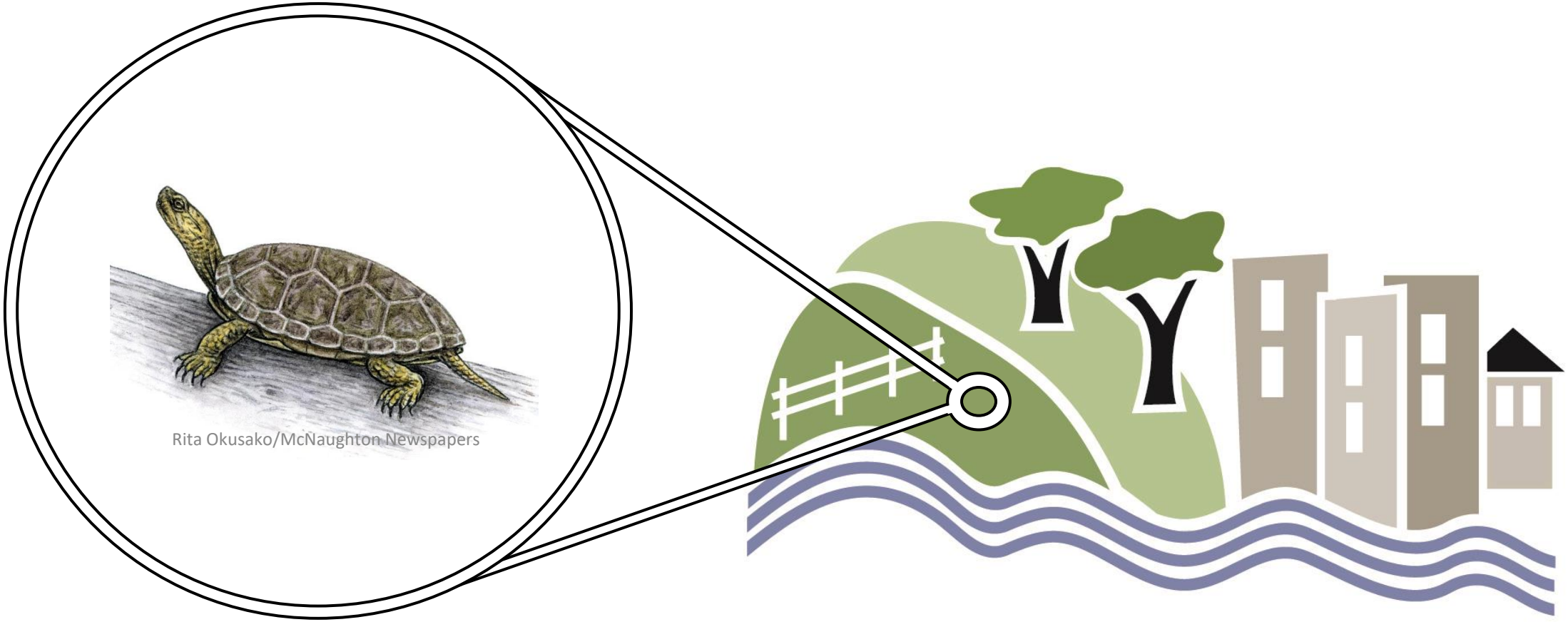
Alameda County Resource Conservation District (ACRCD)

Presented by:
Dr. Farley Connelly



Rangeland Pond Turtles

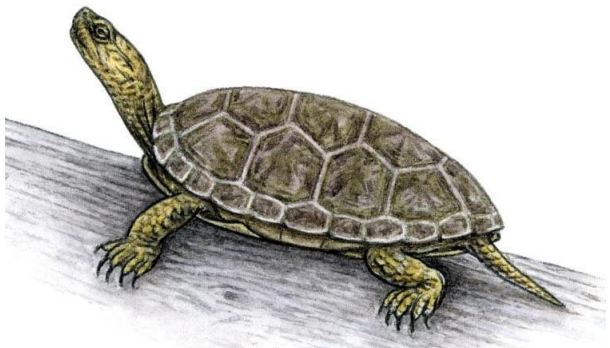
Investigating the Often-Ignored Upland Habitat Usage of the North/Southwestern Pond Turtle



Alameda County Resource Conservation District

in collaboration with

NRCS and Sonoma State University



Rita Okusako/McNaughton Newspapers

Background

Two Species in Alameda County:

1. **Northwestern:** *Actinemys marmorata*
   - SF Bay and North to British Columbia
2. **Southwestern:** *Actinemys pallida*
   - SF Bay and South to Baja California

Medium sized (5 – 9 inches)

Lifespan: 40 – 70 years

Sexually dimorphic

Feeding: entirely aquatic feeders (fish, frogs, insects, etc.)

