



Managing Rangelands to Benefit California Red-legged Frogs and California Tiger Salamanders

Pete Van Hoorn and Dr. Larry Ford

LD Ford Rangeland Conservation Science

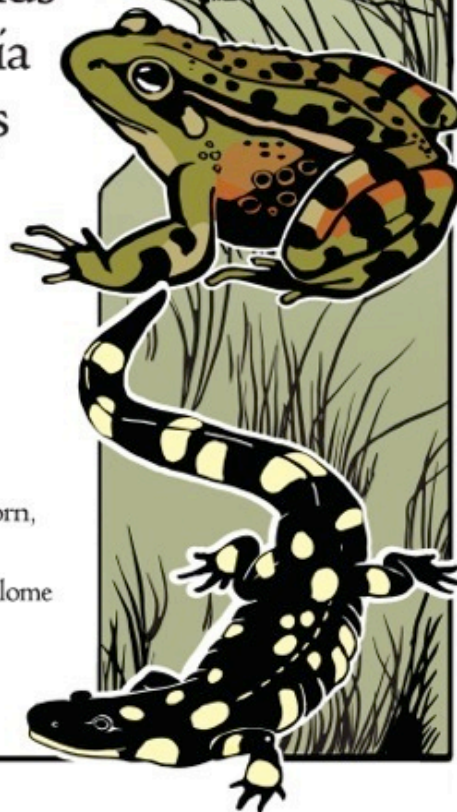


Managing Rangelands
to Benefit California
Red-Legged Frogs
&
California Tiger
Salamanders



Lawrence D. Ford, Pete A. Van Hoorn,
Devii R. Rao, Norman J. Scott,
Peter C. Trenham, and James W. Bartolome

Prepared for the Alameda County
Resource Conservation District



California red-legged frog (CRLF)



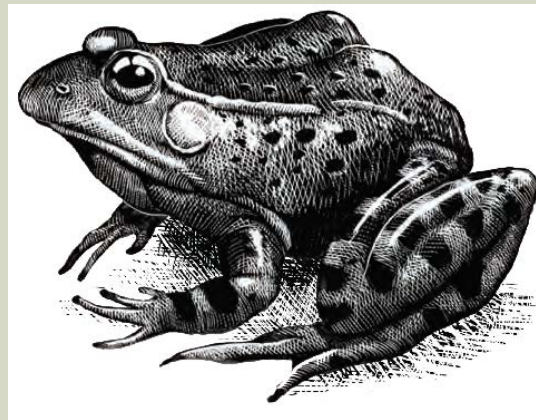
California tiger salamander (CTS)

Acknowledgements

- Co-authors James Bartolome, Norman Scott, Pete Trenham and Devii Rao
- Alameda County RCD, Livermore NRCS, Elkhorn Slough Coastal Training Program
- Reviewers – CRLF and CTS experts, resource agency and public lands staff, ranchers
- Funding from USFWS, NFWF, PG&E, Coastal Conservancy, TNC, EBRPD, SCVOSA

Overview

- Why the guidelines were needed
- Habitat goals
- Main recommendations
- Questions



Why guidelines are needed

- Alameda County stock pond restoration program



Why guidelines are needed

- Most remaining habitat is grazed



Why guidelines are needed

- Most remaining habitat is grazed
- **Grazing can be beneficial or necessary**
 - Stock ponds are key breeding habitat
 - CTS mainly live in the burrows of ground squirrels, which generally benefit from grazing
 - CRLF need mix of open and dense areas - often requires grazing

Why guidelines are needed

- Most remaining habitat is grazed
- Grazing can be beneficial or necessary
- Requires mix of expertise



Why guidelines are needed

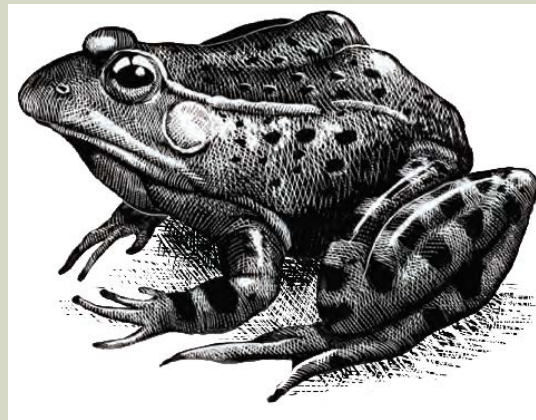
- Most remaining habitat is grazed
- Grazing can be beneficial or necessary
- **Requires mix of expertise**
 - Wildlife biology + range management

