

STAFF SUMMARY FOR DECEMBER 7-8, 2016

18C. OTHER INFORMATIONAL ITEMS – FEDERAL AGENCIES**Today's Item**Information Action

Standing agenda item to receive reports on any recent federal agency activities of interest not otherwise addressed under other agenda items.

Summary of Previous/Future Actions (N/A)**Background*****National Oceanic and Atmospheric Administration (NOAA):***

- NOAA indicates that for the first time, scientists have connected the concentration of human-caused carbon dioxide in waters off the U.S. West Coast as leading to ocean acidification and the dissolving of sea snail shells; sea snails are a major food source for a number of commercially valuable fish (Exhibit C1).
- NOAA announced the availability of a report on the Resilient Lands and Waters Initiative, where two of the seven national projects are being undertaken in California (California Headwaters Partnership and California's North-Central and Russian River Watersheds Partnership); the partnerships demonstrate the benefits of collaborative, landscape-scale conservation approaches to addressing climate change and other resources management challenges (Exhibit C2).
- Over the next five years NOAA's National Centers for Coastal Ocean Science will award over \$10 million to ten projects that address sea level rise, hypoxia, and harmful algal blooms; two of the projects are located in California (Exhibit C3).
- NOAA announced final revisions to the guidelines that federal managers use as they update the nation's marine fishery management plans in an effort to be more flexible and effective in ending and preventing overfishing; the revisions reflect advances in fisheries science and a range of technical issues (Exhibit C4).

National Park Service: Working with multiple partners, including PG&E and the Yurok Tribe, the National Park Foundation is building a facility and monitoring program that will allow condors to be released into Yurok ancestral territory within Redwood National Park (Exhibit C5).

U.S. Fish and Wildlife Service: Multiple partners, led by DFW, continue working to restore the threatened Paiute cutthroat trout, North America's rarest and most imperiled trout (Exhibit C6).

Significant Public Comments (N/A)**Recommendation (N/A)****Exhibits**

- C1. [NOAA news release: NOAA research links human-caused CO2 emissions to dissolving sea snails off U.S. West coast, Nov 22, 2016](#)
- C2. [NOAA news release: Building resilience to climate change one landscape at a time, Nov 17, 2016](#)

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- C3. [NOAA news release: NOAA awards \\$10.44 million in coastal science research funding, Oct 25, 2016](#)
- C4. [NOAA news release: NOAA announces revisions to federal fishery management guidelines, Oct 13, 2016](#)
- C5. [National Park Service news release: Saving the CA condor from Extinction, Nov 2, 2016](#)
- C6. [USFWS news release: Saving North America's Rarest Trout, Nov 14, 2016](#)

Motion/Direction (N/A)



National Oceanic and Atmospheric
Administration
U.S. Department of Commerce

NOAA research links human-caused CO₂ emissions to dissolving sea snail shells off U.S. West Coast

Climate | Oceans & Coasts | Research | ocean acidification | climate | greenhouse gases

November 22, 2016 — For the first time, NOAA and partner scientists have connected the concentration of human-caused carbon dioxide in waters off the U.S. Pacific coast to the dissolving of shells of microscopic marine sea snails called pteropods.



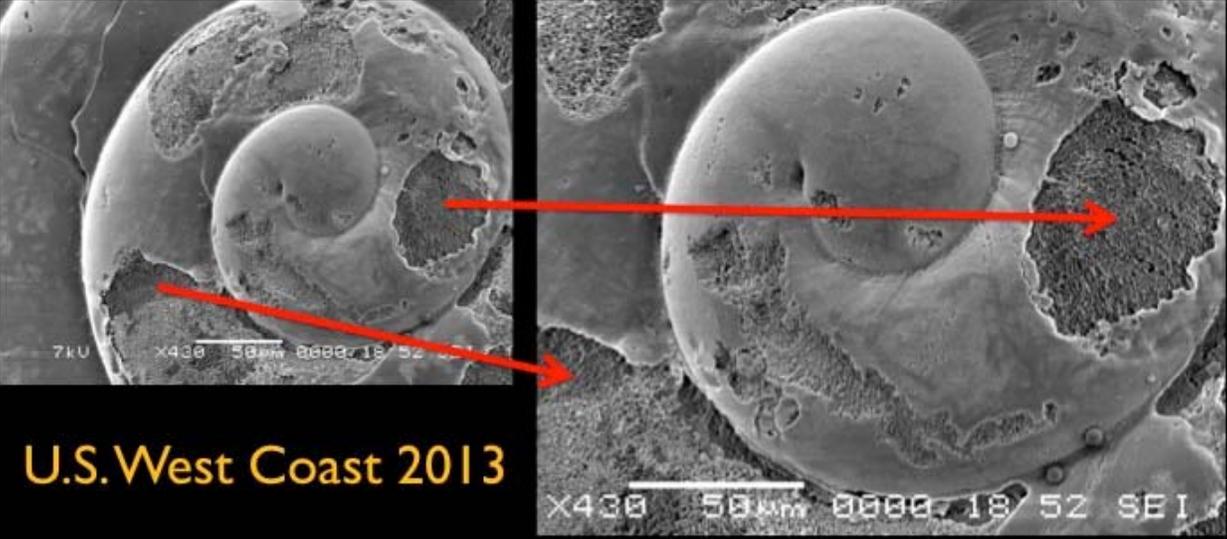
Commercially valuable fish such as salmon, sablefish and rock sole make the pteropod a major part of their diet.

