

### COUNTY OF SANTA CRUZ

### FISH AND WILDLIFE ADVISORY COMMISSION

701 OCEAN STREET, ROOM 312, SANTA CRUZ, CA 95060 (831) 454-3154 FAX: (831) 454-3128

#### **AGENDA**

### November 5, 2020, 7:00 PM

This meeting will be conducted as a video conference.

Please contact Kristen Kittleson <u>kristen.kittleson@santacruzcount.us</u> for the video meeting link.

Agenda	Start	End	Description
Item #	Time	Time	
1	7:00	7:00	Call to Order
2	7:00	7:10	Roll Call and Guest Introductions
			Introduce new commissioner: Liz Alter
3	7:10	7:15	Approval of Minutes
4	7:15	7:20	Public Comments
5	7:20	8:10	Public Grants Program: Hear proposals and ask questions; consider public comment  1. Transportation for Ocean Stewards 2. Waterproof Marine Mammal Ocean Users' Guide 3. Watershed Rangers After-School Program 4. WOLF School Salamander Monitoring Project 2020-2021 5. Santa Cruz County Breeding Bird Atlas 6. The Cannonball Express
6	8:10	8:20	CZU August Lighting Complex Fire status, discuss recovery actions and consider sending letter to the Board of Supervisors regarding post-fire concerns and recommendations
7	8:20	8:25	Elect new Vice Chair
8	8:20	8:25	Discuss December agenda, work plan and report to the Board of Supervisors for 2019 and 2020.
8	8:30	8:45	Commissioner Reports and Announcements
9	8:45	8:55	Staff Reports
10	8:55	9:00	Review Correspondence
	9:00		Adjourn

#### 14. CORRESPONDENCE

Please see Fish and Game commission for regulatory announcements <a href="https://fgc.ca.gov/Regulations/2020-New-and-Proposed">https://fgc.ca.gov/Regulations/2020-New-and-Proposed</a>

- a) Notice of Proposed Emergency Action re: Take of Western Joshua Tree
- b) Notice of regulatory action relating to Recreational Crab Trap Fishery
- c) Notice of Simplification of Inland Sport Fishing regulations
- d) Notice of Findings regarding Petition to List leatherback sea turtle as endangered under CESA
- e) Notice of proposed regulatory action re: Recreational Sea Urchin Bag Limit Exemption

The County of Santa Cruz does not discriminate on the basis of disability, and no person shall, by reason of a disability, be denied the benefits of its services, programs, or activities. This online meeting is available to anyone with a telephone. If you are a person with a disability and require special assistance in order to participate in the meeting, please contact Kristen Kittleson at (831)454-3154 or TDD number (454-2123) at least 72 hours in advance of the meeting in order to make arrangements. Persons with disabilities may request a copy of the agenda in an alternative format. As a courtesy to those affected, please attend the meeting smoke and scent free.

### **Commissioner and Public Participation Information and Guidelines**

The meeting of the Fish and Wildlife Advisory Commission will take place on a video conferencing system, Microsoft Teams. To join the meeting, you will need to receive an email with the meeting link. The meeting link will be distributed to commissioners and people on the public distribution email list. If you are not on these email distribution lists, please contact Kristen Kittleson, <a href="mailto:kristen.kittleson@santaccruzcounty.us">kristen.kittleson@santaccruzcounty.us</a> to request the meeting link.

Click on the Microsoft Teams icon in the email meeting notice. You will automatically be asked if you want to join the meeting. Commissioners are expected to join with a video camera. Public attendees may choose to have their cameras on or off.

Please join the meeting a few minutes BEFORE 7:00 pm so that we can start at 7:00 pm. Staff will open the video conference at 6:50 pm. Feel free to chat and say hello before 7:00 pm.

### Meeting Roles and Rules:

All meeting attendees should keep their microphones on mute unless they are speaking.

Chris Berry, Chair, will lead the meeting. Chair Berry will announce each agenda item, identify who will be leading an item and introduce discussion and public comment periods.

Kristen Kittleson, staff, will assist with roll call, note taking, and tracking who wants to speak. Please allow time for staff to make notes about any decisions. Kristen will monitor both her email and her text messages during the meeting.

There will be a public comment period for each item and the Chair will invite the public to participate at the appropriate time.

During a discussion, if 2 or more people speak at the same time, please defer to the person who speaks first. In any moment where we have some confusion due to multiple people wanting to speak, please pause and let the Chair take the lead. The Chair will call on someone to speak.

If you are having trouble joining the conversation, you can send a message to Kristen (email <a href="mailto:kristen.kittleson@santacruzcounty.us">kristen.kittleson@santacruzcounty.us</a>) and she will call on people who want to comment.



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Meeting Minutes September 3, 2020

1. **CALL TO ORDER** – 7:02 pm

2. ROLL CALL

Present: Commissioners Berry, Morrow, Baron, Somerton, Wise, Buchwald, Gómez, Michelsen

Excused: Lee Absent: none

Guest Introductions: Ben Harris, Monterey Bay Salmon and Trout Project (MBSTP)

- 3. **APPROVAL OF MINUTES** Commissioner Michelsen made a motion to approve the minutes; Commissioner Somerton seconded the motion. All aye, the minutes were approved.
- 4. **PUBLIC COMMENTS**. Staff responded to a public comment by including more information with the agenda on how to join and provide public comments to FWAC remote meetings. The November meeting will be a video meeting.
- 5. **CZU Lightning Complex Fire Update.** Staff provided information about the fire and commissioners discussed post-fire recovery. The Monterey Bay Salmon and Trout Project (MBSTP) submitted a proposal for \$5,000 in emergency funding to purchase an ATV vehicle that was destroyed in the fire. The vehicle is critical to the operation of the hatchery and used to access the hatchery site, transport feed, and check incoming water lines. Commissioner Michelsen made a motion to approve \$5,000 in funding to the MBSTP to purchase an ATV; Commissioner Buchwald seconded the motion. After discussion, Commissioner Michelsen amended the motion to approve \$5,000 in funding to purchase anything critical to the function of the hatchery if funding for the ATV is not needed; Commissioner Buchwald seconded the amended motion. All aye, the motion is approved.
- 6. **Public Grants Program.** There is a total of \$16,000 available for expenditures, and with the \$5,000 recommended for emergency funding, there will be \$11,000 to allocate to the Public Grants program. Commissioner Baron made a motion to include the remaining \$11,000 in the Request for Proposals; Commissioner Buchwald seconded the motion. All aye, the motion passed. Staff will send out the Request for Proposals and the commission will receive proposals and hear from applicants at the November 5 meeting.
- 7. **Update on Regional Conservation Investment Strategy (RCIS).** The Resource Conservation District of Santa Cruz County and the Regional Transportation Commission have been working on the RCIS and are working with California Dept of Fish and Wildlife to create an ecosystem framework instead of a species framework for the strategy.
- **8. Topic Updates.** Commissioners briefly discussed several topics, including no current plans for a joint meeting with the Commission on the Environment and the Water Advisory Commission.
- 9. Commission Reports and Announcements.
- 10. Staff Reports and announcements.
- 11. Discuss November Agenda.
- 12. **ADJOURNMENT.** The meeting adjourned at 9:01 pm.

- 1. Project name: Transportation for Ocean Stewards
- 2. Name of organization or individual submitting the proposal: O'Neill Sea Odyssey
- 3. Amount of funding requested: \$2,000.

For each of the following sections, give a brief description:

- 4. Project Description: Transportation for Ocean Stewards will enable Santa Cruz County classes that want to participate in O'Neill Sea Odyssey's (OSO) free, ocean-going science and environmental field trip can in fact do so by receiving support for bus transportation from their school to OSO's facility in the Santa Cruz Harbor.
- 5. Project objectives and goals: The goal of this project is to support at least two Santa Cruz County classes with bus transportation funding. Bus costs based on invoices received from schools range anywhere from \$300 to \$1,200. It is very likely that O'Neill Sea Odyssey could serve four classes with these funds, and it is certain that OSO will serve a minimum of two. O'Neill Sea Odyssey engages 4th - 6<sup>th</sup> grade youth with an education program in navigation, sailing, conservation, and marine science on a 65-foot catamaran sailing Monterey Bay, and in a shore-side education center. Along with free, ocean science curriculum for their classroom. The program is free, and each group completes a community service project. Every year, OSO students complete more than 200 community environmental service projects including native plantings and wetlands restoration, beach and river cleanups, dune restoration projects, pollinator plantings, campus waste reduction and recycling campaigns, and the creation of school gardens. During COVID-19 shelter in place, OSO has served hundreds of kids with virtual marine science education videos and classroom discussions, provided worksheets and projects, homework review, and oversight of remote community service projects which continue to be completed from the safety of student homes. OSO's mission is to provide a hands-on educational experience to encourage the protection and preservation of our living sea and communities. Over 107,000 youth have been served.
- 6. Background and history of the problem: Although O'Neill Sea Odyssey's field trip itself is free of charge, the cost of bus transportation has become an obstacle to participation in OSO by many schools. School classes that would receive bus scholarships are selected based on their income status as determined by their eligibility for USDA's free and reduced cost lunch program, their ability to pay for a bus, and whether they will actively seek the best possible price for one (requiring approval by O'Neill Sea Odyssey). Bus transportation is effective in the recruitment of classes to participate in our program, and in removing a barrier to ocean-going, environmental learning for youth. In the 2018-2019

school year, OSO provided on-the-water marine education experiences to 5,619 students in 209 classes, and to assist lower income schools, granted \$54,814.29 in bus transportation scholarships for 94 classes.

