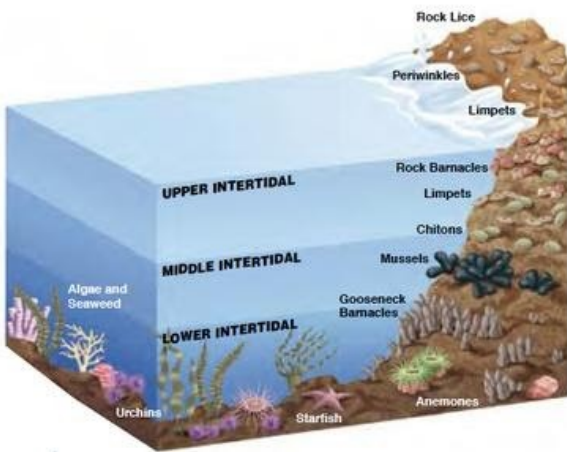


Quarterly News

ENVIRONMENTAL NEWS

California's Rocky Reefs

By Kyle Fructuoso



Intertidal Zone Delineation. Photo Credits: Intertidal Areas

The most common depiction of an underwater reef is usually the tropical, warm water, aesthetically beautiful coral reef. However, non-tropical areas with cold water are home to seldomly pictured, ecologically important rock reefs. The rock reefs of California aren't as glamorous, but they serve as incredibly important structures for aquatic ecosystems. According to the National Oceanic and Atmospheric Administration, rock reefs come in multiple forms: intertidal shore reefs, submerged near shore reefs, and deep-water reefs. Each form has different respective biological communities associated with each. **Intertidal shore reefs** are rocky outcrops that can be completely submerged during high tide and exposed with pockets of water during low tide. These are classic tide pools that provide home and refuge for species like periwinkle snails, fingernail limpets, acorn barnacles, buckshot barnacles, gooseneck barnacles, mussels, crabs, aggregating anemones, sea stars, hermit crabs, sea hares, sunburst anemones, and surf grass. The **submerged near shore reefs** describe underwater rock reefs that still have enough light for aquatic plant photosynthesis to occur. Many species like the Garibaldi fish, California Spiny lobster, black rockfish, red abalone, sunflower star, and sea urchins inhabit this submerged type of habitat. Lastly, **deep-water reefs** are rock reefs that do not receive enough light for photosynthesis. Various species of immobile invertebrates, slow growing deep sea corals like the strawberry anemone and barrel sponge, as well as fish like the yellowtail rockfish usually dwell within the deep-water reefs.

California's rocky reefs are critical ecosystems, structure, and nurseries for our coastal waters. Regardless of classification, all rock reefs serve essential biological importance for aquatic life. Rock

Spotlight Species

Southwestern Pond Turtle

By Morgan Martin

To bask on a warm log might be the loveliest of afternoon activities. The Southwestern Pond Turtle, or *Actinemys pallida*, lives such a lavish lifestyle in California's freshwater ecosystems. In fact, this species is the only pond turtle native to California that lives in freshwater! Native to the entire American west coast, the southwestern pond turtle is most often found in southern California. They enjoy ponds, small lakes, reservoirs, and slow-moving streams with abundant aquatic vegetation in low to medium elevation regions. This turtle is roughly the size of a dinner plate and has brown or olive shells with bright yellow eyes—a real looker.

Within these slow-moving freshwater ecosystems, the Southwestern Pond Turtle interacts with an assortment of different organisms. They will eat aquatic invertebrates like dragonflies (*Anisoptera*), flies (*Diptera* order), water boatmen (*Corixidae*), and others. They are omnivores who consume aquatic vegetation like Rushes (*Juncus* spp.), Sedges (*Carex* spp.), Bulrush (*Scirpus* spp.) and more. Occasionally, they will eat carrion; they are truly an opportunistic animal. They spend most of their time eating, swimming, and enjoying the California weather.

Although most Southwestern Pond Turtles living in southern California are active year around, some choose to hibernate for the winter. They will spend many months clustered in a shallow section of the pond to conserve energy during cold months. By slowing their metabolic processes they can hibernate until their body recognizes it's warm enough to wake. They are mammals that use cloacal respiration, or pumping water through the cloaca through pouches that function similar to gills and extracting oxygen from the water and releasing carbon monoxide. This turtle nap may sound wonderful, but these periods of rest make them vulnerable to natural disasters and predators.