“This is the first time we’ve been able to tease out the percentage of human-caused carbon dioxide from natural carbon dioxide along a large portion of the West Coast and link it directly to pteropod shell dissolution,” said Richard Feely, a NOAA senior scientist who led the research appearing in *Estuarine, Coastal and Shelf Science*. “Our research shows that humans are increasing the acidification of U.S. West Coast coastal waters, making it more difficult for marine species to build strong shells.”

The global ocean has soaked up one-third of human-caused CO2 emissions since the start of the Industrial Era. While this reduces the amount of this greenhouse gas in the atmosphere, it comes at a cost to the ocean. CO2 absorbed by seawater increases its acidity, reducing carbonate ions, which are building blocks used by shellfish to grow their shells.

Pteropods as indicators-increased shell dissolution

Shell dissolution closely corresponds to carbonate chemistry conditions in the natural environment. Pteropods from the **California Current Ecosystem** have evidence of severe shell dissolution.



U.S. West Coast 2013

(NOAA)

The pteropod, a sea snail the size of the head of a pin, is found in the Pacific Ocean. It has been the focus of research in recent years because its shell is affected by how much CO2 is in seawater and it may be an indicator of ocean acidification affecting the larger marine ecosystem.

A key piece of the new research was determining how much human CO2 emissions have added to naturally occurring CO2 in seawater off the U.S. West Coast. Using several decades of measurements from the Pacific Ocean taken through the U.S. Global Ocean Carbon and Repeat Hydrography Program [↗](#) and new data from four NOAA West Coast research cruises conducted between 2007 and 2013, the research team developed a method to estimate additional CO2 from human-caused emissions since the start of the Industrial Era as compared to CO2 from natural sources.

The analysis shows that concentrations of human-caused CO2 are greatest in shallow waters where the atmosphere gives up large amounts of its CO2 to the sea. The researchers also estimated that CO2 concentrations from fossil fuel emissions make up as much as 60 percent of the CO2 that enriches most West Coast nearshore surface waters. But the concentrations dropped as they measured deeper. It drops to 21 percent in deeper waters of 328 feet or 100 meters, and falls even lower to about 18 percent in waters below 656 feet or 200 meters. Concentrations vary depending on location and seasons as well.

Once researchers created a detailed map of the human-generated CO2 concentrations, they looked at how pteropod shells fared in

areas with varying seawater CO2 concentrations. They found more than 50 percent of pteropod shells collected from coastal waters with the high CO2 concentrations were severely dissolved. An estimated 10 to 35 percent of pteropods taken from offshore waters showed shell damage when examined under a scanning electron microscope.

“We estimate that since pre-industrial times, pteropod shell dissolution has increased 20 to 25 percent on average in waters along the U.S. West Coast,” said Nina Bednaršek of the University of Washington. Earlier research by Bednaršek and others has shown that shell dissolution affects pteropod swimming ability and may hamper their ability to protect themselves from predators.

“This new research suggests we need a better understanding of how changes in pteropods may be affecting other species in the food chain, especially commercially valuable species such as salmon, sablefish, and rock sole that feed on pteropods,” Bednaršek added.

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National Oceanic and Atmospheric
Administration
U.S. Department of Commerce

Building resilience to climate change one landscape at a time

New report highlights actions of seven partnerships to safeguard natural resources

Climate | natural resources resilience

The Resilient Lands and Waters Initiative Report is posted to the "related resources" section below.