- 7. How will the project be accomplished (design specifications or plans, if applicable): Education Program Manager Laura Walker schedules 200-210 classes per year. To qualify for the bus transportation scholarship, the school class will be required to send a letter or email to Mrs. Walker showing evidence that: 1) the teacher will in fact be required to pay for the bus needed to transport students and how much the bus will cost, 2) the teacher has actively made an effort to keep the cost as low as possible including coordinating with other classes that can share buses should they both be receiving a field trip on the same day, and 3) there are no other sources of funding for bus transportation available to that class. Based on these factors, the classes to receive scholarships will be selected. Teachers are also told to invoice O'Neill Sea Odyssey immediately after they complete their trip for the full cost. Bus transportation scholarship funds are used as a pass-through grant where O'Neill Sea Odyssey spends the entirety of the donation on actual bus costs as outlined by district invoices with no administration fee received by O'Neill Sea Odyssey.
- 8. Budget (include sufficient detail to explain use of grant monies). Specify if there are any sources of other funds committed to the proposed project.

Item	Funds	Match	Total
	Requested	Contribution	Amount
	\$2,000	\$5,200	\$7,200
Transportation for Ocean			
Stewards			
TOTAL AMOUNTS	\$2,000	\$5,200	\$7,200

- 9. Timeline for completion: Between March 1, 2021 and March 1, 2022\*

  \*This makes the assumption that classes will return to some form of in-person learning in the Spring 2021 semester or the Fall 2021 semester with regards to the COVID-19 pandemic. Should classes return to in-person programming, O'Neill Sea Odyssey assumes an increased need for transportation scholarships to support schools during massive budget cuts. Funds will be needed for either or both semester should sessions return to in-person. Should they not, O'Neill Sea Odyssey could request an amendment, extension, or return the funds.
- 10. Background or history of your organization: O'Neill Sea Odyssey (OSO) engages 4th 6<sup>th</sup> grade youth with an ocean-based educational field trip and bilingual curriculum for their classrooms to achieve educational standards using ocean concepts, while teaching youth about watersheds that flow to the sea and their responsibility to protect them. Classes apply

online at oneillseaodyssey.org. The program is free and each class completes a community service project that benefits the flourishing of their watershed. The area of service includes the Santa Cruz County, Monterey County, and Santa Clara County. Founded in 1996, in 2004 OSO received the California Governor's Environmental and Economic Leadership Award, in 2005 US Senator Barbara Boxer provided her Environmental Champion award and in 2013 the Silicon Valley Business Journal bestowed its Community Impact Award. In 2009, OSO's Adam Webster Memorial Fund received the Community Spinners award for its work with special needs youth. In 2019, OSO joined the Packard Equity Action Network two-year incubator to increase racial equity and representation in the organization's management and programs, and in 2020, OSO launched the LGBTQ+ Watershed Educators alliance in partnership with Watsonville Wetlands Watch and Web of Life Field School to support LGBTO+ youth, chaperones, staff, and volunteers. In 2019-2020, OSO hired three bilingual and Latinx Marine Science instructors to support communication between students, and particularly chaperones that are Spanish-speaking only. OSO has served more than 107,000 students and has increased its transition of its offerings onto virtual platforms to enhance access year-round and respond to the COVID-19 pandemic. In 2020, OSO launched a distance learning webpage and weekly resource sharing for teachers. Online materials available for free to the public can be found at www.oneillseaodyssey.org/kids-zone/



1. Project name

#### Waterproof Marine Mammal Ocean Users' Guide

2. Name of organization or individual submitting the proposal

#### **Marine Life Studies**

3. Amount of funding requested

\$1,700

For each of the following sections, give a brief description:

4. Project Description

This grant would support the reprint of the Waterproof Marine Mammal Ocean Users' Guide.

5. Project objectives and goals

The waterproof Marine Mammal Guide is used to increase the public's understanding of marine mammals and conservation with distribution throughout the ocean recreation community including scuba diving, kayaking, surfing, whale/watch/nature cruise boat operators, lifeguards, sport fishing boats, state parks and beaches, sailing businesses, and others that utilize the Monterey Bay National Marine Sanctuary.

In general, the public needs to be informed and educated about the California coast, whether it is because they live there or they are visitors. This guide will increase the visibility of the natural wildlife on the coast. While people realize what they can potentially see (whales, dolphins, and other wildlife), they will be interested to take that information and do more research. This will inspire individuals and draw them to the coast to see animals in their natural habitat. While people learn more about the guidelines of how to protect marine mammals and the coastline, they will be more inclined to approach others that are wrongdoing or harassing marine mammals.

In the past, Fish and Games of Monterey County and the Monterey Bay National Marine Sanctuary also distributed the guide to educate the public on the proper guidelines for viewing marine mammals in their natural habitat. We distribute them to the public for free at all of our events. The guide is an excellent educational tool for school curriculums and programs. The guide has been distributed to many teachers and students throughout the Central Coast. We include this guide in our educational materials and use it as a teaching aid for Marine Life Studies' Educational Programs for children, including free programs for kids at the Boys & Girls Clubs of Monterey County, both Seaside and Salinas Units.

The goal of this project is to reach as many people as possible to educate them about the marine

mammals of California and how to view them respectfully. We want people to develop a connection and duty to protect the marine wildlife and resources that both of us depend on. Since this is an ongoing project that was established over 10 years ago, we have seen the success in visibility and influence of people who received our previous guide, many of which have begun helping us as an organization (supportive and financial). Printing and distributing is the easiest, most impactful, and quickest way to spread awareness and educate the public at low cost with minimal in-person effort, especially within times of the pandemic and following years.

As for the future in the span of upcoming one to five years from now, this guide will be the foundation of ocean users guide because it encompasses not only the marine mammals of California, but the guidelines to observe them, and how to protect them. Realistically, since audiences are being educated on what inhabits California waters, they are going to want to protect them in their natural habitat, which may be located in a MPA or National Marine Sanctuary.

### 6. Background and history of the problem

There have been many humpback whales close to shore near Moss Landing feeding due to the large number of anchovies the last few years. There was a lot of media coverage so there were many boaters, kayakers and paddle boarders that wanted to see the whales. The problem is that most did not know about or understand the regulations in viewing marine mammals. A large percentage of people were seen to have approached too close to the humpback whales. While on the water in our research vessel, during Marine Life Studies Research Scientist program, we used the opportunity to educate them as to the distance to view marine mammals in the wild required by NOAA and handed out the Waterproof Marine Mammal Ocean Users' Guide. This worked well, as we would observe them and they stayed at the recommended distance from the whales.

The guide influenced an increase in reports of entangled whales in Monterey Bay on the toll free hotline, 877-SOS-WHALE as well. There are many factors that are considered to the increase of reports. Although the increase of more entangled whale reports could be due to an increase of fishing gear in the water and increase of whales in the same area, we believe that the guide and our public outreach is a result of more awareness. The public knows more about the whale entanglement issue and knows what to look for and who to report to. We believe that since the public knows that there is a team that will do their best to rescue a whale, they are more inclined to report what they saw and standby the whale until the trained team arrives.

### 7. How will the project be accomplished (design specifications or plans, if applicable)

The guide has already been designed, distributed, and reprinted 5 times in the past. Since it works so well, we wanted to reprint it again to distribute to more audiences. Although this project has been successful already, in the future we would like to expand this 6-panel guide to a 10-panel accordion fold to include maps and information about MPA's and the four National Marine Sanctuaries on the California coastline. Additionally, information on drone usage will be included as well. This will be a general users guide with websites (QR codes) to outline regulations for specific areas because they are not consistent throughout regions. Lastly, the guide will display information of the dangers of plastic pollution and other debris that affects our wildlife. This guide will fit in a regular brochure rack or brochure plexi holder making it advantageous and standard for ease of distribution.

7. Budget (include sufficient detail to explain use of grant monies). Specify if there are any sources of other funds committed to the proposed project.

Item	Funds	Match	Total
	Requested	Contribution	Amount
Layout/Design – No Charge	\$ 0	\$ 0	\$ 0
Printing Cost includes Sales Tax for Waterproof Marine Mammal Ocean Users' Guide	\$1,700		\$1,700
Printing Cost includes Sales Tax for Waterproof Marine Mammal Ocean Users' Guide		\$4,500	\$4,500
TOTAL AMOUNTS	\$1,700	\$4,500	\$6,200

The County of Santa Cruz Fish and Game Advisory Commission grant is the first grant submission for this project. We will be applying for a grant from the Monterey County Fish and Game Advisory Commission in December 2020, the International Fund of Animal Welfare in December 2020, and Save the Whales in January 2021.