Female Male

Background

Mating: Late April – May

Nesting: Early June – July

- Nests dug in the upland of waterways/bodies
- 1 – 13 eggs produced

Hatchlings: remain in nest until spring

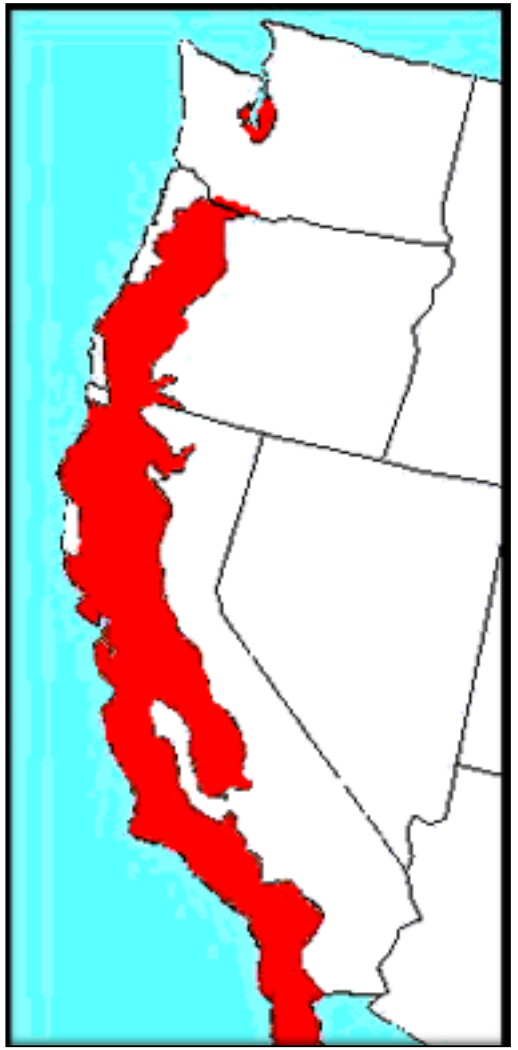
Overwinter: turtles will brumate (weather induced hibernation)


bioaccumulation.wordpress.com


Woodland Park Zoo

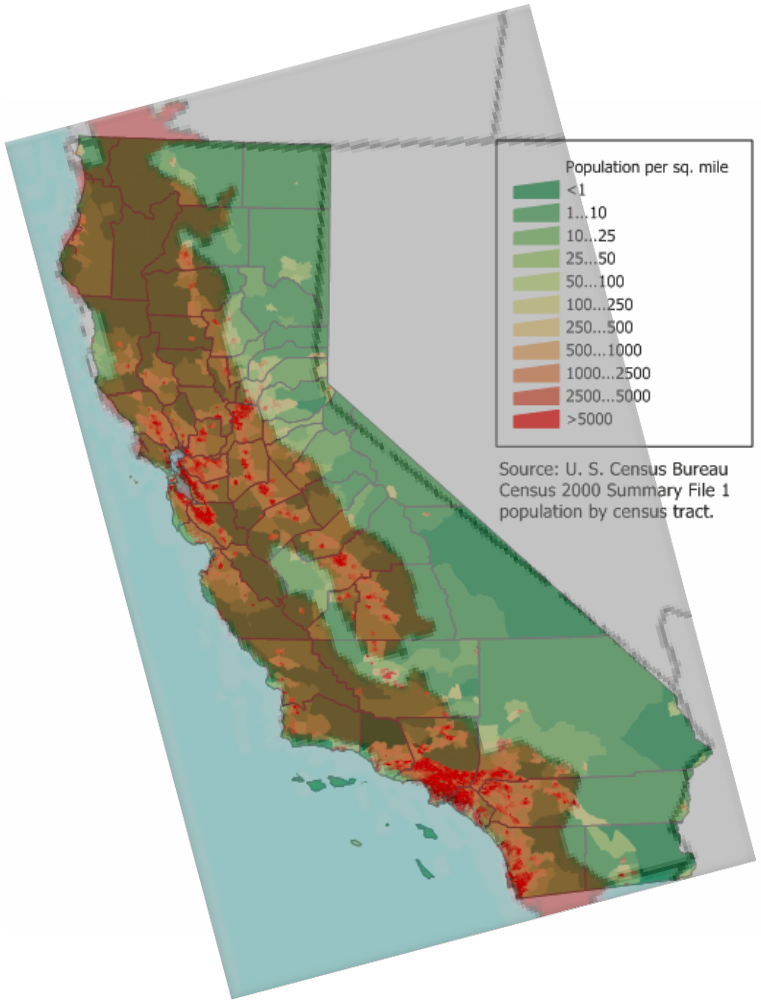
Why Pond Turtles?

