



Amphibian and Reptile Annual Report

2018



June 1, 2018

Cover photo: Adult foothill yellow-legged frog. Photo by HRC Forest Sciences staff.

Humboldt Redwood Company (HRC) Project Description

Title: Amphibian and Reptile Monitoring

Purpose: Habitat conservation plan monitoring

Date Initiated: March 1999

Projected End Date: ongoing

Manager: Sal Chinnici, Manager, Forest Sciences

Executive Summary:

The HRC HCP includes four covered amphibians (southern torrent salamander, tailed frog, yellow-legged frog, and red-legged frog) and one covered reptile (western pond turtle). The HCP's strategy for conserving and monitoring the covered amphibian and reptile species is a landscape approach to protecting habitat, assessment of habitat conditions through watershed analysis, and species surveys and population monitoring.

With this report covering the 2017-2018 monitoring period we have continued to focus on upcoming watershed analysis revisitation, as originally discussed in the 2013-2014 summary report. However, there was an emphasis on foothill yellow-legged frog work that coincided with their State Candidacy status. No changes in the monitoring strategy are recommended at this time.

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INTRODUCTION

The purpose of this annual report is to provide the results of surveys and monitoring of the covered amphibian and reptile species of the Humboldt Redwood Company (HRC) Habitat Conservation Plan (HCP). This report covers the period 1 June 2017 to 1 June 2018.

Surveys and habitat assessments for the covered species have been ongoing through implementation of HCP monitoring strategies. Sections of the HCP addressing amphibians and reptiles include: 6.3.2.1, 6.3.5.2.4, and 6.10. These HCP sections discuss the process by which both watershed analysis and effectiveness monitoring address the covered species' habitat needs.

Records of species occurrence have been gathered from incidental observations recorded during Timber Harvesting Plan (THP) surveys, historical records, and wildlife monitoring surveys, including protocol surveys of Class I and Class II waters (streams, watercourses, seeps, springs, lakes, ponds, and wetlands). The methods and protocols used to survey for the five covered species were developed cooperatively between the Wildlife Agencies and HRC, and are described briefly in the following sections.

With this report covering the 2017-2018 monitoring period we are in the fifth year of effort on upcoming watershed analysis revisitation units. However, during this period the emphasis of our surveys and habitat investigations was on the foothill yellow-legged frog due to their status as a State Candidate for listing under CESA. As a result, there few or no surveys done for other covered species.

The Elk River/Salmon Creek WAU revisitation has been completed and submitted to the Wildlife Agencies. The Freshwater WAU revisit report is to be submitted in 2018, which will be followed by the Van Duzen River WAU in 2018-2019.

COVERED SPECIES

SOUTHERN TORRENT SALAMANDER AND TAILED FROG

Introduction

The southern torrent salamander (*Rhyacotriton variegatus*) and tailed frog (*Ascaphus truei*) are treated jointly in this report and in survey protocols due to their preference for headwater habitats and high gradient streams. Briefly, the tailed frog and southern torrent salamander protocol was intended to fulfill the needs of distributional surveys for these two species. The goal of this protocol is to determine the approximate distribution in WAUs using an area-constrained search of Class II watercourses, seeps, and springs.

Following the initial baseline distributional surveys, it was recognized that, in some cases, the vigorous sampling techniques originally used for the baseline surveys could potentially negatively impact sub-populations. As a result we have moved to an occupancy level survey, using similar techniques but terminating the survey once the focus species has been found, or continuing to survey the entire reach if no specimens are located. This technique will allow us to monitor the persistence of sub-populations within WAUs without risking potential habitat damage.



Figure 1. Southern Torrent Salamander



Figure 2. Tailed Frog

Methods

The survey protocol for tailed frogs and southern torrent salamanders uses an area-constrained search method of Class II waters. The protocol has been appended to previous reports, and is available upon request. The suggested sampling period for torrent salamanders is after the first winter rains (e.g., October-November) through May, depending on weather and watercourse conditions. For tailed frogs the

suggested sampling period is March through June, again depending on weather and watercourse conditions. Based on the results of previous surveys, it appears that the survey season for both species may be extended when favorable water conditions exist, although drought conditions that prevailed previous to the 2015-2016 winter rainfall have in some cases required that surveys be conducted earlier in the season. Above average rainfall during the 2016-2017 winter resulted in high flow conditions that delayed surveys.

The protocol surveys have been used to build a distributional map for the two species. In order to monitor the persistence of subpopulations of these species and continue to inform the watershed analysis revisitation process, occupancy surveys of previously located sites have been conducted using an abbreviated protocol in which the survey is considered complete once at least one individual of the target species is found.

Results and Discussion: Southern Torrent Salamander

During the reporting period 2017-2018 no surveys were conducted for this species and there are no results to report.

