



Amphibian and Reptile Summary Report

2020



June 1, 2020

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

Project Manager: Sal Chinnici, Director, 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 summary report covering the 2019-2020 monitoring period there was an emphasis on foothill yellow-legged frog work that coincided with their State Candidacy status. Survey and monitoring work for the other covered species is ongoing in relation to current watershed analysis revisitation and will be available later this year in the Van Duzen River Watershed Analysis revisit.

Relative to the foothill yellow-legged frog, on 18 September, 2018 HRC was issued an Incidental Take Permit (ITP) by the California Department of Fish and Wildlife (CDFW) (ITP No. 2081-2018-039-01) pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14, section 783.0 et seq. The California Endangered Species Act (CESA) prohibits the take of any species of wildlife designated by the California Fish and Game Commission as an endangered, threatened, or candidate species. CDFW may authorize the take of any such species by permit if the conditions set forth in Fish and Game Code section 2081; subdivisions (b) and (c) are met. (See Cal. Code Regs., tit. 14, § 783.4).

As a result of this significant management change, for this summary report we have included our 2020 Final Mitigation Report covering activities conducted in 2018 and 2019 under the ITP. On 11 December

2019, the Commission made a determination that listing the Northwest/North Coast clade of the FYLF is not warranted. At the 21 February 2020 meeting the Commission unanimously adopted these findings, and since HRC lands are within the region that contain the Northwest/North Coast clade, the FYLF was not listed for protection in the project area. HRC operations under the ITP were conducted from September of 2018 to March of 2020. As a result of the listing determination, the ITP was terminated before expiration.

Project Manager:

A handwritten signature in blue ink, appearing to read "S. Quinn". The signature is fluid and cursive, with a large initial "S" and a trailing flourish.

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2020 Foothill Yellow-legged Frog Final Mitigation Report

**California Endangered Species Act
Incidental Take Permit No.**

2081-2018-039-01



Encompassing Class I Watercourse Crossings:

**Bear River at Nelson Creek
Atwell Creek
Van Duzen River at Corbett Ranch
Van Duzen River at Root Creek
Eel River at Dyerville**

Foothill Yellow-legged Frog Final Mitigation Report - 2020

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INTRODUCTION

Humboldt Redwood Company (HRC) owns and manages approximately 209,000 acres of redwood and Douglas-fir forestlands in Humboldt County, CA. The property is in a north-to-south band lying 5 to 50 miles inland from the Pacific Ocean and is generally accessible along U.S. Highway 101. The landscape is a diverse series of ridges uplifted as the oceanic plates collide with the North American continent, producing a mountainous terrain with elevations rising from 40 to 3,600 feet above sea level. Vegetation on HRC lands is primarily Coastal Redwood and Douglas-fir Mixed Conifer Forests (approximately 153,000 acres). Areas that lie inland farther from the influence of the marine climate, and holdings within the Bear and Mattole River drainages are dominated by Douglas-fir and Hardwood Mixed Evergreen Forest (estimated 46,000 acres).

Approximately 95% of the property is forested, with the remaining area covered by prairie, shrubs, and waterways (~10,000 acres). The geology underlying the ownership is composed of sedimentary rocks accreted to the active margin of the North American continent as the Gorda and San Juan de Fuca plates slip under the continent a short distance offshore. The bedrock is highly deformed and fractured creating a structurally weak mélange in the east made up of folded, faulted, and fractured hard sandstones and argillites in the south and west, and poorly consolidated young fine-grained silts, clays, and sands in the north and central portions of the property. The soils are typically well drained, shallow to moderately deep, and can provide nutrients to sustain long term forest growth.

HRC forestlands contain suitable habitat for the foothill yellow-legged frog (*Rana boylei*), and the species is widespread and locally abundant. The FYLF had been designated as a candidate for State listing as a threatened or endangered species under CESA. At the 21 June 2017 Fish and Game Commission meeting addressing a listing petition, the Commission voted to accept the petition, advancing the foothill yellow-legged frog toward candidacy, and upon the adoption of findings on 27 June 2017, FYLF became eligible for take prohibitions under the CESA. The FYLF is also currently a CDFW Species of Special Concern in California but is not listed under the federal ESA.

Subsequent to the FYLF being designated as a candidate species, HRC applied for an Incidental Take Permit (ITP), and on 18 September 2018 HRC was issued an ITP by the CDFW (ITP No. 2081-2018-039-01) pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14, section 783.0 et seq. CESA prohibits the take of any species of wildlife

designated by the California Fish and Game Commission as an endangered, threatened, or candidate species. CDFW may authorize the take of any such species by permit if the conditions set forth in Fish and Game Code section 2081; subdivisions (b) and (c) are met. (See Cal. Code Regs., tit. 14, § 783.4).

On 11 December 2019, the Commission made a determination that listing the Northwest/North Coast clade of the FYLF is not warranted. At the 21 February 2020 meeting the Commission unanimously adopted these findings, and since HRC lands are within the region that contain the Northwest/North Coast clade, the FYLF was not listed for protection in the project area. HRC operations under the ITP were conducted from September of 2018 to March of 2020. As a result of the listing determination, this ITP was terminated before expiration and this will serve as our Final Mitigation Report (FMR).