Close-up look at a Southwestern pond turtle. Photo By: Barry Nerhus of Endemic Environmental

Their slow reproduction cycles and small appetite are perfect for maintaining a balanced ecosystem; they keep small organism populations in check without over hunting

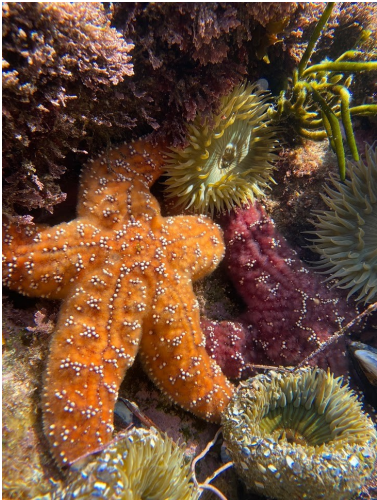
but never reproduce enough to overwhelm the ecosystem. While they have no native predators, non-native predators like coyotes (*Canis latrans*) and raccoons (*Procyon lotor*) are putting the Southwestern Pond Turtles population at risk.

The California ecosystem has evolved to resist wildfires, and the Southwestern Pond Turtles are no different. They are durable creatures with the

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reefs provide a solid, immovable, and permanent base structure for marine animals and plants to attach and grow on, encouraging a diverse kelp forest ecosystem. Without rock reefs, California's key-



Underwater image featuring Ochre sea stars and sunburst anemones.
Photo Credits: Michaela Coats

stone habitats of tide pools and kelp forests wouldn't exist. Hundreds of marine species of plants and animals would no longer thrive without the availability of California's rock reefs. The rock reefs also provide shelter and hiding spots for marine life to hide from predators. This allows young aquatic species to live and grow safely until they are ready to leave into the open ocean.

The most common threats to rock reefs are often anthropogenic activities and sources. The intertidal shore reefs are threatened by curious beachgoers displacing rocks, polluting waters with trash and chemicals, as well as disturbing marine life within the tide pools. The submerged near shore reefs and deep-water reefs are threatened by boat anchors, lost fishing gear such as ghost hooks and nets, and pollution. All these human impacts can physically or chemically degrade the structure of the reefs and lead to eventual loss of habitat and marine life.

In efforts to make additional strides towards conserving California's rock reefs, the creation of artificial rock reefs has become popularized around the coast to encourage more marine habitat. Based on the reports of the California Department of Fish and Wildlife, artificial rock reefs have been implemented in California's coast since 1958 and have served as new available habitat for thousands of marine plants and animals since. Artificial rock reefs are usually composed of – you guessed it – rocks. These rocks are typically chunks larger than basketballs and are intended to act as a place for kelp to anchor their holdfasts. From Atascadero all the way to International Beach between San Diego and



Rocky outcrops that form tide pools.
Photo Credits: OC Habitats

ability to spend long periods underwater; however, rising temperatures over the last 100 years have created hotter and drier seasons that exacerbate wildfires. With intensified heat of wildfires posing one threat, the turtles are also at risk from suffocating in the mudslides that occur when fire destabilizes the land. Both pose a direct threat to Southwestern Pond Turtles.

Human activity has directly impacted Southwestern Pond Turtles too, expanding urbanization threatens to destroy the ecosystem in favor of strip malls and cul de sacs. Besides limiting and destroying natural land, expanding construction brings long-term dangers from human activity like trash, busy roads and pollution. Pond turtles are also vulnerable to water quality, rain run-off leading to streams and ponds carrying pesticides and fertilizers from local lawns and gardens. These toxic chemicals are extremely difficult to remove and poison the Southwestern Pond Turtle slowly.

To protect the Southwestern Pond Turtle is to protect the California slow-water ecosystems. These freshwater communities are fragile and preservation efforts have been effective, but scientists worry if the worst is yet to come. The damage caused by fires, poor water quality, invasive species, human destruction, and construction can be detrimental to all species, not just the beautiful Southwestern Pond Turtle.