#### 8. Timeline for completion

Waterproof Marine Mammal Ocean Users' Guide:

- October 2020 through May 2021: Secure funding to reprint the guide.
- April 2021 through July 2021: Process of laying out guide for final draft for printing.
- September 2021: Ideally, we would like to have the guide printed in August. Printing can be scheduled once we receive all funds that Marine Life Studies requested and are pending.

### 9. Background or history of your organization

Marine Life Studies is committed to protecting our ocean, whales, dolphins and other marine wildlife through research, education, conservation, and whale rescue. Our mission is to acquire and share knowledge and inspire the next generation of whale, dolphin and ocean conservationists.

Through Marine Life Studies Research Scientist Program, we collect photo IDs, along with written data and video footage of marine mammal behavior in the Monterey Bay National Marine Sanctuary. While studying cetaceans (whales, dolphins, and porpoise) with a focus on killer whales, we prioritize responding to reports of entangled whales. Techniques learned through our research boat surveys are utilized during whale disentanglement responses. Our Whale Rescue Research Vessel serves as a training platform for Whale Entanglement Team (WET)® members and new trainees. We encourage individuals from a broad range of backgrounds, including high school students, college interns, and passionate ocean advocates, to assist with our research surveys. Data collected during our research surveys and entanglement responses are shared with researchers and organizations, both nationally and internationally. Our vision is to facilitate a better understanding of the animals inhabiting and visiting the bay, including population dynamics, seasonality of species, and development of effective conservation strategies to encourage ocean stewardship.

Marine Life Studies and Fluke Foundation founded The Whale Entanglement Team (WET)® in 2006. By January 2008, we had an initial set of specialized tools made for whale disentanglement. WET® is a group of unpaid professionals assembled and trained for the purpose of supporting large whale entanglement response. All work is directed under the authority of NOAA's Marine Mammal Health and Stranding Response Program. Responders learn to understand whale behavior, situation complexity, data collection, Incident Command, vessel operations, and safety prior to participating in whale rescue events. We collect extensive data during entanglement responses that is critical to facilitate new practices, tools, and gear to mitigate future entanglements. In addition to responding to active entanglements, we have developed a new program to remove lost or abandoned fishing gear from the Monterey Bay National Marine Sanctuary (MBNMS). This collaborative effort is aimed at the detection and retrieval of derelict gear in order to prevent future entanglements, not only of whales, but turtles, sharks, fish, and other marine wildlife. Although this removal will benefit marine life directly, it will be safer for mariners and vessel operators.

Our educational programs encourage the public, especially children, to learn and care for our ocean and marine wildlife. Marine Life Studies provides free educational programs to schools, and the Boys and Girls Clubs of Monterey County. We also participate in local community events showcasing our multi-faceted marine organization. We feel that public outreach is essential to garnering environmental stewardship and conservation. Program topics range from species diversity, marine

debris, whale entanglement, and pollution. Our Take it to the Streets<sup>™</sup> program is a pro-active conservation effort that encourages coastal community cleanup in inland areas to eliminate pollution before it can reach the ocean through storm drains and local watersheds.

#### Extra Attachments:

#### This is the current Waterproof Marine Mammal Ocean Users' Guide.

#### Ocean Users' Guidelines

- Remain at least 100 yards/meters away from whales and where marine mammals come ashore.
- Remain at least 50 yards/meters away from pinnipeds at sea and other marine animals (dolphins, porpoises, sea otters, and sea turtles). If you see a stranded animal, call 24-hour toll free hotline 877-SOS-WHALE (877-767-9425).
- Do not feed, touch, ride, or swim with marine mammals or sea turtles. Avoid approaching marine mammals or sea turtles when swimming or divine.
- Avoid following behind or directly approaching in front of the animal(s). Attempt to parallel an animal's course, do not travel at speeds faster than the animal(s), and maintain a constant speed.
- Should dolphins or porpoises choose to ride the bow wave of your vessel, reduce speed gradually as necessary, and avoid sudden course changes.
- If approached by a marine mammal or sea turtle, put the engine in neutral and allow the animal to pass. Do not engage propellers until the animal(s) are observed at the surface and are clear of the vessel.
- Marine mammals and sea turtles should not be trapped between vessels or between vessels and the shore.
- Communicate with other vessel operators in the area to minimize disturbance to marine mammals.
   Wait your turn from a distance and then approach cautiously after other vessels have left.
- When marine wildlife is known to be in an area, post a look out, reduce speed, and be cautious. Marine animals may surface unpredictably at any time or location.

#### Guidelines Specific to Sea Otters

 Sea otter mothers and pups need more resting time than many other animals in order to stay healthy. Please respect an otter's needs and keep your distance. If you approach a sea otter on a kayak, surfboard, or boat, and the animal dives as a result of your approach, you have caused a disturbance.

#### Report Marine Mammals in Distress 24-hour Toll Free Hotline: 877-SOS-WHALE (877-767-9425) or Hail the United States Coast Guard on VHF CH-16

Report incidents of marine mammal harassment to NOAA's Office of Law Enforcement at 800-853-1964.

Immediate reporting of injured, entangled, stranded, or shipstruck marine mammals to the hotline is the best way to help a distressed animal. If possible, please stay with the animal while maintaining 100 yards/meters distance from the animal. Authorized personnel will guide you as what to do next.

Provide information below to help authorized responders:

- Your name and phone number (to contact you for more information)
- Date and time of sighting
- Species (if known, otherwise a general description)
- Location (be as specific as possible, include latitude and longitude if available), weather conditions/sea state
- Nature of distress (entanglement, visible injury, etc.)
- Other details: size, is the animal swimming (speed and direction heading, diving, breathing), description of entanglement, any photos or video taken, etc.
- Can you stay with the animal; if so, for how long?













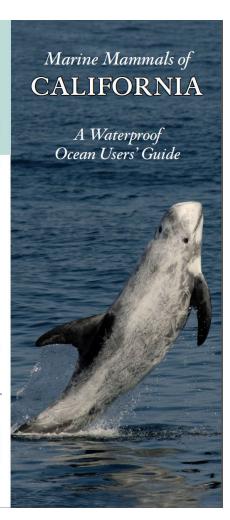


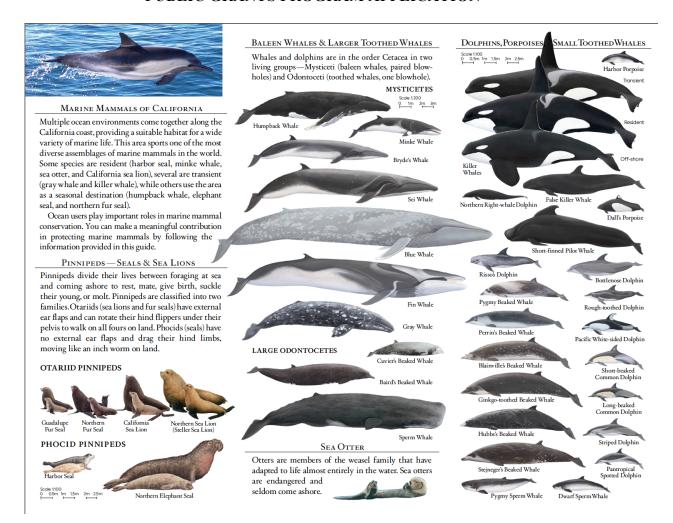






Published by Marine Life Studies. 5th Edition. Humpback whale photo by Julia O'Hem. Dolphin photos by Peggy Stap Illustrations by Pieter Folkers. A Higher Propise Design Group © 2018. Printed on waterproof recyclable material. Common dolphin photo taken under NOAA permit #15621. MorineLifeStudies.org WholeEntonglementTeom.org





1. Project name:

Watershed Rangers After-School Program

2. Name of organization or individual submitting the proposal:

Coastal Watershed Council

3. Amount of funding requested:

\$2,000

For each of the following sections, give a brief description:

4. Project Description

Threatened and endangered anadromous fish species in the San Lorenzo River watershed and Monterey Bay National Marine Sanctuary provide a local lens for 24 3<sup>rd</sup>-5<sup>th</sup> grade students to investigate the connectivity between basic watershed concepts and the interactions between natural and social systems in the Coastal Watershed Council's 6-week Watershed Rangers afterschool program. Whether completed virtually or in-person, each student will conduct research on local anadromous fish species, explore factors affecting their survival, and participate in stewardship projects to help improve steelhead trout habitat. Two Coastal Watershed Council (CWC) educators, in ongoing partnership with site coordinators at Bay View Elementary and Gault Elementary Schools, will plan and implement programs, lead program development and evaluate the success of this evidence-based, learner-centered education program.

5. Project objectives and goals

The Watershed Rangers program seeks to strengthen students' knowledge, ability, self-efficacy and commitment to identify and improve environmental conditions affecting the San Lorenzo River, the Monterey Bay National Marine Sanctuary and anadromous fish species habitat. Curriculum content will support Next Generation Science Standards (NGSS), and the Santa Cruz County Office of Education's Environmental Literacy for All initiative and the following grant objectives.