Results and Discussion: Tailed Frog

During the reporting period 2017-2018 no surveys were conducted for this species and there are no results to report.

FOOTHILL YELLOW-LEGGED FROG

Introduction

During 2016, the Center for Biological Diversity petitioned the California Fish and Game Commission (Commission) to list the foothill yellow-legged frog (FYLF) as a threatened species pursuant to the California Endangered Species Act (CESA). Following CDFW's review of the petition and determination that there was sufficient scientific information to indicate that listing may be warranted, the CDFW recommended that the Commission accept the petition for review under CESA. The Commission voted to accept the petition for evaluation on June 21, 2017, and designated the FYLF as a candidate species pursuant to Fish and Game Code 2074.2. During the candidacy period any take of FYLF is prohibited except as authorized under CESA. Fish and Game Code Section 86 indicates that "take" means to hunt, pursue, catch, capture, or kill, or to attempt to hunt, pursue, catch, capture, or kill.

As a result of the candidacy status of the FYLF, HRC examined potential FYLF use of roads and Class III watercourses. Results are summarized below.



Figure 3. Foothill Yellow-legged Frog.

Methods

Typical survey and monitoring techniques for this species are also area-constrained searches, concentrating on surveying river and stream reaches for eggs, tadpoles, and adults. As with the surveys for the headwaters species, an occupancy level survey has been implemented for foothill yellow-legged frogs, using similar techniques but terminating the survey once the target species has been found. The survey continues until specimens are found or the entire reach is surveyed.

Survey sites are visually searched for the presence or absence of foothill yellow-legged frogs, using a 400-meter reach as the survey site. Surveys are concentrated during a period when the larger tadpoles, recent metamorphs, and adults are relatively easy to locate by searching the slow water edges of the wetted channel, typically June through September. Occupancy is established when an adult, juvenile, tadpole, or eggs are found at the survey site.

On the road surveys summarized below, qualified individuals conducted a visual search for FYLF while walking along the sides of the road and scanning the road surface, as well as inboard ditches and culvert inlets and outlets. The Class III stream work is summarized from stream classification surveys for THPs.

Results and Discussion

Use of roads by vehicles and heavy equipment during the wet season when FYLF may be traversing the landscape away from watercourses (Hayes et al. 2016) has the potential for take of FYLF, although it is highly unlikely. HRC currently counts approximately 2,200 miles of all road types (e.g. permanent,

seasonal, closed, abandoned, and decommissioned) in its inventory. Permanent roads (i.e. rocked roads with availability for year around use) were inspected during the 2018 wet weather period by CDFW and HRC (Simpson pers. comm. 2018, HRC 2018). Approximately 8.2 miles (13,179 m) of road were inspected and 3 FYLF were found, either on the road or in a ponded inboard ditch, resulting in a density estimate of 0.0002 FYLF/meter. This would seem to indicate that take of FYLF due to road use is highly unlikely.

Typically, Class III watercourses are not considered potential habitat for FYLF. If any life stage of FYLF is found in a watercourse, the watercourse would be Class II water by definition. However, during the FYLF candidacy period it has been thought that FYLF may seek refuge in Class III watercourses during high flows, for example. We have not documented FYLF in Class III watercourses to date. During the wet season of 2017 -2018 (i.e. fall, winter, and spring) HRC staff inspected approximately 7.8 miles of Class III watercourses, of which approximately 64% had flowing water, with no FYLF detections. Similarly, Green Diamond Resource Company (GDRCo 2018) reported surveys of approximately 20 miles of Class III watercourses from 2013 to 2018, with 69% of the surveys during the wet season, with no FYLF detections. Therefore, we continue to consider that it is highly unlikely that FYLF utilize Class III watercourses.

NORTHERN RED-LEGGED FROG

Introduction

Current survey efforts for the northern red-legged frog (*Rana aurora aurora*) have been focused on attempting to determine if known breeding sites within the WAUs continue to be occupied. There are currently 39 breeding sites distributed throughout HRC lands.



Figure 4. Northern Red-legged Frog.

Methods

For recent surveys we have continued to use the abbreviated survey method developed for the occupancy-level surveys. Known breeding sites are inspected for evidence of adults, juveniles, and egg masses.

Results and Discussion

During the reporting period 2017-2018 no surveys were conducted for this species and there are no results to report.

WESTERN POND TURTLE

Introduction

The only covered reptile under the HRC HCP is the western pond turtle (*Emys marmorata*). The distribution of this species on HRC lands was poorly understood in comparison to the other covered species, but locations of pond turtles have been accumulating since the implementation of HCP monitoring programs, and the species distribution on the covered lands can now be called widespread in suitable habitats.



Figure 5. Western Pond Turtle.