Biologists wading in the slow-moving San Gabriel river in an effort to rescue Southwestern pond turtles following the Bobcat Fire.
Photo Credit: Barry Nerhus

Recently, there have been direct and indirect efforts to protect the Southwestern Pond Turtle and their habitat. The San Diego Zoo has agreed to house a refugee population of Southwestern Pond Turtles after being collected following the Bobcat Fire. While none suffered burns or damage, their stay may be longer than planned due as the fire decimated the ecosystem which creates a high risk for lethal mudslides. Fortunately, the San Diego Zoo is committed to helping the species in any way. Long-term help is coming too, carbon emissions from factories, coal, transportation and livestock production have warmed Earth's temperatures for decades and disrupted the natural weather patterns worldwide. This directly harms ecosystems like the Southwestern Pond Turtle because they are unable to adjust to increased severity in droughts, wildfires, and mudslides. In March 2021, the California Senate plans to begin hearing the Climate Corporate Accountability Act, or 'Senate Bill 260', which will work to hold large corporations transparent and accountable for their carbon emissions. Other national policies will be implemented too: Paris Climate Accord, conserve at least 30% of federal



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San Clemente Artificial Rock Reef. Photo Credit: San Clemente Times

Mexico, Southern California's coastline is riddled with giant artificial rock reefs, some stretching hundreds of acres containing tens of thousands of tons of rocks. Within just Orange County, you can find artificial reefs at Bolsa Chica, Newport, and four along Huntington. An artificial reef created off the coast of San Clemente was made as a mitigation project from the San Onofre Nuclear Generating Station. This 174-acre reef was made with hopes of restoring the offshore kelp beds and providing a place for marine animals and plants to thrive. In March 2019, a 210-acre extension of this artificial reef was approved by the California Coastal Commission due to the success of the kelp forest rebound as well as the opportunity to create further marine animal habitat.

These rock reefs are essential for thousands of marine species and deserve recognition and protection. It is important that we protect our rock reefs through safe and mindful boating, fishing, and exploration practices. While the California Coastal Commission and California Department of Fish and Wildlife work to create additional artificial rock reefs for the future, there are ways that the general public can help. You can aid in the creation of these reefs, as well as the preservation and conservation of natural rock reefs, through programs like the Fish Reef Project or Reef Check Worldwide, which accept donations online to support aquatic fish and wildlife in addition to surveying these underwater habitats. If time is what you have to offer, you can volunteer at a variety of organizations such as OC Habitats, OC Coastkeepers, Surfrider Foundation, and Laguna Ocean Foundation in their efforts to protect marine habitats along the Orange County Coast.



Artificial Reef Construction Equipment.
Photo Credit: Vantuna Research Group

lands and oceans by 2030, and a Civilian Climate Corps Initiative to employ Americans to conserve land and water. On a local level, we at OC Habitats work year-round to educate our community on the importance of healthy ecosystems and species, including the Southwestern Pond Turtles and their vital ecosystems. Through education, outreach and restoration of Orange County's natural ecosystems we can help the Southwestern Pond Turtle.

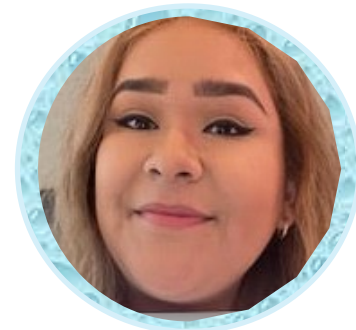
There are lots of great reasons to get involved in helping preserve California ponds and streams and the native species that live there. Whether you are an expert in the field of environmental science or just someone who wants to get involved in the preservation of your community, there are many great opportunities to help out. You can find more information regarding habitat protection in Orange County and how to get involved at the OC Habitats website www.ochabitats.org



Barry Nerhus, President of Endemic Environmental, examining a Southwestern pond turtle rescued from the San Gabriel River. Photo Credit: Barry Nerhus