- Geographic range
  - Historically present along Pacific slope of Western US (Washington to Baja CA)
- Once common, declining or extirpated in much of former range
  - Washington: Endangered (less than 250 in WA in 1980's)
  - Oregon: Critical Species
  - Calif: DFG-SSC (Species of Special Concern)
  - World Conservation Union Red List (IUCN: Vulnerable)
  - **Both spp. likely to be listed in California in 2023/2024**



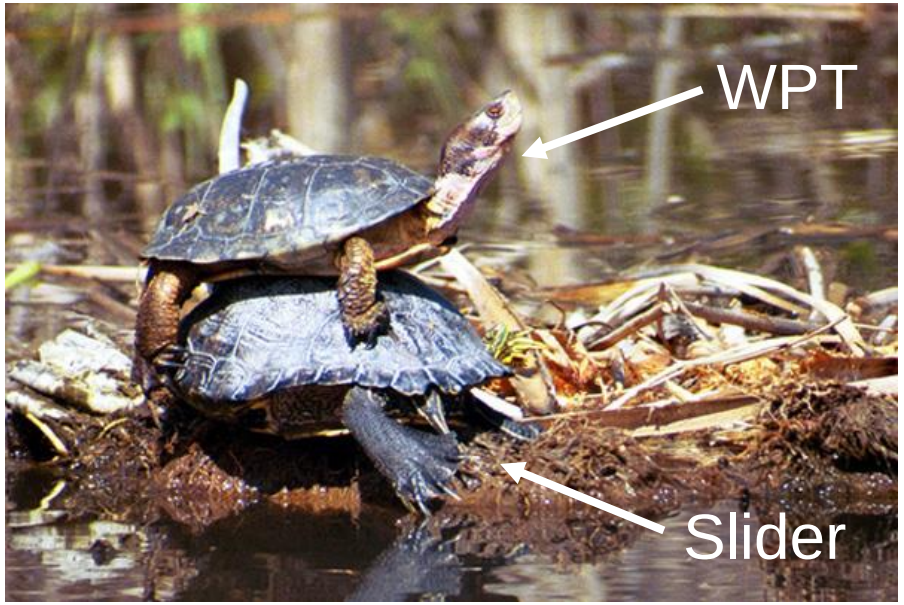
Why Pond Turtles?

- WPT habitat overlaps with areas of greatest human population densities, agricultural development
- Once present in across of coastal California, virtually extinct in much of So. Central Valley, SoCal, and the SF Bay Area.
- No reliable baseline population.
  - Major food source in the 1800's – early 1900's



Under Threat

- Humans
- Habitat decline and fragmentation
- Invasive species
  1. Bull frogs (*Rana catesbeiana)*
  2. Red-eared sliders *(Trachemys scripta elegans*)
- Shell disease



What we know and what we are doing to help protect Pond Turtle in Rangelands?

Protecting waterways

- Streams, creeks, rivers
- Ponds, lakes
- Grazing management

But what about the uplands?

- Turtles spend 2/3 of their lives out of the water
- Can nest in grasses, oak woodland, and shrubs
- What about in Alameda?