- Objective 1: By May 31, 2021, 80% of students can identify and articulate actions they have personally have taken during the course of the program that improve salmonid habitat.
- Objective 2: By May 31, 2021, 80% of students express a commitment (interest, motivation, attitude) to continue to participate in stewardship activities that support the overall health of the San Lorenzo River and Monterey Bay National Marine Sanctuary following their participation in the program.

#### 6. Background and history of the problem

In Santa Cruz County, the San Lorenzo River watershed comprises 136 square miles that drain to the Monterey Bay National Marine Sanctuary. Poor water quality in this river, caused by land-based pollution, directly impacts the health of the Sanctuary. It is listed on California's 303(d) impaired water bodies list for pathogens, nutrients and sediment. The river is the primary drinking water source for 100,000 people and 90% of the watershed is privately owned property. Therefore, it is critical that residents understand their role in enhancing watershed health, particularly as communities face and respond to the increasing challenges of climate change.

CWC recognizes that knowledge and commitment built from firsthand experience, especially in the context of one's own community and culture, is essential for achieving environmental stewardship. That's why the Watershed Rangers program is conducted through the lens of local anadromous fish. As students engage with meaningful watershed educational experiences with a focus on threatened steelhead trout in the San Lorenzo River and Sanctuary, students increase their understanding of watershed concepts, interactions between natural and human systems and the connection between human activity and environmental conditions. Moreover, the lens of threatened species provides a tangible example of the effects of challenges like climate change. Tangible examples prepare elementary school students to think about how climate challenges impact rivers, oceans and ecosystems and relate to students' own daily actions and choices.

### 7. How will the project be accomplished (design specifications or plans, if applicable)

In partnership with after-school staff at Gault Elementary and Bay View Elementary Schools, CWC will engage 24 3rd, 4th and 5th grade students in a 6-week program conducted after-school. Both school sites will have one cohort of students with each cohort engaging up to 12 students. Cohorts of this size will ensure each student gets individual attention, provides a quality experience and adheres to COVID precautions for group size should cohorts be able to meet in person. Cohorts will meet once per week, after-school to up to one hour working with CWC Education Manager Mollie Behn or CWC Environmental Educator Sam Adelson.

This fall CWC is collaborating with the After-School Coordinator at Bay View elementary to pilot the virtual after-school program. If State of California and County of Santa Cruz Health Department COVID status or COVID precautions continue to prevent after-school programs from meeting in-person visits or field-trips to the San Lorenzo River in the Winter/Spring of 2021, the program will continue to engage students in this virtual format in Spring 2021.

During the virtual after-school program, students will engage in the same watershed activities with family members. As such, the virtual program expands the reach of the education program to students and members of their household, effectively increasing the number of community members engaged in learning about anadromous fish and factors that affect their survival.

The program consists of 6 weekly activities that engage students in the five phases of an effective service-learning program: 1) investigation 2) plan and prepare for a stewardship action project 3) implement the stewardship action project 4) reflection, and 5) celebration.

#### Investigation:

Students examine the concept of a watershed and their role in the watershed through the lenses of salmonid habitat in the San Lorenzo River. Students engage in hands-on experimentation, modeling, data collection to identify local environmental issues affecting the health of anadromous fish habitat and the effects humans have in either harming or protecting the habitat. Investigations may include:

- 1. Observe native or local plants to examine how native plants are a key part of salmonid habitat.
- 2. Create a model of erosion. Observe how rain causes erosion and how erosion decreases water transparency.
- 3. Investigate outdoor surfaces to determine if they are permeable or impermeable. Explore the concept of stormwater runoff and how different surfaces will increase or decrease stormwater runoff.
- 4. Create a water filter using sand, soil and rocks to demonstrate how permeable materials help filter pollution and improve water quality for salmonids.
- 5. Create a model of a river and removing water from the river to demonstrate how human uses of water affect salmonids ability to live, grow and migrate.
- 6. Engage in activities offered by the Monterey Bay National Marine Sanctuary's Sanctuary Exploration Center focused on water quality and salmonid habitat.

### Stewardship Action Project:

To support the health of the anadromous fish habitat and the San Lorenzo River, students will have the opportunity to design their own stewardship action project or implement a project based on a suggested list of activities that help students apply knowledge gained during field investigations. Depending upon the format of the after-school program (in person or virtual) students may participate in the stewardship action project individually or collectively.

For example, in 2019, Bay View Elementary School chose to lead a community engagement project to provide a Public Service Announcement to protect steelhead habitat. Students brainstormed and selected the idea to create posters describing stewardship actions and planned to visit businesses along the San Lorenzo River in downtown Santa Cruz to ask store employees to display these posters to their customers. CWC supported students by printing their art on posters, which described actions to decrease pollution, conserve water and other actions to benefit steelhead habitat. CWC provided transportation and accompanied students on the field trip where the students led discussions with store employees as they requested to hang the posters in prominent displays in the stores. Students measured success by the rate of store acceptance to hang their posters. During reflections students shared their excitement to have their Public Service Announcements posted in local stores. Likewise, store employees expressed to CWC staff that they received many comments and questions about the posters. Many employees expressed an interest in further supporting future cohorts in their protection of the river.

Possible virtual stewardship action projects students may consider include: 1) creating a public service announcement about the importance of saving water to save fish 2) investigating storm drains and make a public service announcement to share that only water should go down the drain

3) conduct a survey of their home to identify how their families can save water to protect steelhead trout and 4) conduct a neighborhood pollution survey to identify key sources of pollution that are effecting water quality for salmonid habitat.

#### Reflection and Celebration:

Following the completion of the stewardship action project, students will evaluate their stewardship action project and the impact their action project had. Additionally, students will be guided to reflect on their experience and how they can apply the knowledge gained during the program to other situations. Upon completion of the program, students will pledge their commitment to share their new knowledge with others and will be "sworn in" as a Watershed Ranger, receiving their very own wooden badge.

#### Program Evaluation:

The evaluation of Watershed Rangers is designed to gauge the impact of the program on students' knowledge, skills, commitment and actions relating to local San Lorenzo River watershed conditions, the Monterey Bay National Marine Sanctuary and salmonid habitat. The evaluation will determine whether the program objectives described have been achieved by May 31, 2021. Evaluation data will also be used to improve the overall effectiveness of the program with a goal of providing the highest quality of environmental education. CWC's goal is to ultimately using this model to bring meaningful watershed after-school experiences to every elementary school campus within the Santa Cruz City School District.

With support from NOAA Bay and Watershed Education and Training from 2018-20, CWC hired Applied Survey Research, a social research firm specializing in school readiness assessments, community assessment projects and program evaluation to develop an evaluation plan to address Watershed Rangers program objectives. The primary evaluation data comes from student surveys. Surveys were based on a review of previous CWC survey instruments and data, as well as recent research literature on best practices regarding the content and administration of student surveys for this topic and age group.

The surveys, called Watershed Ranger Profiles, serve a dualistic purpose of allowing CWC educators to evaluate program outcomes while providing an opportunity for reflection for student participants. If the program is able to meet in person, CWC will administer the survey both at the start and end of the program. However, due to the constraints of meeting virtually, if the program is conducted online, the survey will only be administered once at the end of the program.

After the data are collected, Education Manager Mollie Behn analyzes both individual survey items and composite measures of multiple items. A composite measure is an average of a set of survey responses that collectively represent a key construct cited in the program objectives. For example, a composite measure for Objective 1 ("identify personal actions") would be created as a combination of multiple items students may have personally taken during the program to improve salmonid habitat. Thus, to measure the impact of the program on students' knowledge, attitudes, beliefs and behaviors, the evaluator will conduct quantitative analyses of related survey items and composite measures related to each of the objectives.

After the final round of data has been collected and analyzed, CWC will complete a summative report describing whether the objectives were achieved. These results will be supplemented by comments from after-school coordinators and, if available, parents about the program's impact.

7. Budget (include sufficient detail to explain use of grant monies). Specify if there are any sources of other funds committed to the proposed project.

	Funds	Match	Total
Item	Requested	Contribution	Amount
Personnel	\$2,000	\$8,585	\$10,585
Materials & Supplies: General teaching materials			
including pens, pencils, paper and printing, tape, scissors,			
clipboards, dry erase markers, lamination pages, art			
supplies, etc.	-	\$400	\$400
Materials & Supplies: Community outreach materials for			
youth-led service project	-	\$1,000	\$1,000
Travel: Staff mileage	-	\$29	\$29
Travel: 12 passenger van rental (2 vans per trip)	-	\$2,228	\$2,228
TOTAL AMOUNTS	\$2,000	\$12,242	\$14,242

The Coastal Watershed Council respectfully requests a grant of \$2,000 from the County of Santa Cruz Fish and Wildlife Advisory Committee to support staff salaries and related expenses. While this program is also supported in part by the National Oceanic and Atmospheric Administration (NOAA) Bay and Watershed Education and Training Program, increased personnel time is needed for this program. Increased personnel time allows CWC staff to adapt to the changing nature of public health guidelines related to COVID-19 and the subsequent need to adapt curriculum to a distance learning format, spend additional hours coordinating with school campus staff, and supporting families in participating in the program together. In short, your support will ensure that local youth will still receive meaningful education about native fish and wildlife habitats, regardless of the changing circumstances in education this year.

