



**Survey for California Red-legged Frog (*Rana aurora draytonii*)
at the
Lava Cap Mine Project
Bechtel Project 22447-261-020**

Report prepared
by
Roy A. Woodward, Ph.D
August 1995

Introduction

The Lava Cap Mine site is within the historic range of the California red-legged frog (*Rana aurora draytonii*) (referred to herein as 'red-legged frog', scientific names follow Robert C. Stebbins, *Western Reptiles and Amphibians*, 1985), a species proposed for listing on the federal endangered species list. In order to ascertain the presence/absence of the species at the Lava Cap Mine site, a survey was conducted on July 27 and 28, 1995 by Bechtel biologist Roy Woodward and Bechtel site leader Tom Jenolio.

Methods

Prior to beginning the field survey a literature search was conducted at the University of California, Santa Cruz to obtain pertinent information about red-legged frog behavior and taxonomy. Also, interviews were held with recognized frog experts Dr. Robert Fisher, University of California San Diego, and Dr. Mark Jennings, U.S. Biological Survey in Davis, California. It was determined from the literature and interviews that the vicinity of the Lava Cap Mine site was at one time inhabited by red-legged frogs, but there have been no reliable reports of the species in this area of the Sierra Nevada foothills for over thirty years. Red-legged frogs have become rare throughout California as a result of habitat degradation, over-harvesting by humans for frog legs, and competition from exotic amphibians such as bullfrogs. Dr. Jennings and Dr. Fisher provided useful suggestions concerning field survey techniques; however, both were very skeptical that red-legged frogs would be found at the Lava Cap Mine site.

A survey protocol for the red-legged frog was obtained from the U.S. Fish and Wildlife Service, Sacramento, California (see attached). This protocol indicates that July is an acceptable time to conduct surveys, and since spring 1995 was an extraordinarily wet and cool period, this July in particular was a reasonable time to conduct a red-legged frog survey. The protocol was modified in that only one nighttime survey was conducted and surveys were only conducted in July, however, the intensity of the survey in the small wetland greatly increased the odds of finding any extant red-legged frogs. Note: no federal permit is required to conduct a red-legged frog survey on private land because the species is not yet listed as endangered.

The field survey was conducted in the following manner:

- The site was inspected on the afternoon of July 27, 1995 by slowly walking through the on-site wetland areas and scanning likely looking spots with binoculars for any type of frogs. A few tadpoles were captured from pools and preserved in alcohol in test tubes. A small frog was captured and also placed with alcohol in a test tube. All test tubes were placed in a cool ice chest.
- After dark on the night of July 27, 1995 a survey of the wetland was conducted with binoculars and a spot light. A large net was used to capture any frogs within range.
- On the morning of July 28, 1995 a walking survey was again conducted in the wetlands. The surveyors also sat quietly near the most likely looking ponds for long periods and observed all aquatic activity with binoculars. Additional tadpoles were collected and preserved with alcohol in test tubes.

Preserved frog specimens were sent to Dr. Robert Fisher for taxonomic determination.

In addition to the red-legged frog survey, the general character of the wetlands was evaluated and information regarding vegetation, animal species, and wetland condition was documented.

The field notes containing the vegetation and general site description, site sketch map, and red-legged frog survey information are attached.

Results

The vegetation in the vicinity of the Lava Cap Mine site is mixed-evergreen type including ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), black oak (*Quercus kelloggii*), canyon live oak (*Quercus chrysolepis*), and madrone (*Arbutus menziesii*). The wetlands at the Lava Cap Mine site originate from a spring which emerges from the base of an old mine spoil pile. The water flows for a short distance and forms a pool approximately 30 feet long, 10 across, and 4 feet deep in the center (referred to as 'upper wetland' in this report). At this point, the water disappears underground and re-emerges about 100 yards downslope and flows along the surface for about 200 yards where it is captured behind a small earthen dam and directed into the nearby canyon through an underground outlet (the red-legged frog study area ends at this outlet). There are two significant pools along the lower wetland, both approximately 30 feet long, 10 feet wide, and 2 feet deep. The water is cool and very clear throughout the wetlands.

The upper wetland is devoid of emergent vegetation in the pool and there was only small clumps of filamentous algae. The edges of the wetland have a very sparse cover of rushes (*Juncus* sp.), grasses (*Bromus* sp., etc.), and wetland forbs (*Veronica* sp., *Equisetum* sp., *Centaureum davayi*, *Melilotus albus*, *Cicuta douglasii*, *Veratrum* sp.), though there is a small, dense stand of cattail (*Typha* sp.) along the upper-bank of the pool.

The lower wetland is heavily vegetated with stretches dominated by willows (*Salix* sp.), occasional cottonwood (*Populus fremontii*), and dogwood (*Cornus nuttallii*), and other parts dominated by cattails. There is a dense understory vegetation of the same herbaceous species as at the upper wetland.