Why guidelines are needed

- Most remaining habitat is grazed
- Grazing can be beneficial or necessary
- **Requires mix of expertise**
 - Wildlife biology + range management
 - Ranchers + regulators

Overview

- Why the guidelines are needed
- **Habitat goals**
- Main recommendations
- Questions



Typical CRLF pond



CRLF breeding habitat

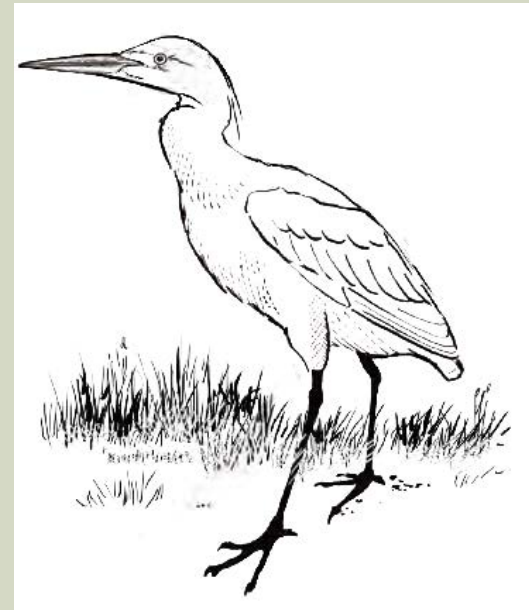
- Mix of open water and emergent vegetation – generally prefer approx 20-50% cover (cattails, bulrush, willows)
- Mix of deep and shallow waters, generally stays inundated through summer
- Few or no non-native predators
 - Bass and other gamefish generally incompatible
 - Bullfrogs harmful but can coexist if there is a good amount of emergent vegetation

Typical CTS pond



CTS breeding habitat

- Little or no emergent vegetation
- Inundation generally into summer (at least June)
- Few or no non-native predators
- Turbid water if pond is shallow



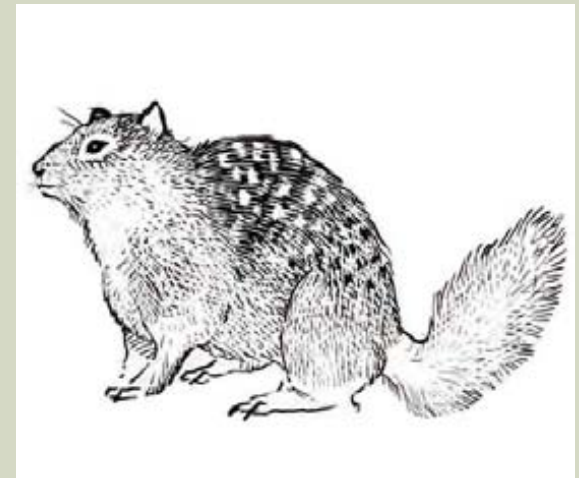
CRLF non-breeding habitat

- Summer refuges with cover and moisture
 - ponds, streams, springs
 - shrubs, logs, troughs, squirrel holes...



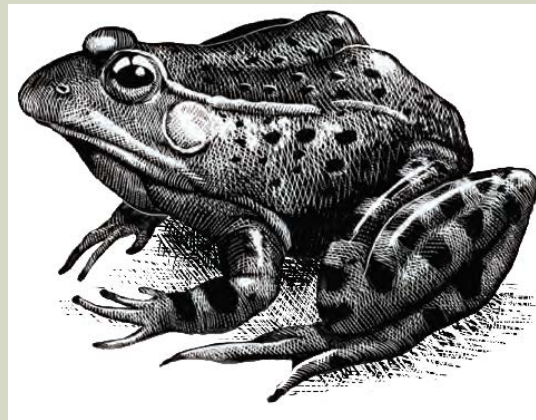
CTS non-breeding habitat

- **Rodent burrows (year-round)**
 - Ground squirrel, gopher, kangaroo rat burrows
 - Will co-occupy
 - Ground squirrels prefer grazed grasslands



Overview

- Why the guidelines are needed
- Habitat goals
- **Main recommendations**
- Questions



Managing ponds

- Biggest priority - keep stock ponds from eroding away or silting up









Managing ponds

- **Other priorities**
 - Give frogs some cover
 - Don't let cattails take over
 - Control gamefish and bullfrogs