#### 8. Timeline for completion

Date	Task
January 2021	Coordination and outreach with After-School Coordinator and recruitment of
	students.
March 2021	Begin meeting with Watershed Rangers cohorts at Bay View and Gault
	Elementary Schools, either in-person or virtually using distance learning tools.
	Conduct initial student pre-survey if in person. Regularly communicate with
	After-School Coordinator to ensure program will achieve results as designed.
April 2021	Continue meeting with cohorts at Bay View and Gault Elementary Schools.
	Regularly communicate with After-School Coordinator.

May 2021	Conduct end-of program student surveys and receive feedback from parents and/or
	After-School Coordinator. Complete Watershed Rangers program.
June 2021	Analyze and review evaluation data. Prepare summary report.

### 8. Background or history of your organization

The Coastal Watershed Council (CWC), a 501(c)(3) nonprofit, was formed in 1995 in response to the declining health of watersheds connected to the Monterey Bay National Marine Sanctuary. CWC's mission is to preserve and protect coastal watersheds through stewardship, education and monitoring. Since launching it environmental education program in 2006, CWC has inspired 19,273 students to explore, enhance and protect their local watersheds. In 2017, CWC adapted its after-school curriculum to a service-learning model, the focus of CWC's current Watershed Rangers after-school curriculum.

CWC regularly coordinates with environmental education partners to ensure that CWC's programs synergize with and do not duplicate other efforts in the region. CWC works closely with the Santa Cruz County Office of Education (COE) on their Environmental Literacy For All initiative. As one of the leading environmental education organizations in Santa Cruz County, CWC partners with the COE to engage teachers in collaborative education projects to engage students in environmental literacy activities focused on watersheds and watershed health. For example, for the past two years CWC supported kindergarten and third grade teachers to develop a sequence of classroom and field activities to examine the life cycle of steelhead trout, their habitat requirements and migration patterns.

CWC respectfully requests that funding be allocated to support this program, as it is creating a model of place-based and evidenced based practices to increase students' knowledge, commitment and desire to act in stewardship of anadromous fish habitat in the San Lorenzo River and the Monterey Bay National Marine Sanctuary.

#### 1. Project name

WOLF School Salamander Monitoring Project 2020-2021

2. Name of organization or individual submitting the proposal

UCCR Web of Life Field (WOLF) School

3. Amount of funding requested

\$1200.00

For each of the following sections, give a brief description:

### 4. Project Description

WOLF School is requesting funding to assist with its long-term salamander cover-board study that the school has been conducting since 2001 on forest health in the coastal redwood ecosystem located at Camp Monte Toyon in Aptos, adjacent to Nisene Marks State Park. The study, conducted in the field by 5th-6<sup>th</sup> grade students, uses salamander presence as a surrogate for forest health. With the Covid-19 pandemic and the shelter in place keeping students from attending the WOLF School "Science Camp" Program, funding is requested to allow a staff person to continue collecting the data during students' absence from the project, in order to maintain our project and data collection until students return to full participation. The funding requested would fund 20 weeks of data collection through May 21, 2021, which, without funding, that data will not be captured and would be a great loss to our project and to science.

### 5. Project objectives and goals

Funding would allow WOLF School to meet the following goals:

- A. Collect data from salamander sites once each week for 20 weeks.
- B. Collate and enter data collected each week for 20 weeks.
- C. Report data to our lead scientist for sharing and further study.
- D. Maintaining our project throughout a period when data would not otherwise be able to be taken so maintaining the integrity of our long-term project.
- E. Maintain physical site and build more evidence through data until students return and can continue their parts in the study.

#### 6. Background and history of the problem

WOLF School is requesting funding to help maintain its long-term ecological study that is threatened by the Covid-19 shutdown and shelter in place. WOLF School has been conducting this salamander cover-board study since 2001 on forest health in the coastal

redwood ecosystem located at Camp Monte Toyon in Aptos, adjacent to Nisene Marks State Park. The study, which is conducted in the field by 5th-6<sup>th</sup> grade students, uses salamander presence as a surrogate for forest health. The methodology includes students maintaining and monitoring a network of natural-looking cover objects according to a set protocol, checking them at regular intervals for salamanders which they identify to species. Data are collated, entered into a spreadsheet, and analyzed via patch-occupancy models to evaluate the probability of encountering one or more species of salamander in the study site at various time scales. Probability of encountering the species (the "occupancy") is broadly assumed to have a positive correlation with forest health and the resilience and complexity of the redwood community at any particular site. With the Covid-19 Pandemic and the shelter in place keeping students from attending the WOLF School Program, funding is requested to allow a staff person to continue collecting the data during students' absence from site in order to maintain our project and data collection. \$1200 requested would fund 20 weeks of weekly data collection for the early part of 2021, which, without funding, will not be captured and would be a great loss of data and knowledge to our salamander study.

Students who participate in the project during their week at camp learn about taxonomy, how to identify redwood forest flora and fauna including salamander species, and also discuss how data taken from salamander monitoring including organism presence and diversity of species can indicate health of the forest.

Data from the WOLF School study were presented at the 2001 International Congress for Conservation Biology held in Hilo, Hawaii and the study at that time had been going for two years. Now 20 years later we seek to keep continuity in the data for this long-term study. Students take the data in the field, and they are also taught about the results and patterns and spend time learning about redwood forest health and what the information and study can say about the health of the redwood forest.

7. How will the project be accomplished (design specifications or plans, if applicable)

Funding requested will allow one staff person to visit the study sites each week, collect data, collate and enter it, report to our lead scientist, and prepare study sites and educational curriculum for when students are again able to participate in the study (projected in fall 2021).

Additional project survey protocols, past data, maps of study sites, and other supporting information is also available.

7. Budget (include sufficient detail to explain use of grant monies). Specify if there are any sources of other funds committed to the proposed project.

Item	Funds Requested	Match Contribution	Total Amount
	Requested	Continuation	Amount
Staff Time 20 weeks	\$1200		\$1200
Admin Time 20 weeks		\$1200	\$1200
TOTAL AMOUNTS	\$1200	\$1200	\$2400

### 8. Timeline for completion

This funding would allow WOLF School to accomplish the project goals from January 1, 2021 through May 21, 2021—approximately 20 weeks of work, and 20 weeks of data.

### 9. Background or history of your organization

UCCR Web of Life Field (WOLF) School is an environmental education school that offers outdoor science, natural history, and teambuilding programs to thousands of students and teachers each year from schools throughout Northern and Central California. WOLF School brings youth from diverse communities together at WOLF's outdoor campuses to learn about science and natural history of local ecosystems, and to teach students what it means to be stewards of the environment. WOLF School's mission is to "build respect, appreciation, and stewardship within the Web of Life."

Operating since 1989 at our Aptos Monte Toyon Camp and several other facilities, WOLF School provides public and private school students, chaperones, and teachers with 2-5 day residential learning opportunities at our campuses, as well as seasonal camps. At our outdoor

school, students live together in an educational community and learn through hands-on investigations on trails and in the forest. WOLF School programs, prior to the pandemic, reached approximately 8,000 participants each year.

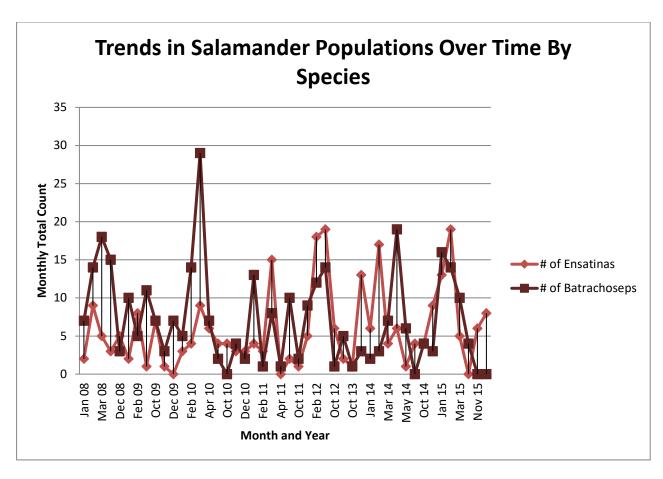
In non-COVID times, WOLF School provides K-12<sup>th</sup> grade students, teachers, and chaperones with hands-on science experiences including our salamander monitoring project and others, in the redwoods. We actively seek to offer more children the ability to experience and learn about the redwoods by offering scholarships to schools with students from underserved communities who lack access to and face financial challenges in reaching nature. Students participating in WOLF programs gain an increased awareness, knowledge, and practice stewardship of the environment through hands-on learning outdoors. Additionally, students build a community based on respect and responsibility that encourages growth of individual self-confidence, compassion, and self-esteem.