November 17, 2016 —



A Resilient Lands and Waters Initiative report and companion [website](#) were released today highlighting the efforts of seven partnerships to build resilience of natural resources in the U.S. These partnerships demonstrate the benefits of using existing collaborative, landscape-scale conservation approaches to address climate change and other resource management challenges.

The Initiative is a key part of the President's Interagency Council on Climate Preparedness and Resilience's Priority Agenda for Enhancing the Climate Resilience of America's Natural Resources ([Priority Agenda](#)), a first of its kind, comprehensive commitment across the Federal Government to support resilience of America's vital natural resources.

The Priority Agenda directed federal agencies to work with states, tribes and other partners to select flagship large-scale geographic regions and identify priority areas for conservation, restoration, or other investments to build resilience in vulnerable regions, enhance carbon storage capacity, and support management needs. It also directed the agencies and their partners to identify and map an initial list of priority areas within each of the selected geographic landscapes or regions.



Sierra Nevada snowpack from the California Headwaters Partnership. (Sierra Nevada Conservancy)

"America's natural resources are vulnerable to many threats, including invasive species, habitat loss, pollution, and extreme weather. Climate change is compounding the impacts from these challenges," said Christy Goldfuss, Managing Director of White House Council on Environmental Quality. "The Resilient Lands and Water Initiative provides our nation's natural resource managers with lessons learned and tools that can help them prepare their own landscapes for a rapidly changing future."

The culmination of this nearly two-year effort is highlighted in the final report and website, which feature the accomplishments of the seven partnerships and describes overarching challenges, lessons learned, and recommendations. The website also provides links to decision support tools, maps, and related websites developed by the individual partnerships.

"This initiative demonstrates the power of partnerships across state, federal, and private organizations that are stronger together in developing solutions that will build resilience in our natural resources and communities and adapt to a changing climate," said Kevin Hunting, Chief Deputy Director of the California Department of Fish and Wildlife.

By sharing successes and lessons learned, the Initiative will encourage the development of similar resilience efforts in other areas across the country. Collectively, these will help build the resilience of our nation's valuable natural resources and the people, businesses and communities that depend on them in regions vulnerable to climate change and related challenges.

"The Resilient Lands and Waters effort has helped federal and state partners focus on the concrete and practical needs of local partners, and to start building the kind of trusting relationships we need to make progress on really challenging natural resource issues," said Monte Marti, District Manager of the Snohomish Conservation District.



The Lake Huron shoreline at Tawas Point, Michigan. This area is part of the Great Lakes Coastal Wetlands Resilient Lands and Water Partnership. (NOAA-Heather Stirratt)

The Resilient Lands and Waters Initiative supports the National Fish, Wildlife, and Plants Climate Adaptation Strategy (NFWPCAS) whose first goal is to build and maintain an ecologically connected network of terrestrial, coastal and marine conservation areas that are likely to be resilient to climate change and support a broad range of fish, wildlife and plants under changing conditions.

Some of the partnerships' key deliverables include:

- **California Headwaters**

- A [story map](#)  describes the region, current issues and efforts underway to increase the pace and scale of restoration throughout the landscape to help improve water quality and quantity, promote healthy forests, and reduce wildfire risk.
- Websites hosted by both the state ([Sierra Nevada Conservancy](#)) and federal ([U.S. Forest Service](#)) agency co-leads that shares information on the partnership, including handouts, webinar recordings, and updates.

- **California's North-Central Coast and Russian River Watershed**

- A [story map](#)  describes the landscape; summarizes priority issues such as flood risk reduction, water supply reliability, and vulnerable species and habitats; identifies priority areas for climate adaptation; and notes accomplishments.
- A [sea level rise decision support tool](#)  was expanded to include the Russian River estuary and adjacent coastal areas.

- **Crown of the Continent** (northern Rocky Mountains)

- Creation of seamless Crown of the Continent geospatially explicit [data sets and maps](#) [↗](#) for targeted species and stressors at the transboundary landscape scale.
- Development of new [strategies and tools](#) [↗](#) that are helping address ecosystem threats, protect target species, and identify critical areas for building habitat connectivity and ecosystem resilience with partners and stakeholders in the Crown of the Continent.

