Celebrating 40 Years

Recovering Threatened and Endangered Species

FY 2011–2012 Report to Congress

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NOAA
DEPARTMENT OF COMMERCE

NOAA FISHERIES

Contents

Introduction **3**

Background **6**

Overview **7**

Partnerships for Recovery **9**
Species Status 10

Recovery Stories **15**
Marine Turtles 16
Central California Coast Coho 17
Gulf Sturgeon 19
Shortnose Sturgeon 20
White Abalone 21
The Eastern DPS of Steller Sea Lion 22
Hawaiian Monk Seals 24
Southern Resident Killer Whale 26
Bowhead Whale 27

References **28**

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Introduction

Forty Years of Endangered Species Protection: What's Worked and What's Next?

This year we celebrate the 40th Anniversary of the Endangered Species Act (ESA). President Nixon signed the ESA into law on December 28, 1973, after it passed Congress with only four dissenting votes. Congress passed the legislation recognizing that the natural heritage of the United States was of "esthetic, ecological, educational, recreational, and scientific value to our Nation and its people." They understood that, without protection from human actions, many of our nation's living resources would become extinct.

Although previous laws had addressed species extinction, these efforts did not provide enough tools to stop the decline of endangered plant and wildlife populations. The Endangered Species Act included a federal prohibition against the "taking" of an endangered species—protections making it illegal to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to do these things to these animals and plants. It also required federal agencies to use their authorities to aid the recovery of imperiled species and to consult with one another to ensure the activities they fund or carry out do not further endanger them.

Species diversity and ecosystem health are part of the natural legacy we leave for future generations. Each plant, animal, and their physical environment are part of a much more complex web of life, where the removal of a single species could cause a series of negative events affecting many others. Although occasional extinction of species is natural, extinctions are now occurring at an unprecedented rate. Endangered species serve as a sentinel, indicating larger ecological problems that could alter ecosystem functions. Previous generations have derived great benefit from the wide variety of species on land and in our ocean—inspiration, beauty, solace, food, livelihood, medicines, and other products. The ESA is a mechanism to help guide our conservation efforts and a reminder that future generations deserve the opportunity to enjoy the same great benefits from the natural world.

What the Act Requires

The purpose of the ESA is to conserve threatened and endangered species and their ecosystems. The Act lays out criteria for designating a species as endangered or threatened, as well as the tools and procedures used by NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service to protect the designated species and their habitats. A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A threatened species is one considered likely to become endangered in the foreseeable future.

One of the tools for protecting listed species are the prohibitions on take, making it illegal to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to do these things without special permission. The listing of a species as endangered automatically makes take illegal, similar

prohibitions are usually extended to threatened species through an additional rule after listing. Federal agencies may be allowed limited take of species through interagency consultations with NMFS or the U.S. Fish and Wildlife Service. Non-federal individuals, agencies, or organizations may also be authorized limited take through special permits for scientific research or as part of special conservation plans. Effects to the listed species must be minimized, and in some cases conservation efforts are required to offset the take.

The ESA also includes a provision to protect areas deemed essential for the conservation of a listed species, through designation of "critical habitat." A critical habitat designation does not set up a preserve or refuge; it applies only when federal funding, permits, or projects are involved. Federal agencies go through a consultation process to ensure they do not destroy or adversely modify critical habitat during their project.

We would likely have seen hundreds of species go extinct without the ESA.

The ESA also requires the development of a recovery plan. The recovery plan serves as a road map for the recovery of the species, a guidance document to help tie together the efforts of federal, state, tribal, industry, and non-governmental organizations for the benefit of the species.

Why the Act Has Been Successful

The ESA has been successful in preventing species extinctions—less than 1 percent of the species listed under the ESA have been delisted due to extinction. While we have recovered and delisted a small percentage of listed species since 1973, we would likely have seen hundreds of species go extinct without the ESA.

The Act has pushed the development of new technologies and management approaches to recover species. For example, one of the major threats to marine turtles is incidental capture, injury, and mortality during fishing operations. NMFS works cooperatively with U.S. shrimp fishermen to develop and improve turtle excluder devices (TEDs) to address interactions between marine turtles and trawl fishing gear. This joint effort has reduced bycatch in the U.S. shrimp fishery significantly and boosted the recovery of Kemp's ridley sea turtles.