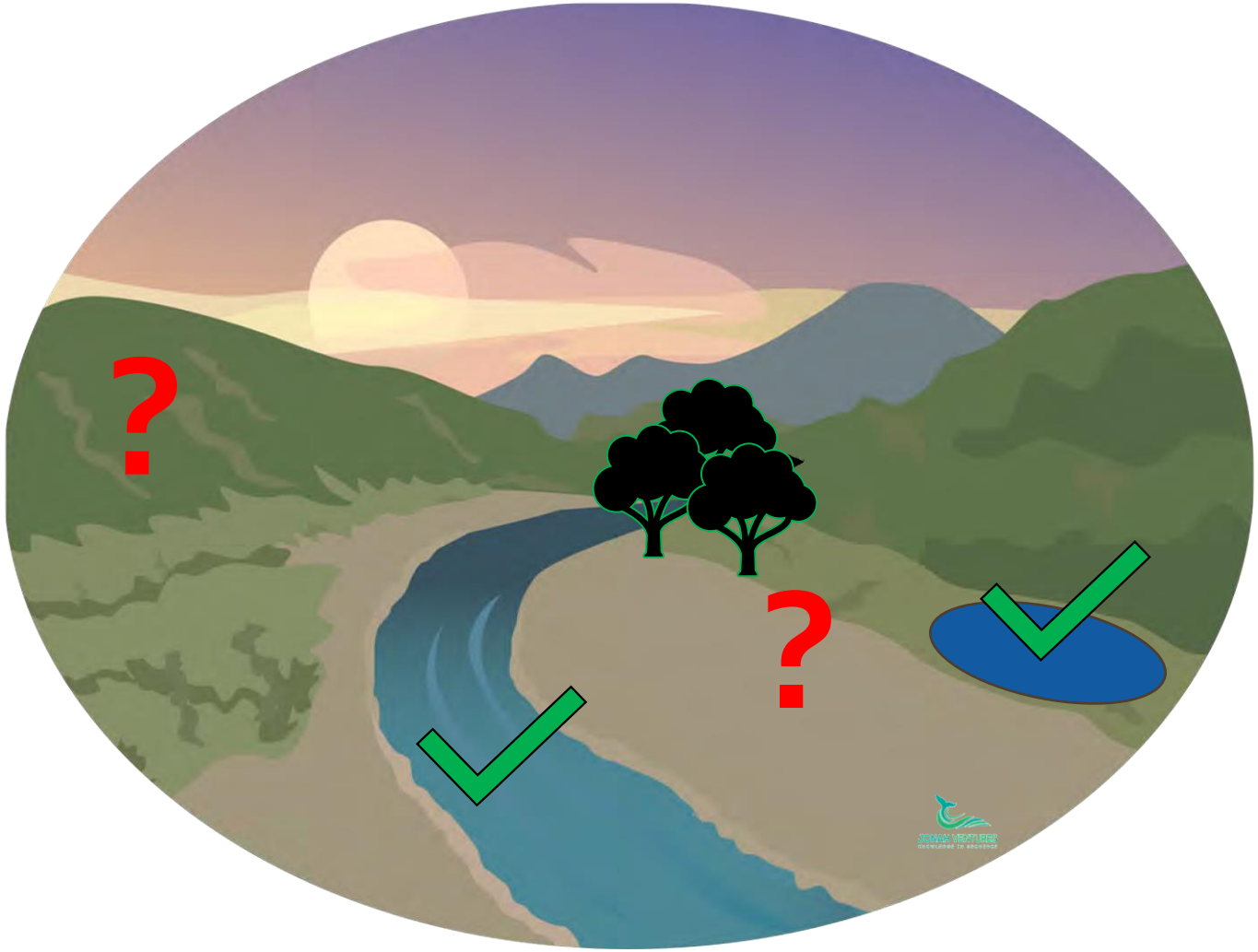
What are we doing to help protect them?

Protecting waterways

- Streams, creeks, rivers
- Ponds, lakes
- Grazing Management

But what about the uplands?

- Turtles spend 2/3 of their lives out of the water; disperse >1km
- Can nest in grasses, oak woodland, and shrubs
- What about in Alameda?



Our Pond Turtle Project

Where are WPT nesting in Alameda County Rangelands?

What are we doing and what can to be done to protect them?

Project Goals

1. Determine where WPT nest in the uplands
2. Identify habitat types utilized.
3. Use data to inform conservation strategies

Methodology

- Alameda County Rangelands
- 2 livestock ponds (Zone 7 property)
  - Known healthy WPT population
  - Connected via spring fed creek
- Grazed efficiently
- Various habitat types
- Multi-year study

Methodology

Radio Telemetry

- Live location
- Must be present
- Breeding season focused

GPS

- Short delay (30 sec – 1 minute)
- 24/7 detection (year-round)
- Duration of experiment

Methodology

- Data Collection and Analysis
  - Nesting preferences/location(Radio/GPS)
  - Basking preferences (Radio/GPS)
  - Movement between ponds (GPS)
  - Overwintering (GPS)
  - Morphology
- On-ground restoration
  - Pond restoration
  - Grazing management (only if needed)
  - Basking structures

Outcomes

1. **WPT Conservation**
   - Proactive vs reactive
2. **Active Restoration**
   - Pond restoration
   - Basking structures
3. **Inform Conservation Strategies**
   - Best practice guidelines
   - Benefits for rangeland managers and consultants
4. **Rangeland Education**
   - Importance of livestock ponds
   - Importance of rangelands

Collaborators and Future Work

1. **Collaboration:** key to getting conservation off the ground
2. **First study: can/will repeat**
   - Different habitats
   - Creek vs Ponds
3. **Additional research opportunities**
   - Male dispersals
   - Connectivity and genetic diversity
   - Shell disease
   - Red-eared slider control

Want to Collaborate?
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Thank You & Acknowledgements

Alyson Aquino
Jackie Charbonneau
Katie Bergman
Ian Howell
Allison Rodacker

Professor Nick Geist
Maddie Stein

Elke Rank