Managing ponds

- **If there is too much emergent cover**
 - Add some summer grazing
 - Address during a repair project - remove cattails, desilt
 - More than about 35% for CTS or 50% for CRLF
- **If there is not enough emergent cover for CRLF**
 - Reduce grazing pressure esp. in dry season
 - Fence 1/3 or 1/2 the pond (mix of deep and shallow)
 - Less than 10-20% for CRLF pond (no min for CTS)

Managing a pond for CRLF and CTS



Managing a pond for CRLF and CTS

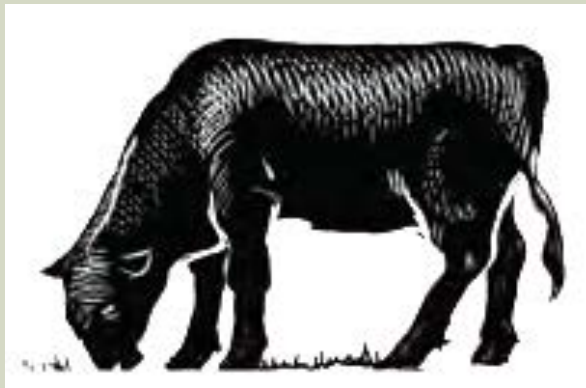
- **10 to 35% emergent vegetation prob ideal**
- **If there are several ponds nearby, can be best to manage some for CRLF and some for CTS**
 - Example: ranch has one good CTS pond and 6 good CRLF ponds

Managing creeks and springs for CRLF

- **If there's no tall cover, try:**
 - Off-stream water sources
 - Grazing the field when annual grasses are green
 - Riparian pastures
 - Fence out patches (a spring, part of a pond, willow plantings etc.)
 - Larger excluded areas usually become dominated by weeds
 - Highest priority is within a few hundred yards of pond or between two ponds

Managing grasslands for CRLF

- Can add summer refuges
 - Shrubs
 - Logs or brush piles
 - Wildlife guzzlers
- Don't let all grasslands become dense or convert to brush



Managing grasslands for CTS

- **Maintain some ground squirrels or gophers**
 - Don't let all grasslands become dense or convert to brush
 - Don't kill all the ground squirrels or gophers
 - Squirrel bait *generally* ok
 - Some control methods will kill any CTS or CRLF in the burrows - fumigation, ignition, flooding, etc.
 - No “safe time” or “safe burrows”



Heavy collateral damage



Main recommendations

- **Focus on goals, not one-size-fits-all prescriptions**
 - If frogs are abundant or habitat looks great, no change is needed
 - Often several viable approaches
 - Few solutions work everywhere

Main recommendations

- Focus on goals, not one-size-fits-all prescriptions
- **Look at big picture**
 - A change in how one spot is managed can affect other areas
 - Ranchers have to juggle these goals with the rest of the operation (livestock, soils, infrastructure, other wildlife, etc.) – and make a profit
 - Takes compromise and flexibility

Main recommendations

- Focus on goals, not one-size-fits-all prescriptions
- Look at big picture
- **A few high-priority goals for ponds and the rest of the ranch**

Using grazing as a conservation tool

- Be cautious when applying one site's findings to another's, especially if the species is a generalist or uses variety of habitats
 - CRLF vs CTS

Using grazing as a conservation tool

- Be cautious when applying one site's findings to another's
- **Interdisciplinary problems require interdisciplinary solutions**

Using grazing as a conservation tool

- Be cautious when applying one site's findings to another's
- Interdisciplinary approach
- **No substitutes for back-and-forth discussion and getting in the field**

Using grazing as a conservation tool

- Be cautious when applying one site's findings to another's
- Interdisciplinary approach
- Back-and-forth discussion and getting in the field
- **Useful to break issues down to habitat objectives and then management actions**
 - Helps avoid overuse of one-size-fits-all practices
 - Clarifies the types of expertise that are needed

Using grazing as a conservation tool

- Be cautious when applying one site's findings to another's
- Interdisciplinary approach
- Back-and-forth discussion and getting in the field
- Habitat objectives and management actions
- **Grazing often not treated objectively**
 - Pro-, anti-, “necessary evil” sentiments

Questions?

Pete Van Hoorn

petevanhoorn@gmail.com

(510) 710-4107

www.rangelandconservation.com/links.htm