- **Great Lakes Coastal Wetlands** (Lakes Huron & Erie)

- Development of new coastal wetland [decision support tools](#) [↗](#) between Saginaw Bay and central Lake Erie that support the identification and prioritization of restoration actions for both existing and historical Great Lakes coastal wetlands.
- [Landscape Conservation Design](#) [↗](#) for Coastal Wetlands. This is a collaborative, holistic, and iterative process that provides information, analytical tools, spatially explicit data, and best management practices.

- **Hawaii** (West Hawai'i, West Maui, and He'eia (O'ahu))

- A [story map](#) [↗](#) was created to house and visualize all the information gathered and created for organizations to utilize and build upon in future actions for the 3 sites that comprise the landscape.
- An interactive [map and database](#) [↗](#) were created covering resilient activities in the RLW locations.

- **Puget Sound's Snohomish River Watershed**

- Two story maps describe [flood control benefits of regional restoration](#) [↗](#), and the multi-faceted story of the [Snohomish Estuary](#) [↗](#), including the land subsidence and sea level rise threatening low-lying farmland, while an improved [local climate risk analysis](#) [↗](#) from the University of Washington supports local planners.
- Restored 360 acres at the Qwuloolt site in the Snohomish estuary, which, along with the 400 acre Smith Island project currently underway, will reach the 10-year estuary restoration objective for recovering Snohomish Chinook salmon.

- **Southwest Florida**

- An interactive [website](#) [↗](#) was created that integrates story maps, graphics, and written descriptions of the Southwest Florida region, anticipated changes to natural and built areas through 2060, and management options.
- Products and methodology are being used by the Peninsular Florida LCC partners in

a SW Florida landscape conservation design, a wildland fire resilient landscapes proposal, and conservation planning in Florida's Big Bend area. See [PFLCC Conservation Planning Atlas](#) [↗](#).

[Click here](#) for additional information on the Resilient Lands and Waters Initiative.

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National Oceanic and Atmospheric
Administration
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NOAA awards \$10.44 million in coastal science research funding

Multi-year awards to focus on sea level rise, hypoxia and harmful algal blooms

Oceans & Coasts | coasts grants

October 25, 2016 — NOAA's National Centers for Coastal Ocean Science will award \$10.44 million over the next five years for 10 projects to address sea level rise, hypoxia and harmful algal blooms (HABs).



Among the projects the 10 awards will support are:

- coastal lowland habitat research in California;
- understanding and mitigating sea level rise and storm surge impacts on changing coastal landscapes;
-

bloom forecasting in the Pacific Northwest, aiding the management of shellfish fisheries, public clam beaches and human health

- reducing the effects of nutrient-induced hypoxia on fishery and natural resources in the Gulf of Mexico;
- development of a hypoxia forecast for Lake Erie, which will warn drinking-water managers when hypoxic water is moving into their vicinity.

“We are aiming, through these awards, to build tools that tell coastal communities if a street, business or favorite beach will be threatened by sea level rise, flooding, HABs, or nutrient pollution,” said Mary Erickson, director of NCCOS. “We will be connecting this work to resource and public health managers to develop strategies to mitigate these impacts.”

First-year funding of the 10 new projects, all subject to the availability of funds, totals about \$3.2 million with the remainder of recommended funds pending available Congressional appropriations. A full list of projects is available at <http://go.usa.gov/xkdzs>. The [National Centers for Coastal Ocean Science](#) delivers ecosystem science solutions for NOAA's [National Ocean Service](#) and its partners, bringing research, scientific information and tools to help balance the nation's ecological, social and economic goals. NCCOS is also sponsoring 39 other continuing projects. The overall FY 2016 funding total for the 49 projects is about \$9.1 million.

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National Oceanic and Atmospheric
Administration
U.S. Department of Commerce