Per Section 6.7 of the HRC ITP, this FMR is required to summarize the ASRs completed during 2018 and 2019. This FMR includes: (1) all information provided in both ASRs; (2) copies of each table in the MMRP; (3) all information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of the ITP in minimizing impacts to Covered Species; and (7) recommendations on how mitigation measures might be changed to more effectively minimize the impacts of Covered Activities on the Covered Species.

DESCRIPTION OF COVERED ACTIVITIES

HRC conducts forest management and conservation activities (timber harvest and regeneration, site preparation, planting, vegetation management, thinning, and fire suppression) and associated operations (e.g. road construction, maintenance, improvement, and closure) on its lands in Humboldt County, California. These activities are conducted according to the conservation measures and other requirements of the HRC Habitat Conservation Plan (HCP), the California Board of Forestry Forest Practice Rules (FPRs), a Master Agreement Timber Harvesting Operation Lake and Streambed Alteration Agreement (MATO), an Option (a) Sustained Yield document filed with the California Department of Forestry and Fire Protection (CAL FIRE), and Waste Discharge Requirements authorized by the North Coast Regional Water Quality Control Board.

INCIDENTAL TAKE OF COVERED SPECIES

There are 17 covered species under the HRC HCP, including birds, mammals, fish, amphibians, and a reptile. The FYLF was one of the federally covered, but currently unlisted species, and was a state candidate for listing as described above. Covered Activities and their resulting impacts were expected to result in the incidental take of individuals of the covered species. Incidental take of these species in the form of mortality could occur as a result of Covered Activities such as crushing individuals with heavy equipment during watercourse crossing construction, log hauling or tree felling. The Covered Species were at risk of being pulled into intakes during Class I watercourse and II watercourse drafting operations. Take may also have occurred during the pursuit and capture of the Covered Species during relocation efforts associated with watercourse crossings.

FYLF ITP No. 2081-2018-039-01 (effective 7 September 2018) authorized the take of the Covered Species and only the Covered Species. With respect to incidental take of the Covered Species, CDFW authorized HRC, its employees, contractors, and agents to take Covered Species, incidentally, in carrying out the Covered Activities, subject to the limitations described within the ITP.

PROJECT LOCATION AND AREA SURVEYED

Class III, II, and I Watercourse Crossings

FYLF visual encounter surveys (VES) were conducted by HRC biologists, HCP Roads Department staff and/or RPFs, trained by qualified biologists in 2018 and 2019 (Table 1). Class I project locations were collected on-site with a hand-held GPS unit (Garmin® 64s) in 2018 and 2019 (where FYLF were detected) and the area surveyed was determined by calculating the square footage of the surveyed habitats then converting those values to acres (Table 2).

Table 1. Class III, II, & I watercourse crossings surveyed for FYLF during Covered Activities in 2018 & 2019

Watercourse Crossings Surveyed For FYLF	2018	2019	Total
# Class III Watercourses	154	67	221
# Class II Watercourses	69	44	113
# Class I Watercourses	4	4	8

Table 2. 2018 and 2019 FYLF Class I watercourse crossing mitigation locations and approximate project area surveyed since the effective date of the HRC FYLF ITP No. 2081-2018-039-01 (7 September 2018)

Site Name	Approximate Project Location	Approximate Area Surveyed (acres)
Van Duzen River at Corbett Ranch (2018)	-124.006, 40.508	0.28
Bear River at Nelson Creek (2018)	-124.082, 40.389	0.21
Atwell Creek (2018)	-124.156, 40.486	0.14
Van Duzen River at Corbett Ranch (2019)	-124.006, 40.508	0.28
Van Duzen River at Root Creek (2019)	-123.936, 40.476	0.19
Eel River at Dyerville (2019)	-123.915, 40.348	0.31
Total Area Surveyed in 2018		0.63
Total Area Surveyed in 2019		0.78
Total Area Surveyed since issuance of ITP		1.41

FYLF TAKE MINIMIZATION EFFECTIVENESS ASSESSMENT

Take minimization measures were conducted at six (6) Class I watercourse crossing locations between September 2018 and November 2019 in accordance to Section 7.1 of Incidental Take Permit No. 2081-2018-039-01. Table 3 summarizes the capture and relocation efforts conducted in 2019 by designated qualified biologists before any Covered Activities began during the temporary bridge installations. This table does not include summaries of the FYLF mitigation efforts conducted upon the installation of the watercourse crossings in June 2018, as the ITP was not effective until 7 September 2018. However, mitigation efforts at the time of the crossing installations at the Van Duzen at Corbett Ranch and Bear River at Nelson Creek were consistent with those outlined in the final ITP. The watercourse crossing installation at Atwell Creek occurred prior to the HRC ITP when FYLF mitigation was not yet applicable. With zero observed mortality at all 3 locations in 2019, it was determined that the mitigation measures outlined in the HRC FYLF ITP were effective in minimizing take during the temporary bridge installations.