### Sample Data from WOLF School Study

Site & Boar d#	Date	Time	Weather	ENSATIN A (Yellow Eyed Salamand er)	BATRACHOS EPS (Slender Salamander)	ANEIDES (Arboreal Salamand er)	DICAMPTO DON (Giant Salamander)	Other (Salamand ers, Insects, Etc.)	Notes
PF #1	3/2/06	10:5 0	Cloudy but sunshine, rained last night	0	0	0	0		
PF #1	1/26/0 8	2:00 p	sunny and clear	0	0	0	0	0	moist wood, duff
PF #1	2/2/08	2:00 p	sunny	0	0	0	0	snail, earthworm, mites, spiders	bark, pine needle s moist
PF #1	2/5/09	11:4 5 a	cloudy/driz zly	0	0	0	0	0	
PF #1	2/18/0 9	11:0 0 a	blue skies, sunny	no data	no data	no data	no data	no data	
PF #1	10/14/ 09	11:0 0 a	drizzling, 60 F, moderate	0	0	0	0	termites	
PF #1	10/21/ 09	10:5 7 a	cloudy, cold (60's), misty	0	0	0	0	rolly polly	dry
PF #1	2/4/10	10:5 0 a	cloudy, cool	0	0	0	0	centipede	
PF #1	3/3/10	10:1 9 a	showers, possible thunder	0	0	0	0	2 spiders, 1 worm	board dry and broke easily

PF #1	11/3/1 0	11:3 0a	Sunny	0	0	0	0	0	holes and branch es damp
PF #1	12/1/1 0	10:4 5a	Sunny	0	0	0	0	0	damp

Chart Used With WOLF School Students Based on Cover Board Data



### 1. Project name

Santa Cruz County Breeding Bird Atlas

#### 2. Name of organization or individual submitting the proposal

Alex Rinkert on behalf of the Santa Cruz Bird Club

### 3. Amount of funding requested

\$1,910

For each of the following sections, give a brief description:

### 4. Project Description

What is a breeding bird atlas?

A breeding bird atlas is a publication containing everything known about the breeding birds in a region. Unlike many other resources on birds, a breeding bird atlas is truly comprehensive in its scope. An atlas contains synthesized information about the distribution, abundance, timing of breeding, and natural history of all species in a region. The specificity to a region and comprehensive scope makes breeding bird atlases indispensable to natural resource managers and conservationists, as well as students and birders.

*How is a breeding bird atlas produced?* 

Breeding bird atlases typically require five years of fieldwork to collect a sufficient amount of data for publication. Atlas fieldwork entails volunteers observing birds at parks, beaches, open spaces, and their backyard. Volunteers record the breeding behaviors they observe at these locations and submit those data to the project director. At the end of five years, this data is synthesized into a narrative accompanied by maps and other visualizations that describe the local breeding biology of each species. A part-time staff is typically hired to coordinate volunteers and guide the atlas to publication. Aside from this position, the project is powered by volunteers. Fieldwork is primarily conducted by volunteers that include both amateur birders and professional biologists. Additionally, many of the services needed during publication, such as copy editing and GIS spatial analysis, are contributed pro bono by professionals.

The Santa Cruz County Breeding Bird Atlas

In 2017, the Santa Cruz Bird Club, a 501(c)(7) non-profit, sponsored the Santa Cruz County Breeding Bird Atlas. The five-year project aims to document breeding bird populations in Santa Cruz County and engage volunteers in the process.

Each year of field work begins with trainings that instruct volunteers on how to contribute observations to the atlas. Volunteers are given a datasheet and educational resources to use

during the breeding season, and many are given an assignment on specific places to visit or species to observe by the project director. Throughout the breeding season (March–August), volunteers observe breeding behavior at parks, open spaces, beaches, and their backyards and record their observations on a datasheet. The project director regularly communicates with volunteers on what species and behaviors to look for. At the end of the breeding season, volunteers submit their datasheet to the project director. The datasheets are imported into a database, the data is analyzed, and then used in reports and outreach materials prepared by the project director. The project's Year 3 annual report can be viewed here:

https://santacruzbirdclub.org/wp-

<u>content/uploads/2019/12/Atlas\_Year3\_AnnualReport\_Final.pdf</u>. The Year 4 annual report will be available by November 1, 2020.

The project is now heading into its **fifth and final year** of field work in 2021. The success of the atlas relies on both the quantity and quality of the data contributions it receives. As such, in 2021 the Santa Cruz Bird Club plans to invest in students to collect data on underrepresented species in our dataset, and collect post-fire baseline data on breeding birds in the CZU Lightning Complex fire area.

### 5. Project objectives and goals

The atlas has the following goals:

- 1. Create a current, comprehensive resource on local breeding bird populations that can be used by both amateurs and professionals.
- 2. Identify vulnerable bird species and communities to facilitate informed conservation action.
- 3. Provide educational opportunities for the birding community that instills appreciation for birds.

The atlas has the following objectives to reach its three goals:

- 1. Acquire sufficient funds to support fieldwork and publication of the atlas.
- 2. Organize and train a large volunteer contingent to conduct fieldwork.
- 3. Conduct five years of fieldwork in Santa Cruz County from 2017–2021.
- 4. Synthesize atlas data with other data sources and interpret the results.
- 5. Publish the results in an accessible format.

The specific objectives for 2021, the fifth and final year of fieldwork, are as follows:

- 1. Offer four student internships to help improve data for underrepresented species.
- 2. Collect baseline post-fire data that can be used as a benchmark in future years.

#### 6. Background and history of the problem

Conservation practitioners and natural resource managers need current information on breeding birds to prepare environmental impact reports, allocate resources for non-native species management, and perform maintenance activities with the least impact on breeding birds.

Some recent examples demonstrate the value that a breeding bird atlas would have to local agencies. In 2016 a draft environmental impact statement was prepared for the Santa Cruz Wharf Masterplan that omitted Pigeon Guillemot and Pelagic Cormorant as species that breed on the wharf. Over a dozen pairs of Pigeon Guillemots and Pelagic Cormorants are known to breed on the wharf, yet this information is not published in an accessible resource. A breeding bird atlas would describe these two species as breeding at the wharf and delineate when exactly these species are breeding so that mitigation measures can be planned to minimize the impact from construction activities on these species.

Another example of how a breeding bird atlas can be used was illustrated in August 2019 when a large ponderosa pine at Quail Hollow Ranch County Park was slated to be removed due to apparent rot. The large tree was a granary for over 20 Acorn Woodpeckers and active woodpecker nests had been found in this specific tree. The tree removal was slated to happen in early August. Breeding bird atlas data collected between 2017–2019 shows that Acorn Woodpeckers can have active nests into early September in Santa Cruz County. In response to this information, maintenance postponed the tree removal until after the breeding season ended for Acorn Woodpeckers to reduce the impact on this species' breeding population.

Knowing the timing of when local breeding birds have active nests is critical in planning vegetation maintenance work. Extensive tree trimming and removal is ongoing throughout Santa Cruz County in response to massive wildfires across the state. Vegetation maintenance also regularly occurs throughout parks, urban, and suburban areas in the county. Having a resource that describes when is best for these activities to occur to minimize impact to breeding birds will promote informed maintenance that reduces the impact on breeding birds.

A breeding bird atlas is a resource that can be used for more than planning management and maintenance activities. An atlas serves as the foundation for scientific inquiry for ecological studies. Students and researchers use breeding bird atlases to evaluate changes in breeding bird populations. An atlas also serves as a general reference for the community and helps increase awareness and appreciation of breeding birds and the habitats they use. Ultimately, an informed community leads to greater support for conservation measures.

#### 7. How will the project be accomplished (design specifications or plans, if applicable)

#### Hire and train four student interns to increase the capacity of the atlas.

Since 2019, the atlas has hired and trained seven student interns to collect data on breeding birds. This program offers the students valuable experience they can use to further their careers in biology, and the data they contribute to the atlas improves our understanding of underrepresented species in our dataset. In previous years, interns have documented an increase in breeding Great Egrets and a catastrophic decrease in breeding Pelagic Cormorants, found a new breeding location for Black Swift, defined when the breeding season is for Great-tailed Grackle and Purple Martin, and spent nearly 300 hours filling in gaps in coverage. Student interns have proven to be indispensable to the project, and increasing our capacity to hire more interns will help us achieve our objective of increasing the quantity and quality of the data we collect in 2021.

A job posting will be sent to the Biology and Environmental Studies departments at UCSC and the Santa Cruz Bird Club membership in February. Two interns will be hired in April for the spring season, and two interns will be hired in June for the summer season. The interns will be expected to work up to 60 hours during the 10-week position. The project director will train and coordinate the students throughout the internship.

### Collect baseline data on breeding birds in the CZU Lightning Complex fire area.

In August 2020, the CZU Lightning Complex fire burned close to 20% of the atlas project area. This fire, the largest on record in Santa Cruz County, will have profound impacts on the birds in the Santa Cruz Mountains. As larger and more destructive wildfires become more common in California, the landscape and how it is managed will change. It is imperative we understand the effects that catastrophic wildfires have on a variety of ecosystems. Establishing a baseline dataset in burned areas is a critical first step in accomplishing this. This dataset can be revisited in the future to identify what birds are at risk from fires and more generally how the bird community changes over time.