NOAA announces revisions to federal fishery management guidelines

Guidelines continue progress towards ending overfishing

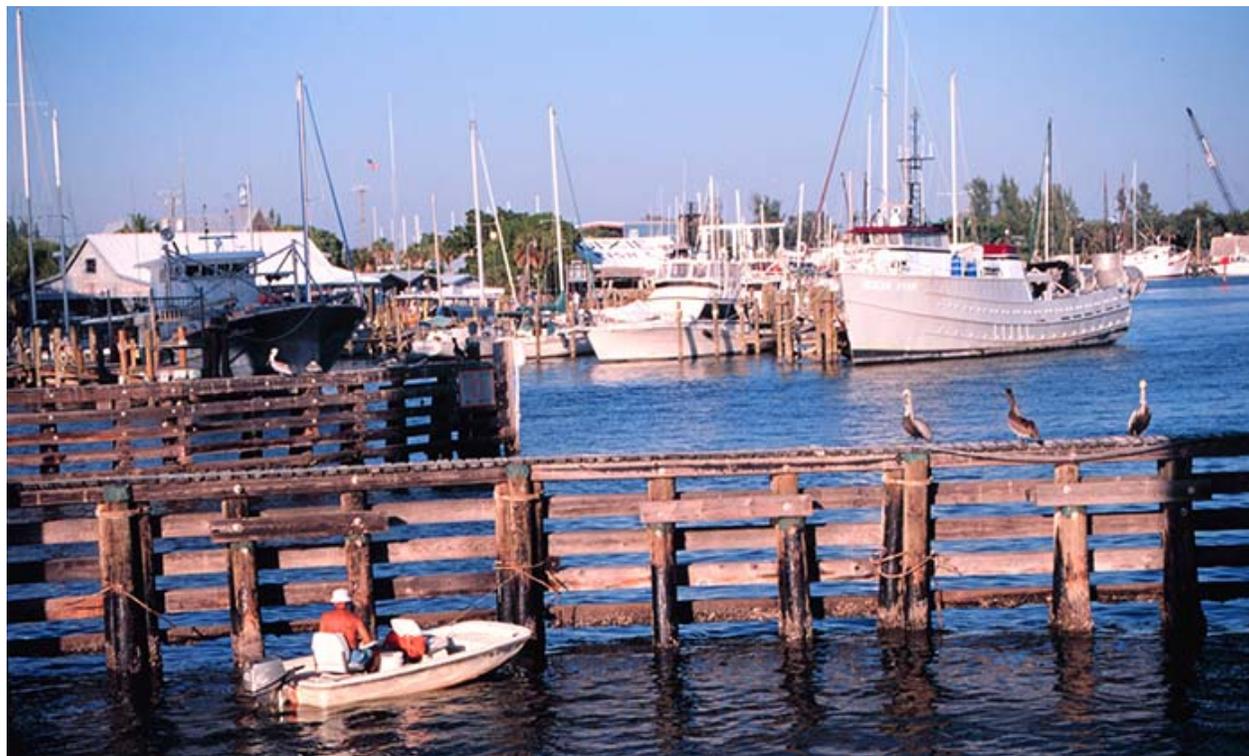
Fisheries | Magnuson-Stevens Act

October 13, 2016 —



NOAA Fisheries today announced final revisions to the guidelines that federal managers will use as they routinely update the nation's marine fisheries plans. The revised federal fishery management guidelines, known as the National Standard 1 guidelines of the Magnuson-Stevens Fishery Conservation and Management Act, are intended to provide more flexibility and be more effective in ending and preventing overfishing.

“U.S. efforts to rebuild fish stocks under the Magnuson-Stevens Act and the National Standards have resulted in real ecological and economic benefits, and made the nation an international leader in fisheries management,” said Eileen Sobeck, assistant NOAA administrator for fisheries. “The revisions will continue our progress to prevent and end overfishing while providing an adaptive management system that better supports fishermen and fishing communities.”



Recreational fishing is an important part of the U.S. economy and an enjoyable pastime for many anglers. (NOAA)

These successes are based on the fundamental mandate within the Magnuson-Stevens Act that overfishing must be prevented. Changes to these guidelines will not change that. Rather, these updates are based on lessons learned since the reauthorization of the Magnuson Act in 2007 and provide consistent technical guidance across the eight regional fishery management councils.

The National Standard 1 revisions reflect advances in fisheries science and address a range of technical issues, including:

- Providing regulatory stability for commercial and recreational fishing – so that businesses can increase their resilience to stock changes over time
- Adding scientific methods that result in better informed rebuilding plans
- Improving guidance on managing a fishery when data about a stock is limited
- Advancing Ecosystem-Based Fisheries Management, which will help managers consider the broader marine ecosystem when managing fish populations



Fishermen harvest walleye pollock in Alaska. (NOAA)

The National Standard guidelines assist the eight regional fishery management councils and NOAA Fisheries in developing fishery management plans that comply with the Magnuson-Stevens Act. National Standards 3, 7, and the General Section of the guidelines have also been streamlined as part of the revisions. This rule was developed over the course of the past 4 years, and was informed by over 100,000 public comments and significant engagement with the fishing industry and others concerned about the sustainability of our ocean resources.