Volunteer of the Month

January 2021



Tania Garcia joined our internship team this summer (2020) and is at the tail end of her degree at California State University, Fullerton. As an intern, her first project was creating a Sustainability Happy Hour, which gave a great overview of the choices we all make in our daily lives and the impacts these choices make on our local and global environment. Many of our volunteers and interns have been able to use Tania's work on sustainability as a building block for their own projects and presentations. In September, Tania became a vital part of our restoration work at the Upper Newport Bay and Huntington Beach Wetlands Conservatory. She has shown herself to be a strong yet compassionate leader in this program through

Environmental Laws and Executive Orders

By Jackie Tran



Headquarters of the United States EPA. Photo Credit: Kristoffer Tripplaar

Under the United States Environmental Protection Agency (EPA), there are a number of laws that serve as a foundation for environmental and public health protection. The EPA is a regulatory agency, meaning that the EPA is an independent, governmental body that sets standards for environmental and public health. Congress authorizes the EPA to write regulations necessary to implement environmental laws. This regulatory process is influenced by different laws and executive orders that the EPA administers for the protection of human health and the environment.

Some of the environmental policies and laws passed in the United States over time include policies that we at OC Habitats may deal with directly in our education, habitat monitoring, and programs:

- **Beaches Environmental Assessment and Coastal Health Act (BEACH):** This policy allows the EPA to award grants for monitoring and public awareness programs as well as coastal testing.
- **Clean Air Act (CAA):** This policy authorizes the EPA to establish National Ambient Air Quality Standards (NAAQS) and regulates air pollutant emissions, such as petroleum refineries or manufacturing plants that emit the six criteria air pollutants of carbon monoxide, ground-level ozone, lead, nitrogen oxides, particulate matter, and sulfur dioxide.
- **Clean Water Act (CWA):** This policy establishes regulations for water quality standards and for discharging pollutants into waterways. For example, industrial facilities must obtain permits if their discharges go directly into surface waters.
- **Endangered Species Act (ESA):** This policy promotes the conservation of threatened and endangered species and their habitats. This act

management of our restoration team throughout the fall and winter. She has a deep love for hiking and has shared her experience and passion through her work in the field and in her news and blog articles. In addition to her work in restoration, she became a key player in our newest outreach program with the Orange County Girl Scouts. She helped to develop and implement this new program with great results. She not only helped to develop the program but also helped with the administration of this event by attending meetings, sending vital correspondence, and organizing our program presentation. As we enter into 2021 and she wraps up her internship, she is working with our next set of interns to transition them into a leadership role for our restoration work and our outreach work with the Girl Scouts. Tania has become a valued team member of OC Habitats through all her work well beyond those described here. She has proven to be a great teammate, hard-working, and inspirational in her passion for conserving the health of our planet.

February 2021



Marco Prado joined our team last year (2020) and has proven to be an ambitious, dependable, and friendly volunteer. He is currently attending CSUF with the intention of attaining his Bachelor's degree while working at the Irvine Regional Boat Rental. Marco has joined us to get some hands-on experience in the environmental field and hopes to work directly with wildlife in his future career. With all of the opportunities given to him, Marco has taken them all in stride with an admirable positive attitude. He has proven that he is a hard worker by helping our team in our restoration programs by attending our weekly events in UNB and HBWC. Marco has also contributed to our education program by participating in our tide pool education video series. Eager to help, Marco quickly learns how to adapt to new situations such as traversing through the tide pools to be filmed and assisting in administrative and creative tasks by learning how to edit videos in a short amount of time. Marco has become a valued volunteer of OC Habitats through all of his work well beyond described here. We look forward to seeing what Marco's future holds and hope that he will always stay connected with us in some way as he moves forward towards his professional goals.

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works with a variety of different agencies in federal, state, and local governments. Examples of agencies include the U.S. Fish and Wildlife Service and the U.S. National Oceanic and Atmospheric Administration (NOAA) Fisheries Services. For example, through permits, registration, and regulations, the Endangered Species Act requires that all federal agencies make sure that any authorized action carried out will not jeopardize the existence of listed species or modify any designated critical habitat.

- **National Environmental Policy Act (NEPA):** This policy regulates federal projects to give environmental consideration prior to construction of projects such as airports, buildings, military complexes, highways, parkland purchases, and other proposed federal activities.



