Declining Amphibian Populations Task Force

California/Nevada Working Group

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Declining Amphibian Task Force (DAPTF)California-Nevada Working Group Meeting 2006:

January 12-14, 2006
Humboldt State University
Arcata, CA

AGENDA

Chair: David Bradford, US Environmental Protection Agency

Local Committee: Hartwell Welsh (US Forest Service), Don Ashton (US Forest Service), Jamie Bettaso (US Fish & Wildlife Service), Kary Schlick (US Forest Service)

Meeting Supporters: Partners in Amphibian and Reptile Conservation (PARC), US Bureau of Land Management, US Fish and Wildlife Service, and US Forest Service

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Thursday Agenda
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Abstracts

Thursday, January 12, 2006

7:45-8:30 am Registraiton.

8:30-8:40 am **Introduction and Announcements.** David Bradford, Landscape Ecology Branch, US Environmental Protection Agency, Las Vegas, NV

PACIFIC NORTHWEST

USGS Western Ecological Research Center, Point Reyes National Seashore, Point Reyes, CA,
gary_fellers@usgs.gov

An Update on Frogs, Contaminants, and Disease Research

A fungal disease (chytridiomycosis), first described in 1999 and possibly introduced from Africa, has been closely associated with amphibian die-offs in the Sierra Nevada and elsewhere, but it is not clear whether the chytrid fungus is a primary cause of the declines or whether it gets a foothold when amphibian populations are under stress. Chytrid fungus in Yosemite National Park was reported in *Rana muscosa* in 2001 (Fellers et al.). In 2005, I began a detailed study of two watersheds in Yosemite and one at Point Reyes National Seashore to determine the distribution of chytrid fungus in native amphibian tadpoles. In a series of related studies, data from contaminants research suggest that pesticides are playing a significant role in amphibian declines in the Sierra Nevada. Studies comparing contaminants levels in frog and tadpole tissue with concentrations in sediment, air, snow, and water in coastal and mountain regions of California strongly support the view that contaminants are playing a significant role in amphibian declines.

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FISHER, ROBERT1*, ADAM BACKLIN1, CYNTHIA HITCHCOCK1, STACIE HATHAWAY1, and RUSSELL SMITH2

1USGS Western Ecological Research Center, San Diego Field Station, rfisher@usgs.gov; 2Los Angeles Zoo, Los Angeles, CA.

Update on the *Rana draytonii* and *Rana muscosa* Situations in Southern California

Both remaining native ranid species in southern California have suffered precipitous declines over the past 35 years. The remaining populations are unstable and continue to be impacted by disease, fires, floods, debris flows, and invasive species. We will review the status of these species based on our field data from 2005 and make some recommendations about future prospects of these populations. Adaptive management is immediately needed at most populations if they are to stabilize and increase. Additionally, extirpated populations need to be re-established if these species are

going to persist in the region.

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GARWOOD, JUSTIN M.*, KAREN L. POPE, HARTWELL H. WELSH, Jr.
USFS-PSW, Redwood Sciences Laboratory, Arcata, CA, jg18@humboldt.edu

Indirect Effects of Introduced Trout on Native Amphibians in Northern California by Expansion of an Opportunistic Predator: Does the Hyperpredation Hypothesis Apply?

Through the introduction of exotic trout, thousands of undisturbed high-elevation aquatic habitats of the west have been ecologically transformed. Although direct effects of these fish introductions have been well documented, less research has addressed possible community-level effects within these ecosystems. Exotic species, such as nonnative trout, can provide a supplemental food source to native predators, which can allow the predators to increase in abundance, possibly magnifying their effect on native prey species. We studied the diet and distribution of two native garter snakes (*Thamnophis atratus*) and (*T. sirtalis*) relative to their natural amphibian prey and nonnative trout distributions in a high-elevation basin within the Trinity Alps Wilderness, CA from 2003-2005. Aquatic garter snakes (n=38) foraged on nonnative fish 56% of the time and amphibians 44%, whereas common garter snakes (n=38) diets were comprised entirely of amphibians. Aquatic garter snakes (n=113) were narrowly distributed, with 88% captured within 50 m of fish presence and maintained high abundances at sites containing fish. Common garter snakes had a much wider distribution and lower site abundances than aquatic garter snakes. Only 16% of the common garter snake (n=156) captures were within 50 m of nonnative fish. These results suggest that aquatic garter snakes have adapted to a subsidized nonnative food source, thereby probably increasing their densities above a naturally occurring level. Aquatic garter snakes affinity toward fish prey also suggests they could have expanded their range by following fish distributions after the onset of fish stocking occurred. Since amphibians are an important component of aquatic garter snakes diet, they could be overexploiting amphibians in areas where high densities of fish allow them to maintain unnaturally large population sizes.

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