Since 2000, NOAA has declared 40 U.S. fishery stocks rebuilt, and the number of overfished stocks and stocks experiencing overfishing are at all-time lows. The latest available data show that U.S. commercial and recreational saltwater fishing generated more than \$214 billion in direct and indirect sales and supported more than 1.8 million jobs in 2014.

To learn more about the revisions to National Standards 1, 3, 7 and the General Section of the guidelines, [click here](#).

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Saving the CA condor from Extinction



Condor in flight, Chris West

News Release Date: November 2, 2016

Contact: Alanna Sobel, 202-796-2538

In a major effort to restore the iconic California condor population, the National Park Foundation has teamed up with Pacific Gas and Electric Company (PG&E), the National Park Service, and the Yurok Tribe to build a facility and monitoring program that will allow condors to be released into Yurok ancestral territory, within Redwood National Park. The donation is part of the National Park Foundation's \$350 million Centennial Campaign for America's National Parks.

“To see a condor in flight is breathtaking and thanks to our partners PG&E, the National Park Service, and the Yurok Tribe, people will be able to witness this wildlife at Redwood National Park in the near future,” said National Park Foundation President Will Shafroth. “We are proud to work with organizations that protect our national parks and the wildlife that call these places home.”

Due to a number of factors, including lead poisoning, the California condor was close to extinction in the 1980s, reaching an all-time low of 22 individuals. Over the last several decades, conservationists and scientists have committed themselves to saving the condor from extinction and reintroducing birds to the wild. As of December 2015, there are 435 condors both in the wild and in captivity. While this is good news, condors still face many environmental challenges.

“The park staff at Redwood National and State Parks is excited to work alongside the Yurok Tribe and our park neighbors to eventually return the iconic California condor to its historic range along the north coast,” said Redwood National Park superintendent Steven Prokop. “This cooperative effort is required to restore the ecological and cultural vitality of the coast redwood forests, and expand the range of

California condors, key factors in the long-term survival of the species.” In support of the recovery of this species, for the last decade the Yurok Tribe has spearheaded efforts to reintroduce condors in the Pacific Northwest, a region that North America’s largest bird has not occupied in more than a century. Exposing a new population of condors to the profuse biological diversity found in Redwood National Park and the surrounding area has a very real potential to aid in the soaring scavenger’s long-term recovery.

This project will allow condors to regain their foothold in their former northern California range and further strengthen the condor population overall. The multiyear project includes:

- Construction of a condor release facility at a site in Redwood National Park.
- Development of a land owner GIS database for Humboldt, Mendocino, Del Norte, Trinity, and Siskiyou Counties in California, and Josephine and Curry Counties in Oregon.
- Design of a remote tracking and monitoring system to better understand flight and habitat patterns.

PG&E has been a long-time partner of the National Park Foundation, and will provide funding and support for this project. The energy company has previously invested more than \$4 million dollars in its infrastructure in the Big Sur area to ensure that condor flight paths aren’t obstructed by power lines, allowing the birds to prosper in their natural habitat. “In our role as energy provider to millions of Californians, we’re committed to working in ways that protect the habitat for the majestic condors and all of our state’s wonderful diversity of species,” said PG&E Corporation Chairman and CEO Tony Earley.

The reestablishment of a condor population in far Northern California is especially important to members of the Yurok Tribe, which started the region’s first condor reintroduction effort. Condors, considered sacred by Yurok people, serve an important role in the tribe’s culture. “The condor has played a major part in Yurok ceremonies and culture since time immemorial,” said Thomas P. O’Rourke Sr., Chairman of the Yurok Tribe. “It is through collaborative projects like this that we will bring balance back to our natural world.”

Public meetings for the proposed reintroduction of California condors in Redwood National Park will be held in January 2017 at the following dates and locations:

1/23 Sacramento, CA 6-8 pm Federal Building, 2800 Cottage Way, Sacramento

1/24 Eureka, CA 6-8 pm Wharfinger Building, 1 Marina Way, Eureka

1/25 Klamath, CA 10 am – 12 pm Klamath, CA

1/25 Medford, OR 6-8 pm Jackson County Auditorium, Central Point, OR

1/26 Portland, OR 6-8 pm Oregon Zoo, 4001 SW Canyon Road, Portland

ABOUT THE NATIONAL PARK FOUNDATION

The National Park Foundation is the official charity of America’s national parks and nonprofit partner to the National Park Service. Chartered by Congress in 1967, the National Park Foundation raises private funds to help PROTECT more than 84 million acres of national parks through critical conservation and preservation efforts, CONNECT all Americans with their incomparable natural landscapes, vibrant culture and rich history, and INSPIRE the next generation of park stewards. In 2016, commemorating the National Park Service’s 100th anniversary, the Foundation launched The Centennial Campaign for America’s National Parks, a \$350 million comprehensive fundraising campaign to strengthen and enhance the future of these national treasures for the next hundred years. Find out more and become a part of the national park community at www.nationalparks.org.