Table 4 summarizes the capture and relocation efforts conducted by designated qualified biologists before any Covered Activities began during the temporary bridge removals. With zero observed mortality at all 6 locations from 2018 to 2019, it was determined that the mitigation measures outlined in the HRC FYLF ITP were effective in minimizing take during the temporary bridge removals.

Table 3. Summary of FYLF take minimization efforts conducted during 3 Class I watercourse crossing installations in 2019

Site Name	Total # Egg Masses	Total # Tadpoles	Total # Adults	Total # Mortality	Total # Passes
Van Duzen River at Corbett Ranch (8/15/2019)	0	509	5	0	15
Van Duzen River at Root Creek (6/25/2019)	0	81	1	0	12
Eel River at Dyerville (6/27/2019)	0	0	5	0	6

Table 4. Summary of FYLF take minimization efforts conducted during Class I watercourse crossing removals in 2018 and 2019

Site Name	Total # Egg Masses	Total # Tadpoles	Total # Adults	Total # Mortality	Total # Passes
Van Duzen River at Corbett Ranch (10/12/2018)	0	7	1	0	10
Bear River at Nelson Creek (10/18/2018)	0	0	1	0	3
Atwell Creek (10/4/2018)	0	0	1	0	3
Van Duzen River at Corbett Ranch (10/16/2019)	0	0	4	0	5
Van Duzen River at Root Creek (11/15/2019)	0	0	3	0	5
Eel River at Dyerville (10/9/2019)	0	0	2	0	4

FYLF removal and relocation efforts, in conjunction with the deployment of fine mesh exclusion fencing bracketing the crossing right of ways, were determined to be the most effective at minimizing incidental take during Covered Activities. Once the exclusion fencing was installed, HRC biologists and other properly trained personnel were effective at removing all detectable FYLFs to depletion standards. On several occasions, FYLF tadpoles and/or adults were observed up against and sometimes holding onto the outer sides of the exclusion fencing, unable to pass into the active construction zones. This provided sufficient evidence of the effectiveness of these physical barriers at minimizing incidental take.

Based on field observations, HRC biologists and other properly trained personnel noted that FYLFs of all life stages should be dispersed over as wide of an area as possible during removal/relocation efforts. On large, open channels such as the Eel River, suitable release habitats were abundant. Initially, FYLFs were being released after each pass in the same general vicinity downstream of the construction zones. Soon though, Great Egrets (*Ardea alba*) and Great Blue Herons (*Ardea herodias*), among other predatory water birds, were observed feeding in & around the designated relocation areas. Perhaps this was simply coincidence, but it appeared highly likely that these birds were simply taking advantage of the greater concentration of food items available to them. After these observations, the release protocol was adjusted to continue releasing FLYFs after each pass but were then dispersed over a much wider area to reduce their densities. Any future removal/relocation efforts should include directives to disperse individual animals to the greatest extent possible to prevent increased mortality due to natural predation.

BULLFROG MONITORING AND LETHAL REMOVAL

Monthly Visual Encounter Surveys (VES) had been conducted on the Scotia Log Deck Pond (Photo 1), Log Deck Pond overflow ditch, and adjacent seasonally flooded timber stand for American bullfrog (*Lithobates catesbeianus*) since May 2019. On every VES conducted between May and October of 2019, no greater than one (1) bullfrog had been detected on any given occasion (Photo 2). Low densities of bullfrogs were anticipated since the pond was constructed less than three years ago. However, as the pond and adjacent wetlands revegetate over time, bullfrog habitat conditions are expected to improve. All 3 listed areas of potential habitats are fully wetted during the winter and spring, but only the Scotia Log Deck Pond is wetted during the summer and early fall. Per section 8.2 of the ITP, targeted, lethal bullfrog removal efforts commenced on 10/7/2019 and ended on 11/7/2019, resulting in the elimination of 3 individuals using a high-powered air rifle (table 4). Bullfrog VES and removal efforts will resume in the spring of 2020 at the onset of the breeding season. This will continue on a volunteer basis for one (1) year and may extend into the future depending on observed bullfrog densities.



Photo 1. Photograph of the Scotia Log Deck Pond, showing current bullfrog habitat conditions on 9/23/2019 prior to bullfrog lethal removal efforts



Photo 2. Photograph of a single adult bullfrog near the southwest bank of the Scotia Log Deck Pond on 9/23/2019 prior to bullfrog lethal removal efforts

Table 5. Results of 12 days of bullfrog lethal removal efforts at the Scotia log deck pond between 10/3 – 11/7/2019

Date	# Male Bullfrogs	# Female Bullfrogs
10/3/2019	1	0
10/4/2019	1	1
10/7/2019	0	0
10/11/2019	0	0
10/18/2019	0	0
10/21/2019	0	0
10/24/2019	0	0
10/27/2019	0	0
10/30/2019	0	0
11/4/2019	0	0
11/5/2019	0	0
11/7/2019	0	0