As of February 2021, President Biden has signed 32 executive orders, with many of the executive orders committed towards tackling climate change and creating an equitable, clean energy, and sustainable future. When we look at the Biden-Harris Administration's promise to tackle climate change and creating an equitable, sustainable future, we see immediate executive action through the rejoining of the Paris Agreement and the review of harmful rollbacks of environmental protection standards. Environmental executive orders executed by Biden aim for Tackling the Climate Crisis at Home and Abroad (EO 14008) and Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (EO 13990).

Environmental Executive Order 14008, otherwise known as "Tackling the Climate Crises at Home and Abroad," and Executive Order 13990, known as "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," directs administration to center the climate crisis in foreign policy and national security considerations, take a "whole-of-government" approach to the climate crisis, lead by example, and much more.

These two executive orders aim for the U.S. and the world to meet the demands of the climate crisis

March 2021



Brett Fuller has been a volunteer with us since last summer and quickly became a reliable and eager volunteer! He is currently in a post-baccalaureate program at Oregon State University and is working for a degree in Computer Science which he is expecting to receive in June 2022. He is interested in ecological conservation, renewable energy, and combating climate change and was looking for a way to volunteer and help protect the coastal areas that he grew up loving which is how he found OCH. Brett quickly began contributing to many aspects of our organization from habitat monitoring, to restoration, to even recently writing an article for our blog! He approaches every opportunity with enthusiasm and kindness and is always willing or actively wanting to learn more about our local environments. We are very grateful to have him on our team and we are looking forward to watching him grow as an environmentalist as he works towards a career in the renewable energy sector once he graduates!

What's New

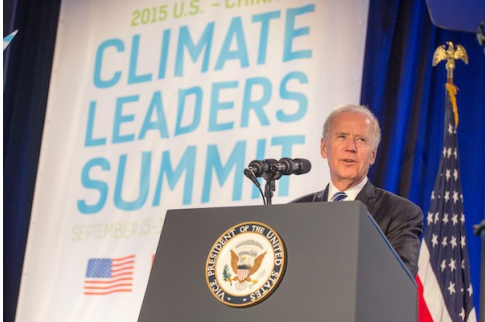
CONTINUATION OF RESTORATION

Depending on the status of the coronavirus, OCH will continue our restoration events every Saturday at the Upper Newport Bay or the Huntington Beach Wetlands Conservancy. OCH is looking for committed restoration volunteers, especially for the Upper Newport Bay location. Interested? Contact OCH@ochhabitats.org.



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Source: <https://joebiden.com/climate-plan/uygfuygfuyhgokjn>

while moving towards a clean energy revolution in businesses for a carbon pollution-free power sector by 2035. Domestically, executive order 14008 establishes the White House Office of Domestic Climate Policy, which will be led by a national climate advisor and the National Climate force, consisting of various cabinet and government agency members. This executive order also aims to protect “30 percent of U.S. land and coastal seas by 2030” (National Geographic, 2021). As of 2020, only 289 million acres of the U.S. are protected for biodiversity. Known as the “30 by 30,” this executive order requires 440 million more acres for conservation as only 12 percent of the U.S. is protected. The objectives of the 2030 goal are to conserve and protect species and ecosystems that are threatened by development and to restore degraded habitats. Biden pledges to protect biodiversity, slow extinction rates, and help leverage natural climate solutions.

Executive order 13990 focuses more on implementing various environmental actions, such as the revoking of the permit for the Keystone XL Pipeline, temporarily prohibiting drilling in the arctic refuge, and following scientific means to advance public health and the environment. The administration aims to revitalize the U.S. energy sector, conserve natural resources, bring well-paying union jobs, and deliver environmental justice to vulnerable communities.

Through environmental executive orders and his Presidential Memorandum on scientific integrity, President Biden sends a clear message that the Biden-Harris Administration will protect scientists’ ability to research and speak freely from political interference so that scientists can provide valuable information and insights to our nation. This will also reestablish scientific advisory committees and reestablish the President’s Council of Advisors on Science and Technology. For more detail about the Biden-Harris administration and its steps to fighting



President Biden signing an executive order.
Photo Credit: Chip Somodevilla/Getty Images

INTERNS

During late winter and early spring, we welcomed several new interns to our team: Kyle Fructuoso, Kim Yumul, Jonathan Vazquez (CSUF), Kevin Bartelheim (CSULB), Brandi Lacy (Saddleback), and Michelle Picca (Saddleback). Interns that have wrapped up their internship are Tania Garcia and Kevin Bollman. Thank you for all of your hard work!