Several frogs were seen or heard during the survey. The small frog collected on the afternoon of July 27, 1995 was determined to be a Pacific tree frog (*Hyla cadaverina*). All of the tadpoles collected on both days throughout the wetlands and all of the frog-calls were also identified as Pacific tree frogs. Other adult Pacific tree frogs were also observed throughout the wetlands.

During the nighttime survey three bullfrogs (*Rana catesbeiana*) were found. One was captured and examined close-up, then released unharmed.

Two Northern leopard frogs (*Rana pipiens*), a common species in California, were observed in the largest pool in the lower wetland, though neither was captured or photographed. The markings of the leopard frog are very distinctive and definitively characterize the species.

No California red-legged frogs were discovered at the Lava Cap Mine site.

Conclusion

A thorough survey of the Lava Cap Mine site was conducted to establish the presence/absence of California red-legged frogs. Three species of frogs were discovered in the wetland area, Pacific tree frog, bullfrog, and Northern leopard frog. No red-legged frogs were discovered in the survey area.

Draft
January 13, 1995
Survey Protocol for the California Red-Legged Frog
Rana aurora draytonii

This survey protocol is designed to detect the presence of California red-legged frogs. If at any time during surveying California red-legged frogs are detected, then presence has been established and the surveying can cease. Potential habitat that has not been surveyed according to this, or another Service-accepted protocol, is considered occupied by California red-legged frogs. This protocol consists of two sampling periods, a Spring period where breeding adults and egg-masses are surveyed for and a Summer sampling period where adult and larval frogs are surveyed for. Completion of both Spring and Summer sampling is required to satisfy this protocol.

Spring Sampling Period

Conduct a minimum of three nighttime surveys, no less than 10 days apart and no greater than six weeks apart from February 15 through April 30. Nighttime surveys must be conducted during the first-half of the night. A powerful light must be used to detect eye-shine. The surveyor must be close enough to detected frogs to observe the dorso-lateral folds which distinguish red-legged frogs from bullfrogs. There must be a minimum of one survey during each survey month, unless the site is surveyed in the first and third week of March (in lieu of the February visit).

Conduct a minimum of three daytime surveys, no less than 10 days apart and no greater than six weeks apart from February 15 through April 30. The surveyor must do a reconnaissance with binoculars of the creek or pond being surveyed, prior to approaching the habitat. The reconnaissance must be for a minimum of five minutes and at least 50% of the cover must be observed during the reconnaissance. Cover constitutes emergent vegetation, floating-submerged vegetation, undercut banks, and shaded areas. There must be a minimum of one survey during each survey month, unless the site is surveyed in the first and third week of March (in lieu of the February visit).

Conduct a minimum of two egg-mass surveys during March. Surveys for egg masses must be conducted in the first and third week of March. The entire perimeter of the habitat must be surveyed.

The nighttime surveys, daytime surveys, and egg-mass surveys may be conducted during the same 24 hour period as long as the specified intervals are followed.

Summer Sampling Period

Conduct a minimum of two larval-surveys, one in June and one in July. Surveys will be no closer together than 10 days. The entire perimeter of the habitat must be surveyed.

Conduct a minimum of two nighttime surveys, one in June and one in July, according to the spring protocol. Conduct a minimum of two day time surveys, one in June and one in July, according to the spring protocol.

The nighttime surveys, daytime surveys, and larval surveys may be conducted during the same 24 hour period as long as the specified intervals are followed.

7/27/92 LAVA CAMP MINE

MIDDLE AREA

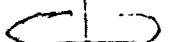
by JM JONALIO

FIELD VISUAL FROG SURVEY

UPPER MIDDLE AREA

MIDDLE AREA

UPPER MIDDLE AREA



ROCK FACE



150 YARDS

3

ATTN
10' ID
PIT

MIDDLE AREA
MIDDLE AREA
MIDDLE AREA
MIDDLE AREA

AREA OF
POOL



WATER CREEK
MIDDLE AREA
MIDDLE AREA
MIDDLE AREA

7/27/92 LAVA CAMP MINE

- COLLECTED 180 TRAPS HERE

2 BIRDS TAKEN AT POINT

(1) ON TRIP IN 6:30 PM

- SAW 2 FROGS AT POINT 2

? LOOKED LIKE 1 FROG FOLLOWING GLACIER
HOLD STILL AFTER FEEDING - 200 YARDS AWAY FROM GLACIER

- TOM SAW THE SPAN A TURTLE

AT POINT 2) LAST TIME HERE: MAY 94

- STONE (LAWSON) TOLD US THIS DEPARTMENT BROUGHT THEM A TURTLE
SPECIMEN FOR THE HISTORY MUSEUM - NO HISTORY MUSEUM ANY MORE

- NINE SPOTS IN MIDDLE SURVEY

- SAW 2 BULLFROGS AT POINT 2

MIDDLE 1 & 100 L LINES

#13 AREA W/ FROG IN MIDDLE

#14-16 VIEWS OF BULL FROG

- COLLECTED 1 FROG AT POINT 2

COLLECTED BY A TRAP IN MIDDLE

(MIDDLE POINT 1) BUT ONLY SAW ONE

ADDITIONAL BULLFROG AT POINT 2)

ON PHOTO.