ABOUT THE NATIONAL PARK SERVICE

About the National Park Service. More than 20,000 National Park Service employees care for America's

413 national parks and work with communities across the nation to help preserve local history and create close-to-home recreational opportunities. Visit us at www.nps.gov, on Facebook www.facebook.com/nationalparkservice
Twitter www.twitter.com/natlparkservice,
YouTube www.youtube.com/nationalparkservice.

ABOUT REDWOOD NATIONAL AND STATE PARKS

Redwood National and State Parks share in the perpetual stewardship of ancient coast redwood forests, streams, coastal ranges, and coastline; for the enjoyment, education and inspiration of people forever; with a commitment to watershed-scale restoration of damaged landscapes. The parks protect and manage more than 130,000 acres including nearly 35% of the world's remaining old-growth coast redwood forests. For more information, please visit our website: www.nps.gov/redw, or visit us on one of our social media sites. We're RedwoodNPS on Facebook, Twitter, Instagram and YouTube.

ABOUT PACIFIC GAS AND ELECTRIC COMPANY

Pacific Gas and Electric Company, a subsidiary of PG&E Corporation (NYSE:PCG), is one of the largest combined natural gas and electric utilities in the United States. Based in San Francisco, with more than 20,000 employees, the company delivers some of the nation's cleanest energy to nearly 16 million people in Northern and Central California. For more information, visit www.pge.com/ and www.pge.com/en/about/newsroom/index.page.

ABOUT THE YUOK TRIBE

With more than 6,000 members, the Yurok Tribe is the largest federally recognized tribe in California. For almost ten years, the Tribe has been working on the Yurok Condor Reintroduction Initiative, a longterm, collaborative effort to bring back the culturally and ecologically important birds to Yurok Ancestral Territory. The Tribe's aboriginal lands occupy 500,000 acres in the core of the species' historical range, which spanned from Baja Mexico to British Columbia at the time of first contact. The Tribe selected to pursue this monumental project because of the condor's cardinal role in Tribal ceremonies. The combination of the condor and hummingbird is considered big medicine. From the beginning, the Tribe knew that collaboration would be the foundation of a successful condor reintroduction program and partnered early on with the National Park Service. The Yurok Tribe's Condor Initiative includes many formal partners, such as Redwood National and State Parks, the National Park Foundation, PG&E and many others.

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General Park Information



U.S. Fish & Wildlife Service

Pacific Southwest Region

California, Nevada and Klamath Basin

Saving North America's Rarest Trout



The juvenile Paiute cutthroat trout shown here is from a source population that will eventually be used to stock the species back into 100 percent of its historic range in California's Silver King Creek. Credit: Dan Hottle/USFWS

By Dan Hottle
November 14, 2016

It is believed that the loss of the Paiute cutthroat trout, North America's rarest and most imperiled trout, from its historic range of an 11-mile stretch of rugged, eastern Sierra wilderness stream began as far back as the early 1900s when William Howard Taft was president and the newly-minted Ford Model T was puttering around on 22 cents per gallon gasoline.

Today, efforts led by the California Department of Fish and Wildlife and its partners, the U.S. Fish and Wildlife Service and U.S. Forest Service, to restore the Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*) to its native home waters remain every bit as challenging for the team as they were back in 1967 when the species was first listed as endangered, six years before the passage of the Endangered Species Act (ESA), and as when it was later upgraded as threatened under the ESA in 1975.

"The Paiute cutthroat is the rarest and yet most recoverable trout in the U.S. It has evolved with a sparkling, iridescent purplish coloration that provides it with camouflage in the higher elevation streams where it lives," said CDFW fish biologist **William Sonner**. "But in restoring this beautiful trout we are challenged with the impacts of climate change, along with the California drought, which have left the source populations severely reduced in numbers."

[Continue to full story...](#)