In line with the atlas objective of improving the quantity and quality of the data we collect in 2021, we will establish a baseline dataset that investigates how the CZU Lightning Complex fire affected breeding birds in Santa Cruz County. Point-count surveys are a cost-effective method at inventorying birds across a large area. Four point-count survey routes will be delineated on established roads and trails in burned areas. An additional two survey routes will be established in nearby areas to serve as a control. Two major habitat types will be sampled: mixed evergreen forest and oakmadrone woodland. Each habitat type will have two survey routes in burned areas, and one in an unburned area to serve as a control. Each route will be surveyed once in June, at the peak of the breeding season, by the project director. The survey data will be compiled and a short report will be prepared that summarizes the survey results.

Volunteers spent four years observing birds in the areas that are now burned, providing an adequate pre-fire dataset. With a post-fire baseline dataset, we can make initial assessments on how the bird communities have changed, and predict future changes in these areas. Ultimately, this post-fire dataset can be used as a measuring stick in future years as the habitats slowly recover from the fire.

7. **Budget** (include sufficient detail to explain use of grant monies). Specify if there are any sources of other funds committed to the proposed project.

<b>EXPENSE</b>	QUANTITY	<b>RATE</b>	REQUESTED	MATCHED	<b>TOTAL</b>
<b>Student Internships</b>	Positions				
Intern stipends	4	\$325	\$650	\$650	\$1,300
				Subtotal	\$1,300
<b>Post-fire Surveys</b>	Hours				
Planning	15	\$35	\$0	\$525	\$525
Surveys	36	\$35	\$1,260	\$0	\$1,260
Report	25	\$35	\$0	\$875	\$875
				Subtotal	\$2,310
				Total Requested	\$1,910
			_	Total Matched	\$2,050
			$\mathbf{G}$	RAND TOTAL	\$3,960

**Student Internships:** we are requesting funding for four internship positions. Interns will be provided a stipend of \$325 to cover transportation expenses and help offset living expenses during the internship. **Post-fire Surveys:** planning will entail identifying on maps and ground-truthing survey routes, conducting six surveys (6 hr/survey), and preparing a report summarizing the results. We are requesting funding for the on-the-ground survey work.

An anonymous donor who has contributed to the breeding bird atlas since 2017 will sponsor half of the intern stipends and the administrative aspect (planning and report) of the post-fire surveys.

### 8. Timeline for completion

Date	Student Internships
Feb	Submit spring position announcement to UCSC and bird club membership.
Apr	Hire 2 students for the spring internship.
May	Submit summer position announcement to UCSC and bird club membership.
June	Hire 2 students for the summer internship.
Oct	Submit report to Fish and Wildlife Advisory Committee.
	·

Date	Post-fire Surveys
Feb	Identify and ground-truth survey routes.
Jun	Conduct 6 surveys in burned and unburned areas.
Oct	Submit report to Fish and Wildlife Advisory Committee.

### 9. Background or history of your organization

The Santa Cruz Bird Club was organized in 1956 with the purpose of uniting those with a common interest in wild birds, so that they may better study and conserve them. The club's membership includes over 300 members of the community.

Each year the club offers over 30 free field trips and monthly talks related to birds, all open to the public. These events are currently on hold due to COVID-19 restrictions, but will resume in the future. The club sponsors the annual Santa Cruz Christmas Bird Count, which contributes its results to the National Audubon Society database. Community outreach events the club has helped sponsor include the World Migratory Bird Day at Natural Bridges State Beach and the Monterey Bay Birding Festival. In 2017 the club launched the Santa Cruz Count Breeding Bird Atlas and partnered with the San Francisco Bay Bird Observatory, a 501(c)(3) non-profit, to support the project.

The club is a voice for birds on conservation issues by representing their interests in local land use and development activities. Some of the issues the club has weighed in on include: Santa Cruz City and Santa Cruz County Parks Master Plans, bird-friendly building design standards, banning anticoagulant poisons, the impacts of the Live Oak School stadium lighting and San Lorenzo River project lighting, Santa Cruz Wharf Master Plan, San Lorenzo River Flood Control plan, UCSC East Meadow Development Project, drone use at public parks, and College Lake water impoundment proposal.

Historically, the Santa Cruz Bird Club actively campaigned to protect both Schwan Lake and Neary Lagoon as bird sanctuaries. The club began the incredibly successful Nest Box Program for Western Bluebirds and other cavity-nesters at Quail Hollow County Park, resulting in 162 bluebirds and 1,149 birds of other species fledging since 2002! The effort at Quail Hollow Ranch helped the species recover from steep population declines in the county. Several other nest box projects have begun at UCSC, Soquel, and Asilomar that draw on the Quail Hollow program.

- 1. Project name. The Cannonball Express STUDENT Version
- 2. Name of organizations and individual submitting the proposal "The Cannonball Express", CMS and Steve Kennedy

### 3. \$2,000

For each of the following sections, give a brief description.

#### 4. Project Description

The STUDENT version of "The Cannonball Express" is an education program for school age children related to fish and wildlife which fully complies with Fish and Game Code 13103(a). We are again offering the County a \$2,000 solution to a multi-billion dollar environmental problem.

We take a "let by ones be by gones" approach re: our previous proposals.

Most of this proposal is a carbon copy of my 2019 proposal.

We would like to work with the F&W Commissioners to write a proposal that is acceptable to the County Supervisors on the first pass. i.e.

We will need help identifying suitable filming locations and borrowing a sheep from the 4H Club.

We need help identifying suitable funding partners in the charitable community and in corporate America.

We need help identifying the half dozen most suitable scientific principles of conservation that will be the back bone of this video.

We don't regard our video script as something that is written in stone.

We need help working through this pandemic with acceptable social distancing protocols and wipe down procedures for talent and crew.

This 28.5 minute, environmental education

video will use vignettes of neighbors-helping-neighbors

to inspire students in grades 5-8 to enter

the training and education pipeline for the jobs of tomorrow.

These jobs will help us prepare for, prevent and mitigate, the CZU type wildfires that damage the environment, directly and indirectly.

### 5. Project objectives and goals

After watching this video, as part of formal supervised curriculum in the schools and/or as part of distance learning at home, we believe that kids will aspire to jobs in the public and private sector that will help citizens of Santa Cruz County prepare for,

prevent and mitigate, the kind of deadly and environmentally destructive, suburban forest fires that have...

- caused grid shut downs of up to five days,
- temporarily closed forests to hiking hunting and camping,
- aggravated breathing difficulties for many thousand people,
- needlessly created a huge demand for local forest products
- polluted water tables, streams and reservoirs, to the detriment of fish, wildlife and people
  - destroyed valuable nature study facilities and treasured park museums

The objective of this project is to provide an educational tool for use in the classroom and to promote a greater understanding of wildfire and it's effects on us. This video is intended to serve as part of the environmental community's video tool kit.

By shedding light on this amazing phenomena, providing an historical background, and by offering best practices for living with wildfire, this video will help people coexist with wildfire for years to come, as the target audience enters the workforce in their chosen professions.

Our goal is to cablecast this video on local cable television, to post it online, and most importantly, to offer the video to schools in the County, for educational use.

Without belaboring the point, our goal is to help create a critical mass of trained people who can find new solutions to the age old problem of the suburban forest fire.

It follows that more programatic wildlends management will also improve dry season stream.

It follows, that more pragmatic wildlands management will also improve dry season stream flows and enhance wildlife populations.

Our goal is to cablecast this video on local cable television, to post it online at

www.canonbal.org

www.YouTube.com

#### www.vimeo.com

and most importantly, to offer the video to schools in the County, for educational use.

### 6. Background and history of the problem

The problem of neighborhood devouring, suburban forest fires

had been dismissed as an "act of God" or as a "freak phenomena of nature" for over a hundred years. Beginning in 1910 and until recently, the United States Forest Service zealously pursued fire exclusion policies in an attempt to exclude wildfire from our Western forests. (CALFIRE copied these policies and I willingly assisted them during the 1977 and 1978 fire seasons.)

These policies have resulted in forests thick with fuel. Meanwhile, suburbs have been expanding into those forests and many houses have been built in places beyond the reach of local fire departments.

Of course, electrical power lines followed this expansion, creating a sprawling network that is now in dire need of upgrades and repairs.

Drought, SODS, exotic invasive trees like eucalyptus and climate change, have

While wildfire in a fire adapted ecosystem is generally beneficial, wildfire in suburbia can release a huge amount of toxic chemicals into the air and waters. This is generally bad for the environment, fish and wildlife.

Meanwhile, in the California schools, students wear bullet resistant backpacks, do drugs, lack career goals, fret over fires in the rain forests of the Amazon (while the fire adapted forests of Northern California desperately need regular burning) and get nearly useless college degrees in the liberal arts, with borrowed money. Many of them suffer from nature deprivation syndrome, are disconnected from society and are bewildered by the educational challenges in front of them.

made the problem worse.

Responsible gun ownership is not being taught, as the number of kids engaged in recreational hunting continues to decline.

A political counterweight to the excessive planting of wine grapes, heavy chemical use in agriculture and subsequent ground

water pumping is disappearing, as fewer young people engage in recreational fishing in rivers and streams. Many of these

young students apparently suffer from nature deprivation syndrome, are alienated from society and are bewildered by the

educational opportunities and challenges in front of them.

