

Evaluating Habitat Suitability at Apricot Lane Farms for the Proposed Introduction of the California Red-Legged Frog (*Rana aurora draytonii*)



Red Legged Frogs (Rick Kuyper/USFWS)

Proposers:

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Client:

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Objectives:

The California red-legged frog (CRLF) is a federally threatened species, endemic to California, whose population is declining, currently limited to about 30% of their historic range (6). Through conservation management efforts, such as reintroductions and habitat restoration, the CRLF's population may recover. This project will help Apricot Lane Farms prepare for the introduction of the CRLF to their farm. Key objectives include:

- Analyse data from CRLF introduction efforts in the Santa Monica Mountains, Apricot Lane Farm's pond water quality data, hydrology, soil moisture, climate and precipitation data, vegetation cover and type, and CRLF food availability at the proposed reintroduction site.
- Comparison of Apricot Lane Farm's baseline data at the proposed reintroduction site with species history and needs as well as existing data from CRLF introduction efforts in surrounding regions to assess viability.
- Submit a Conservation Benefit Agreement (CBA) with Apricot Lane Farms to USFWS on the habitat suitability of the farm's pond and surrounding uplands, to introduce CRLFs to the farm (and perhaps open the door for vernal pool fairy shrimp introduction).

Implications:

The CRLF was listed as threatened in 1996 following population declines, primarily due to habitat loss, for example, over 90% of historic wetlands in the California Central Valley have been lost to agricultural and urban development¹. The CRLF was formerly found in 46 counties of California but has been lost from 24% of these and is now found in 35 counties¹. As one solution to help conserve endangered or threatened species like the CRLF, the US Fish and Wildlife Service (USFWS) offers support to private landowners to help conserve or reintroduce species, through Conservation Benefit Agreements (CBA).

CBAs can include some or all of the following benefits:

- Maintenance, restoration, or enhancement of existing habitats.
- Reduced habitat fragmentation; increases in habitat connectivity.
- Stabilized or increased numbers or distribution.
- The creation of buffers for protected areas.
- Opportunities to test and develop new habitat management techniques.
- There is also a trade-off for the landowner (in this case, Apricot Lane Farms), whereby, as long as they are providing habitat improvements resulting in a net benefit to the species, they are exempt from legal liability if any CRLFs are killed by agricultural activities.

Apricot Lane Farms, a 214-acre regenerative farm based near Moorpark, CA, aims to utilize the CBA program to introduce California Red-Legged Frogs (CRLF) onto their farm. The farm is "focused on seeing and utilizing the interconnectedness of nature to build soil health, maximize biodiversity, and regeneratively grow the most flavorful, nutrient-dense food possible. The farm is also the home of the award-winning, critically acclaimed feature documentary *The Biggest Little Farm*."²

The project will help Apricot Lane Farms complete the CBA, focusing specifically on compiling and analyzing data to provide a habitat suitability report to fulfill the needs of the CBA for submission to the USFWS. There is the added benefit of support from the USFWS, (already obtained by Apricot Lane Farms) who can be consulted throughout the process.

Existing Data:

Source	Description
NOAA Climate Explorer	Ventura county climate and precipitation data
FWS - Recovery Plan	CRLF species recovery plan including location data, pond suitability, invasive species threats
FWS - CBAs	Existing CBAs for CRLFs
County of Ventura - Watershed	Watershed and basin data for Ventura County
Land-Use History and Future Plans	Qualitative data in previous land use as well as species planted
Initial Pond Habitat Construction Plan	Landscaping plan available, showing pond depth and structure

Data Collection:

Required Data	Collection Details
Pond Water Quality	To be gathered by student group members either on visits to the farm or through a summer internship. All have support from Apricot Lane Farms, and equipment is available.
Vegetation Survey	
Species Survey	
Surrounding Land Use	To be collected from neighboring landowners or satellite data.
Farm Practises/Schedule	Can be provided by Apricot Lane Farms.

Possible Approaches:

- Conduct a literature and data review of existing CRLF habitat preferences to establish baseline habitat suitability.
- Analyze and compare data collected from the proposed reintroduction site with wider CRLF data to assess habitat suitability for CRLF at Apricot Lane Farms.
- Create a map using GIS to show the farm, surrounding land, and watershed features to determine viability of population expansion.

Final Deliverables:

In addition to a final written report, executive summary, and oral presentation, the team will produce:

- Site-specific habitat assessment for the CRLF.
- CBA ready for submission to CDFW.

Internship:

Client approved and may be necessary for data collection. This position has the potential to be paid but this cannot be guaranteed yet.

Citations:

1. <https://www.fws.gov/species/california-red-legged-frog-rana-draytonii>
2. <https://www.apricotlanefarms.com/>
3. <https://www.amphibians.org/wp-content/uploads/sites/3/2019/04/California-Red-legged-Frog-Recovery-Plan.pdf>
4. <https://www.fws.gov/sites/default/files/documents/2024-05/conservation-benefit-agreements-fact-sheet.pdf>
5. https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=FGC&division=3.&title=&part=&chapter=1.5.&article=3.7
6. https://www.biologicaldiversity.org/species/amphibians/California_red-legged_frog/natural_history.html

Client Letter of Support:



Master of Environmental Science (MESM) Group Project Committee
Bren School of Environmental Science & Management
University of California, Santa Barbara

January 10, 2025

Subject: Evaluating Habitat Suitability at Apricot Lane Farms for the Proposed Introduction of the California Red-Legged Frog (*Rana aurora draytonii*.)”

Dear MESM Project Committee,

Apricot Lane Farms is pleased to express our support and commitment to the project proposal, “Evaluating Habitat Suitability at Apricot Lane Farms for the Proposed Introduction of the California Red-Legged Frog (*Rana aurora draytonii*.)”

Apricot Lane Farms, in Moorpark, CA, is a 234-acre farm integrated within a reawakened ecosystem. The farm regeneratively grows more than 200 varieties of fruits and vegetables, and raises sheep, cows, pigs, chickens and ducks with care and respect while working in harmony (or a comfortable level of disharmony) within a dynamic ecosystem. Apricot Lane Farms is the subject of the award-winning documentary film, “The Biggest Little Farm.”

Apricot Lane Farms has been in discussion with the U.S. Fish and Wildlife Service to introduce a population of the California Red-Legged Frog to a newly-built pond. The proposed project will support the generation of a Conservation Benefit Agreement between U.S. Fish and Wildlife and Apricot Lane Farms, preparing the way for the introduction of the threatened species.

The work will entail becoming intimate with the workings and practices of the farm, including orchard and pond management and the life history and needs of the species, while also comparing site data with the established habitat needs of the frog.

Apricot Lane Farms will support this project through mentoring the project participants, providing guidance and oversight of project activities, facilitating communications with U.S. FWS and offering the option of a summer internship.

We appreciate the committee’s consideration of this project and would be excited to work with students from the Bren School, if selected. Please let me know if additional information is needed.





Kind Regards,

A handwritten signature in black ink, appearing to read "Shawn Greenbaum".

Shawn Greenbaum
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