OCH READS ENVIRONMENTAL BOOK CLUB

OCH has recently begun a new book club where we will share our insights on a variety of topics from the environmental world every other month. If you have any book recommendations, feel free to email us at och@ochabitats.org. Join our mailing list to get involved in our next meeting on May 27th where we will be discussing *The World of Wonders* by Aimee Nezhukumatathil. Happy reading!

OCH HAPPY HOURS

OC Habitats began hosting monthly live streams on Google Meet or Zoom during the pandemic in an effort to connect and engage with the public. These events are typically hosted Saturday morning where we go over many different topics regarding our organization, environmentalism, and sustainability. [Check out our previous live streams](#) and join our email list to know when the next live stream is scheduled!

HIKING PROGRAM



OCH is currently doing a monthly 2.5-mile MPA hike along Little Corona del Mar beach to learn about the habitat and the different species living therein. Recently, we have expanded our hiking program to include a 2-mile nature hike along the Santiago Oaks Regional Park Trail where you’ll learn about the various species living and the history of the area. If you’re interested in joining us on our hikes, space is limited, so register through [EventBrite!](#)



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climate change, check out OCH’s own Kim Yumul’s [Build Back Better](#) article!

Government plans do not exclude individual participation, we can do our part and commit to climate change at home. Actions that may seem small, such as recycling, educating, and reducing use, will add over time. Our individual actions will collectively come together and make a large difference. You can take the first steps in becoming an environmental advocate and committing to climate change through daily actions as well as supporting environmental organizations, such as OC Habitats.

Wildfires Impact on Wildlife

By Gina Thompson

In 2020, we witnessed and lived through a record breaking fire season. The largest, in fact, of California’s modern history. Many of us were affected by the Blue Ridge, Silverado, and Bond fires that occurred in Orange County, whether we had to evacuate, deal with power outages, or endure poor air quality. All throughout California, people experienced similar struggles as some of our worst fires raged across the state. According to [CAL FIRE](#), the August Complex fire in Northern California became our state’s first “gigafire”, a term for fires that burn over a million acres. Five of California’s six largest fires on record took place in 2020, a fact which shows just how severe the fire season was.

Wildfires have a profound effect on the natural world. As we witnessed last year, they contribute to air pollution by creating clouds of smoke and ash that contain harmful pollutants including carbon monoxide and particulate matter. Once those pollutants settle, they can land in bodies of water or on land and later swept into watersheds after the next rain. This adds to the issue of water pollution which affects wildlife and humans alike. Another impact on ecosystems is soil erosion. After fires burn the plants that are holding the soil in place, the soil is easily eroded by wind or rain, sometimes causing mudslides. In addition, fires increase the levels of planet-warming carbon dioxide in the atmosphere both from the combustion process and the destruction of trees which hold CO2 inside them. Lastly, attempts to protect native species are undermined by fires since they reduce habitat and food resources as well as leave the ecosystem vulnerable to quick-growing invasives.



Owl flying away from a fire. Photo Credit: Jeffrey Adams.
Sourced from National Wildlife Federation

MARCH: WOMEN’S HISTORY MONTH

During Women’s History Month, we would like to give a shout out to all of the women at OC Habitats who comes from a variety of educational and cultural backgrounds. We appreciate the hard work that they do to keep our mission of restoring, educating, and monitoring the habitats of OC. We are thankful for all of their contributions to OCH in their own way to show their passion for the environment, such as attending the restorations, writing a blog post, and just being a jack of all trades. We are proud and thankful for volunteering your time to support this predominantly women run non-profit organization.