Methods

The goal of the baseline surveys for pond turtles was to determine the distribution of this species on HRC lands, using techniques of observing potential habitat (e.g., Holland 1994). The sampling season for pond turtles is the summer period, or specifically June through September. We have noted that turtles can be observed both earlier and later in the season here on the north coast of California when flow conditions permit.

Methods include using visual searches (i.e., walking surveys), snorkel-surveys, and floating surveys of suitable watercourses looking for basking adults (Figure 6). Turtles can often be seen using the same basking structures over multiple years. When conducting floating surveys, surveyors stop floating above areas of potential habitat to walk the area and scan for animals.

Since the survey techniques for pond turtles are not invasive or destructive, no changes to methods were necessary to transition to occupancy level surveys. A total of 18 sites currently make up the property-wide pond turtle sample.



Figure 6. Basking pond turtle on Lower Yager Creek.

Results and Discussion

During the reporting period 2017-2018 no surveys were conducted for this species and there are no results to report.

WATERSHED ANALYSIS

There are eight WAUs covering HRC lands:

- Freshwater
- Van Duzen
- Lower Eel/Eel Delta
- Elk River/Salmon Creek
- Upper Eel/Larabee Creek
- Bear River
- Yager Creek
- North Fork Mattole

The initial round of watershed analyses has been completed for all eight WAUs, and watershed analysis revisitation is currently in progress. The Elk River/Salmon Creek WAU revisitation has been completed and submitted to the Wildlife Agencies. The Freshwater WAU revisit report is expected to be submitted in 2018, with the Van Duzen WAU revisit expected in 2018-2019.

Each watershed analysis report contains an amphibian/reptile module. Results from each module are considered during the watershed analysis synthesis, and through prescription development, to minimize, and if necessary, mitigate management effects on the covered amphibians and reptile.

In general, the results of the amphibian and reptile modules have shown that the covered species are present in the WAUs, and that there are occurrences of degraded habitat, potential habitat, and suitable, occupied habitat. Site-specific prescriptions for Class I, II, and III waters have been developed in keeping with the habitat needs of the covered species. The individual watershed analysis reports are on file at HRC and available upon request.

The goal of watershed analysis revisitation for each WAU relative to the covered amphibians and reptile is to address questions concerning any changes in distribution, habitat, and possible impacts of land management on the species since the original watershed analysis; by using known location and monitoring data, and utilizing available habitat information. Additional information generated by other watershed analysis modules that address aspects of the WAU such as landslides, sediment levels, loss or creation of wetlands and ponds, and water temperatures can be incorporated during the watershed analysis revisitation process.

As an example, the Elk River WAU revisit (HRC 2014) provided the following information:

*“HRC completes annual monitoring of covered species habitat and presence as described under the Aquatic Conservation Plan (ACP) in the HCP. These covered species include southern torrent salamander (*Rhyacotriton variegatus*), tailed frog (*Ascaphus truei*), northern red-legged frog (*Rana aurora aurora*), foothill yellow-legged frog (*Rana boylei*), and northwestern pond turtle (*Emys marmorata*). Distribution of covered species continues to be fairly widespread in suitable habitat. The ERSC WAU continues to host quality habitat for southern torrent salamanders, northern red-legged frogs, and tailed frog. Monitoring efforts have not focused on habitats preferred by yellow legged frogs or western pond turtles, which are more limited in the ERSC WAU.*

All information gathered since the initial Watershed Analysis supports those earlier findings. HRC surveys have indicated that red-legged frogs within the property-wide study area deposit their eggs from October through February which is considerably earlier than suggested in literature for other regions of the West Coast (Storm 1960, Brown 1975, Licht 1969). Property-wide monitoring has also found that ponded waters were often heavily utilized for egg deposition (one site with over 320 egg masses), while pools observed within watercourses were not utilized.

At this time, all monitoring suggests that prescriptions intended to protect watercourses by minimizing water temperature increases, minimize sediment input and encourage LWD recruitment continue to provide good habitat for amphibians and reptiles within the ERSC WAU.”

SUMMARY AND RECOMMENDATIONS

For the 2017-2018 survey period efforts were focused on examination of FYLF habitat conditions and presence due to their status as a State Candidate for listing under CESA.

Distribution of the covered species continues to be fairly widespread in suitable habitat. No degraded habitats of any of the species were noted, although it has been noted that increased growth of riparian vegetation around ponds and wetlands can render them unsuitable for red-legged frog breeding.

Watershed analysis has aided in finding areas of good habitat to be maintained, as well as areas of habitat that can be improved or restored. During ensuing survey seasons, occupied amphibian/reptile habitat will continue to be monitored over time to develop an index of occupancy. No changes in the monitoring strategy are recommended at this time.

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