- AT UPPER MIDDLE AREA ONLY FROG

CHILL FROM BUSH YEA - SOUNDED LIKE

A TREE FROM

7/28/95 LAKE CHARLES

- COLLECTED INSECT SPEC. (10/12)
- PLANTS FOR WIRE MESHED IN
4 GIVE SAMPLES
- DIB EVIDENCE FROM 2 VLA RESEARCH
VLA 1111 1111 1111 1111
- PHOTO 17 IS THIS SITE.

CHANGE TO 10' HIGH WIRE MESH
1A IN CENTER OF P. 1 B)

- 10' HIGH WIRE MESH
POINT (1) 11' FROM
PHOTO 18 SHOWS POINT 1 / 10M.

- 5' HIGH WIRE MESH
2' HIGH WIRE MESH
PLANT SIZE, ETC. BUT NO CAPTURES
PHOTO 19 IS CENTER OF POINT
CATCHES WITH WIRE MESH

7/28/95 LAKE CHARLES

- YOU FOUND STREAM IS WILLOW &
PINES (ALL POINT 1 TO POINT 3)
- ABOVE POINT 3 AND UP TO LAKE POINT 2:
17 FLOWS STREAM IN LOT OF TYPHA
(~ 3' 4' FEET TALL), PINEAPPLES, FLUOR
AND PINEAPPLES SOME TO 40' (TALL), LOTS, ^{INCHES}
- WATER IS CLEAR & FLOWING. 18" DEEP
IN PLACES (1, 2)
- MIXED VEGETATION IN VICINITY OF LAKE
ON BANKS: PINE, BIRCH, BLACK OAK,
WILLOW, ETC. (SEE LIST). PINEAPPLES,
PINEAPPLES, PINEAPPLES, ^{ROCK & BLOW}
PINEAPPLES, PINEAPPLES, PINEAPPLES,
AND WATER WETLANDS
- EGGS, IN, SOUTHERN WYVERN, HILLOTUS FISH,
WATER TURTLE, PINEAPPLES, GRASS, PINE,

A261 0010
~~A261 0004~~

CONTACT REPORT

AGENCY/AFFILIATION: Bechtel Environmental Inc. (BEI)		
DEPARTMENT:		
ADDRESS: 45 Fremont St.	CITY: San Francisco	
COUNTY: San Francisco	STATE: CA	ZIP: 94119
CONTACT(S) Tom Genolio	TITLE Frog Survey Task Leader	PHONE (415) 768-1598
BEI PERSON MAKING CONTACT: Paul Tanaka <i>PT</i>		DATE: 11/8/95
SUBJECT: Status of the Lava Cap Mine Site		
SITE NAME: Lava Cap Mine		EPA ID: CAD 983618893

DISCUSSION:

Mr. Genolio verified site conditions on July 27 and 28, 1995 as noted during performance of a survey to determine the presence of the California red-legged frog in the upper and lower wetlands portion of the Lava Cap Mine site. Although the survey was performed in the upper wetlands portion of the site, Mr. Genolio did note that the former mill, former cyanide treatment facility, several other former mine buildings, and two residential buildings remained at the site. He noted that the mine shaft was fenced and that the site layout and land use in the area immediately adjacent to the site had not changed since November 1994, the time of his last site visit. He did indicate that the residence located 200 feet from the waste rock pile ~~was still~~ occupied at the time of the frog survey. *appeared to be*

Mr. Genolio informed me that the Lava Cap Gold Mining Corporation owned the site at the time of the frog survey and that Mr. Elder, whose residence is located approximately 200 yards from the waste rock and tailings piles, was caring for plants in what was referred to as a nursery. Mr. Genolio also stated that as of November 1994, the California Department of Toxic Substances Control (DTSC) (formerly known as the California Department of Health Services, Toxic Substances Control Division) was not currently involved with the site, but would reopen its case on the site if a change of land use plan is ever proposed. He stated that to his knowledge, state involvement with the site remains as it did in November 1994.

Thomas Genolio

 CONTACT CONCURRENCE

11/20/95

 DATE

Information extracted from:

U.S. Geological Survey, Chicago Park Quadrangle, California, 7.5-Minute Series (topographic).
1949, Photorevised 1979.

POOR LEGIBILITY

ONE OR MORE PAGES IN THIS DOCUMENT ARE DIFFICULT TO READ
DUE TO THE QUALITY OF THE ORIGINAL