Melody Aminian
Judy Berman
Bianca Borja
Caitlin Callin
Stacey Chartier-Grable
Michaela Coats
Kimi Garcia
Ginny Gregurek
Melissa King
Michelle Lee
Morgan Martin
Dominique Murillo
Elisabeth Neeley

Deanna Ochi
Devon Ohlwiler
Claudia Orozco
Michelle Picca
Keeley Rasich
Cristina Robinson
Crystal Ryan
Gina Thompson
Jackie Tran
Joyce Vu
Amanda Yamamoto
Kim Yumul

Upcoming Events & Opportunities

April 2021

- April 4th: Easter
- April 10th, 8– 11AM: Santiago Oaks Trail Hike
- April 17th, 9–12 PM: HBWC Restoration*
- April 17th, 8–10:30 AM: MPA Hike
- April 22nd: Earth Day

May 2021

- May 1st, 7:30–10 AM: MPA Hike
- May 9th: Mother’s Day
- May 15th, 9 –12 PM: HBWC Restoration*
- May 22nd, 10–11 AM: Happy Hour
- May 27th, 7:30–8:30 PM: OCH Reads - Environmental Book Club Meeting

June 2021

- June 12th, 10–11 AM: Happy Hour
- June 19th, 9–12 PM: HBWC Restoration*
- June 19th, 10–12:30 PM: MPA Hike
- June 20th: Father’s Day
- June 27th, 8–11 AM: Santiago Oaks Trail Hike

*All restoration events are tentative due to COVID
For new and upcoming events, join our mailing list.

[Join our Mailing List](#)



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Despite their destructive nature, wildfires are a natural part of our ecosystems. Due to the hot and dry climate, low levels of precipitation, and summer dormant vegetation that serves as kindling, California has the perfect conditions for wildfires. Because of this, native wildlife has adapted to the regular wildfires that burn through their homes. To escape fires, birds and mammals run and fly away, small creatures like amphibians burrow into the ground, and some large animals like elk seek refuge in streams or lakes. Several plants, including the Chaparral Yucca, have underground root crowns that enable them to regrow after a fire. Others, like coast live oaks and laurel sumacs, are able to regenerate from the leftover trunks or branches.



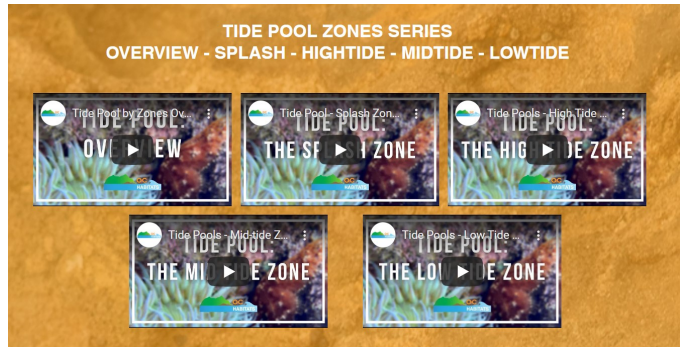
OCH Volunteers checking on a restoration site shortly after a wildfire in Orange County.

Some species even depend on fires. The flames cause fungi like morel mushrooms to release spores and conifers like bishop and knob cone pines to open their cones and release seeds. The seeds of other species including ceanothus, manzanita, laurel sumac, and sugarbush begin to germinate after the heat of fires melt their outer coating. Predators like bears, raccoons, and raptors benefit by feeding on small creatures fleeing fires, and other animals such as mule deer and black-backed woodpeckers rely on burned areas to eat and nest. On top of these adaptations, fire makes an ecosystem more diverse, with different levels of succession and various ages of plants. This concept, termed pyrodiversity, allows ecosystems to support a wider variety of wildlife in diverse microhabitats.

However, fire seasons have been gradually worsening, making it difficult for even these fire-adapted and fire-dependent species. Recent years have seen hotter, faster, larger, and more uncontrolled fires. Our fire season, once five months long, is now stretched across seven months. The ten largest fires, since accurate records began in 1932, have all occurred after the year 2000. Several factors have helped cause this including population growth, climate change, and, although it's counter-intuitive, fire suppression. For over a century, California has implemented strict fire suppression, or the prevention of fires. While at first glance this appears beneficial, it actually makes fires more severe. When wildfires are suppressed, undergrowth

Some species even depend on fires. The flames cause fungi like morel mushrooms to release spores and conifers like bishop and knob cone pines to open their cones and release seeds. The seeds of other species including ceanothus, manzanita, laurel sumac, and sugarbush begin to germinate after the heat of fires melt their outer coating. Predators like bears, raccoons, and raptors benefit by feeding on small creatures fleeing fires, and other animals such as mule deer and black-backed woodpeckers rely on burned areas to eat and nest. On top of these adaptations, fire makes an ecosystem more diverse, with different levels of succession and various ages of plants. This concept, termed pyrodiversity, allows ecosystems to support a wider variety of wildlife in diverse microhabitats.