No wonder these kids then, pursue only occasionally useful college degrees in the liberal arts.

Some of those at-risk kids could be motivated to take a role in solving a multi-faceted environmental problem that will take a concerted effort by our entire society. There are 50 occupations

that will have a say in how we deal with the issue of suburban forest fires. If I could name 25 of them, then I'd be a genius.

A few of these occupations are....

- A) drone operator
- B) vegetation manager, goat wrangler
- C) fire fighter, fire marshal, home insurance inspector, fire insurance salesman, claims manager
- D) prescribed burn planner, weather forecaster, smoke spread modeler, watershed manager
- E) IBEW high voltage linesperson, solar panel installer, solar appointment canvasser, roofer
- F) weed warrior, urban forester, tree trimmer, landscaper, botanist
- G) wildlife biologist, trail cam operator, game warden
- H) film maker

Following the August 2020 lightning storm that ignited the CZU Fire, over a thousand units of housing in Santa Cruz County went up in smoke.

The Santa Cruz County schools need to do something to stop the loss of affordable housing for families, teachers and staff.

Thus, sooner or later they will climb aboard The Cannonball Express.

Flooding this winter in downtown Santa Cruz, caused by the loss of thousands of acres of forest cover during the CZU fire, will further

deprive low income families of additional hundreds of units of housing, with predictable losses of enrollment in the schools.

While the County Office of Education may never formally express an interest in seeing this video..... they need this video.

The electricians' union, IBEW Local 234, has expressed an interest in seeing our finished video because they believe

that it will encourage more candidates to apply for the Inside Wireman Apprenticeship Program and help build a more robust grid.

### 7. How will the project be accomplished (design specifications or plans, if applicable)

This video will be created by a team of consultants and experts in education, film making, web site creation and related occupations.

Production of the video will include the creation of rough drafts of the video (without titling and music) which will be evaluated and commented on, by stakeholders including fire professionals, foresters, PG&E linemen, drone pilots, insurance salespeople, urban planners, weather forecasters and real estate agents.

This critique may result in script changes and returning to the field for re-shoots of one or more

scenes.

We have budgeted for this. Our efforts will be aided by students, volunteers and SAG listed talent.

We are open to script suggestions from the Fish & Game Commissioners and have submitted a list of items to the F&W with our proposal that we would like help with.

8. (sic)

7. Budget (include sufficient detail to explain use of grant monies). Specify if there are any sources of other funds committed to the proposed project.

We will seek crowd sourced funding on line from www.GoFundMe.com and www.IndieGoGo.com for the Match Contribution.

Ditto Donor Advised Funds from charitable foundations.

Item	F&W Funds Requested	Match Contribution	Total Amount
Pre-Production (including 10% of County grant and 10% of all Match Contributions for our fiscal agent's administrative fee)	\$500	\$2,000	\$2,500
Equipment Rental (commercial and cable access channel)	\$300	\$600	\$900

Camera Operator (1099 skilled labor w personal equipment)	\$600	\$1,200	\$1,800
Drone Operation (1099 skilled labor with personal equipment)	\$100	\$1,200	\$1,300
Editing & Titling (1099 skilled labor with personal equipment)	\$250	\$1,200	\$1,450
Music (scoring) (1099 skilled labor with personal equipment)	\$50	\$1,000	\$1,050
7 Actors Wages at \$125 per day x 3 (Screen Actors Guild Wages – SAG Talent)	\$100	\$825	\$925
Insurance	\$100	\$1,575	\$1,675
TOTAL AMOUNTS	\$2,000	\$9,600	\$11,600

March 2021 - pre-production
June 2021 - production
August 2021 - titling, scoring and editing
September 2021 - delivery of final draft, DVD's and links to stakeholders.
October 2021 – submission of our final report to the Fish & Game Commission

### 9. Background or history of your organization

Steve Kennedy began work on the ADULT - HOMEOWNER version of "The Cannonball Express" in 1993, following the big fire in the Oakland-Berkeley hills in 1991.

Discussions with the head of the San Mateo County Fire Safe Committee, Dave Soho, in Felton, that same year, were ended after creative differences. The Fire Safe Committee would eventually put Smokey in drag, call her "Bonnie the Bear" and release the children's video, "Bear Facts", just prior to the 1995 Mt Vision Fire in Point Reyes, which burned 45 homes. This video is available upon request.

After electing to work independently, an extensive web site (www.canonbal.org) was created around Steve's script, with the help of a cash contribution from ROMIC Corporation.

The screenplay was adapted into a screenplay and then a storyboard was created for the Producer/Director, cast and crew.

The Botanist's Scene was filmed in October of 2000 and won a prize at Palo Alto's Greenlight Earth Film Festival.

The other 3 scenes were filmed in 2001 and the video was posted on line at <a href="www.canonbal.org">www.canonbal.org</a> where it has been viewed thousands of times by a global audience. Additional video clips of the Angora Fire were added in 2008

Over sixty people were involved in the creation of the supporting web site and the production of the adult/homeowner version of The Cannonball Express. The names of these paid staffers and volunteers are listed on our web site at <a href="www.canonbal.org">www.canonbal.org</a> in the link entitled, "About Us".

The adult/homeowner version of the video was cablecast from several community access cable TV stations in Santa Cruz, the Wine Country and the Bay Area and as far away as North Carolina.

This version was presented several times in private homes and community centers in the SF Bay Area

The author went back to the drawing board after the devastating 2017 wildfires in the Wine Country.

The result of that creative effort is the STUDENT version of "The Cannonball Express". Many things, including story and character development, learned during the the creation and promotion of the adult/homeowner version, were poured into the script of the STUDENT version.

The STUDENT version of our video has received a beautiful letter of interest from a public school teacher, Allan Fisch, who has a background as an executive in Hollywood.

This letter is posted on line at www.canonbal.org and can be read by clicking on "Endorsements" and then opening the PDF on our chart.

We are currently in search of additional letters of interest from teachers and Union leaders to ensure an interested audience, possible matching funds and the most bang for your buck.

Steve Kennedy was a voice and data electrician with IBEW Local 617.

He retired in March of 2020 from a career in construction.

He has embarked on an encore career in film making.

Steve holds a Bachelor of Arts degree in English and Political Science from

California State University Stanislaus.

Steve worked for CALFIRE/CDF in 1977 and 1978 in Mendocino County and saw major fires at St Helena, Mt Diablo, Grass Valley and Eagle Lake, in August of 1977.

For more information on Steve's education, technical background and work experience, please see "Author's Credentials" at www.canonbal.org

### **Public Comment on the FWAC Public Grants Program**

Dear Kristen, Nathan & Members of the Commission,

I look forward to the Fish & Wildlife Commission meeting next month.

As you know, I was turned down for video production funding at the November 7th, 2019 Commission meeting.

I have no hard feelings about your decision.

Since then, Santa Cruz County has been hit hard again by lightning sparked wildfires and by smoke from out-of-county wildfires. There is at least 6 weeks of fire season still ahead of us and I still consider suburban forest fires to be a trillion dollar conservation issue, with many opportunities for youth education in formal, supervised curriculum.

I would like to hold a pre-application dialog with the Commission to determine your preferences for an application for video production funding, above and beyond what is posted through the RFP and web site, i.e.

- 1) is there a need for more than one "Letter of Recommendation" for an educational project?
- 2) Do you want additional support from the head of the County Outdoor Education Program?
- 3) Will you accept written support from your IBEW Local, representing the building trades?
- 4) Do you want a "buy in" from private schools in the County? If so, which one(s) and why?
- 5) Which scientific principles of conservation do you want specifically brought up in the dialog in our video script?
- 6) Do you have a preference for funding partners in the creation of this video? Are you willing to work with...
- 1) Community Foundation of Santa Cruz County?
- 2) Corporations including garden tool and drone manufacturers?
- 3) Crowd based funders such as IndieGoGo and GoFundMe.com?
- 4) Another County F&W Commission such as Monterrey or San Mateo County?

Please bear in mind that quality video runs about \$1,000 per minute and we envision a 30 minute video.

So we suggest that matching funds are a necessary evil, based on the total grant dollars that you have to disburse.

- 7) Do you want some portion of this video production work to go to youth, women or minorities? Do you want me to hire a videographer living in Santa Cruz County?
- 8) The F&W project application is generic and doesn't fit the needs of a video production proposal, the budget for which is almost exclusively "skilled labor". May I submit a custom proposal that is far better suited for the accounting needs of a video project?

- 9) What percentage of the bill for cast and crew do you want going to Santa Cruz County residents?
- 10) What is the fair trade value for a sheep owned by a Santa Cruz County 4H Club member, for a day's use on the set, including transportation and wrangling?
- 11) Will having a certified EMT on the set to take temperatures, wipe down equipment and maintain social distance, satisfy COVID restrictions?

Again, I would like to hold an informal discussion with the Commission to craft a proposal that sails through on the first attempt. There are a lot of moving parts in this proposal due to the large budget and complexity of the project.

Please RSVP,

Sincerely,

Steve Kennedy Executive Producer The Cannonball Express (650) 274-2709