OCH HABITAT VIDEO SERIES



We have several habitat video series projects in the works that discuss the specific habitats and the species living therein. We are hoping for the publication of several of them by the end of 2021. There is also an in-depth look into the tide pool habitat that explores the successes and struggles that various tide pool animals experience in the microhabitats of each zonation. Keep your eyes open for a notification about these videos about our habitats of Orange County.

THE NATIVE HABITATS OF ORANGE COUNTY

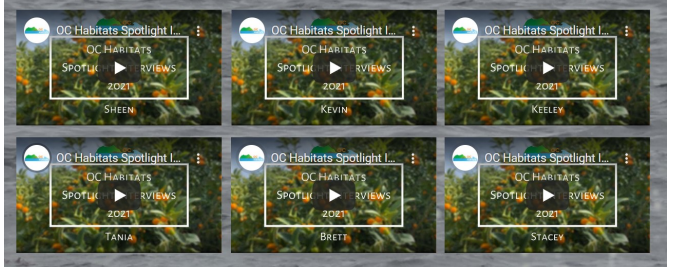
ORANGE COUNTY HABITATS OVERVIEW

COASTAL DUNES

TIDE POOLS

OCH SPOTLIGHT INTERVIEWS 2021

2021 Spotlights



We will be continuing to post spotlight interviews with our interns, volunteers, and staff. These interviews highlight the variety of backgrounds, cultures, and experiences from our volunteers, and we embrace them all. [Check out our videos](#) to see how the OCH culture is diverse and welcoming.





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and plant litter builds up making the next fire that occurs more extreme. Indigenous Californians understood this and often let wildfires burn or started them themselves. Along with our policy of fire suppression, population growth has an impact. More people means that development is spreading into areas that would regularly have fires and there is a higher risk of fires being started due to human error. Finally, climate change has contributed to the worsening fires by causing higher temperatures and more extreme droughts.

Aside from large scale solutions like new fire suppression policy, prescribed burns, and fighting climate change, there are some personal actions you can take to help our growing wildfire issues. Make sure you are cautious during the dry season if you hold any outdoor activities that involve fire pits, grills, candles, cigarettes, fireworks, etc. Remember that one loose spark could start a dangerous wildfire. You can also donate your time and money to [wildlife rehabilitation centers](#) that care for animals injured in fires or participate in a restoration project in a burned area. The next time you hear about a large, destructive wildfire, remember that it is not a one time incident, but part of a worsening pattern. Because humans have set this pattern in motion, it is our responsibility to return wildfires to the creators of regeneration and regrowth that they once were.



Join the OCH Crew!



OCH is looking for people who want to share their talents and time to improve their local environment and habitats. We have many opportunities to get involved, check them out below.

Volunteer:

- Become a Habitat Monitor
- Join our Habitat Education Team
- Help with Administrative Tasks
- Help with Outreach and Marketing
- Become a Tide Pool Docent
- Work on OCH's Social Media Outreach
- Help with ongoing Restoration Projects
- Work with our Grant Writing Team to secure funding for our organization, programs, and projects.
- Click Volunteer above for application.

Internships:

- College Level Students earn credit through CSUF and UCI
- Gain experience in the conservation field, a grassroots nonprofit, business administration, public speaking, education, and more.
- Become a film or art intern for OCH.
- Click Internships above for application.

We look forward to hearing from you!

Volunteers of the Year

2017



Tom Ghee

2018



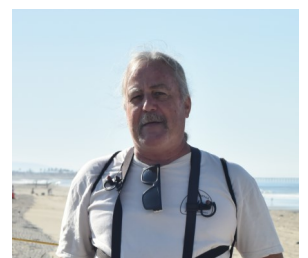
Bianca Borja

2019



Crystal Ryan & Trevor Stocking

2020



Ross Griswold