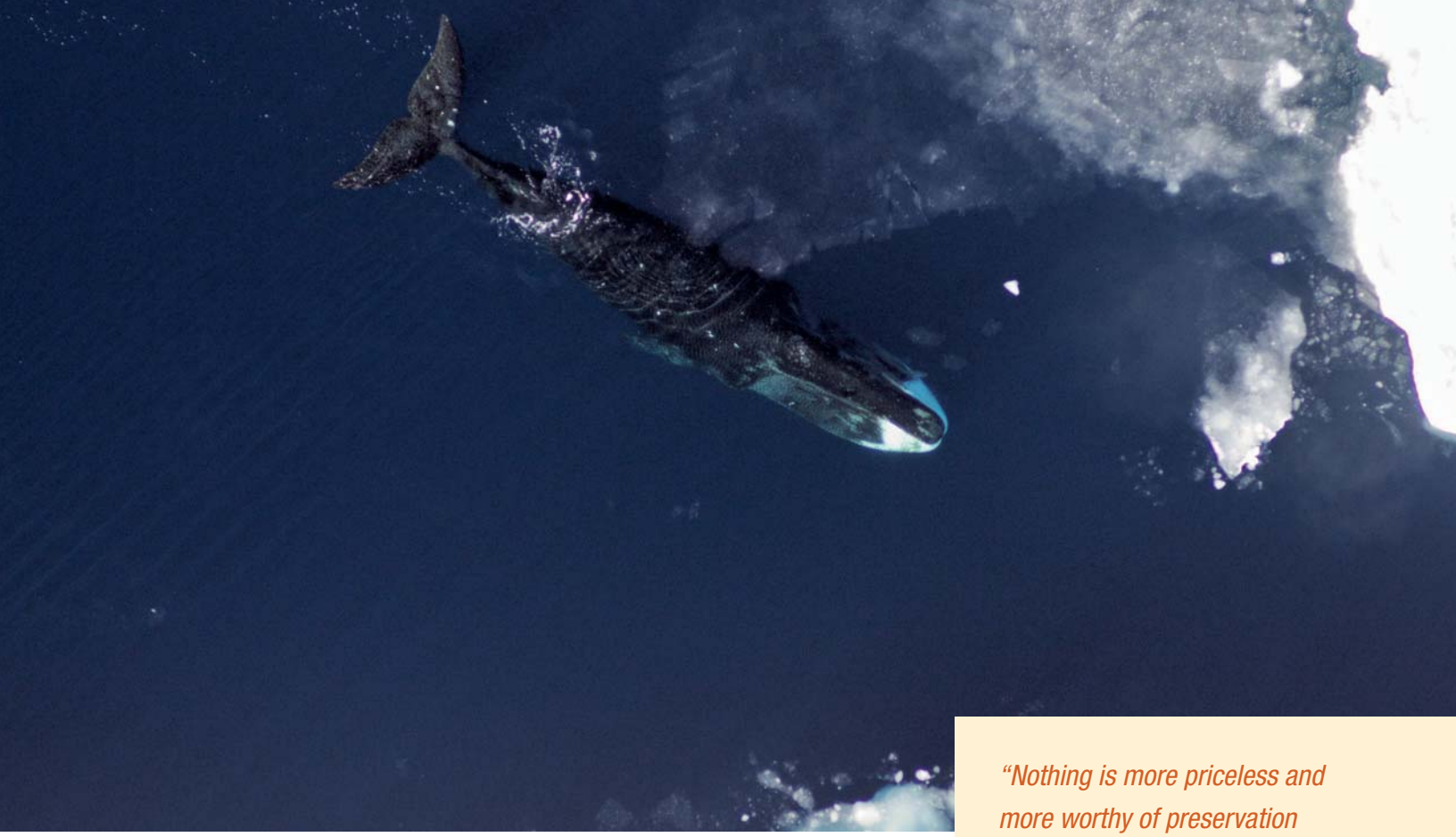
We Must Improve International Cooperation

The ESA continues to help us conserve species in the United States, but many species, such as large whales and marine turtles, can be found throughout the world's ocean. We need to work with the international community to prevent their extinction. For example, we are working closely with several nations that export shrimp to the United States to help them develop TED programs comparable to ours, taking our experience and success worldwide. These programs are now in place in approximately 15 countries, benefiting sea turtle populations around the world.

We Will Use Ecosystem Approaches to Management

The ESA was designed to protect both species and their habitats—the Act explicitly aspires to a world of intact ecosystems. We can strive to make this vision a reality by using ecosystem approaches to management. That means keeping the big picture in mind and planning for environmental variability.

We are already seeing profound changes in ocean conditions associated with rising temperatures. In the Gulf of Maine for instance, the distribution and abundance of zooplankton is shifting in ways that will impact species up the food chain, including endangered North Atlantic right whales. Similar changes are occurring throughout the ocean, and we must monitor and predict these changes so that we can adapt to them quickly.



"Nothing is more priceless and more worthy of preservation than the rich array of animal life with which our country has been blessed."

—President Nixon, upon signing the Endangered Species Act

With this in mind, NMFS scientists are developing the next generation of ocean observation systems. We are estimating whale abundance by listening for them with seafloor-mounted microphones and using aerial drones to survey in places where manned flights are expensive and dangerous. We also use satellite and acoustic tags to track marine species, to open a window under the water and discover where they spend their time.

Increased awareness of what's going on in the ocean will allow us to adapt our management, to keep the big picture in mind and respond to the challenges of a changing climate. In addition to protecting individual species, we must manage for the many inter-relationships between species, human activities, and the larger environment. Such an ecosystem approach to management is key to fulfilling the vision of the ESA, and we are developing the scientific and technical capabilities to make this possible.

We Will Continue the Work We Started

Today, the ocean is a very different place than it was 40 years ago. Thanks to the ESA, we now understand many of the threats faced by marine and anadromous species and are bringing them under control. The populations of many listed species are increasing, aided by our recovery efforts and time. Still, the populations of many species continue to decline and many more species are being listed. We will continue developing new technologies and management approaches, and our work with national and international partners, to ensure the ESA remains effective in an interdependent, rapidly-changing world.

Background

The primary purpose of the Endangered Species Act (ESA) of 1973, as amended, is the conservation of endangered and threatened species and the ecosystems on which they depend. Conservation is defined as "…the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary." As one means of achieving recovery, the ESA requires the development of recovery plans for listed endangered or threatened species (except those species for which it is determined that such a plan will not promote the conservation of the species). These plans organize and guide the recovery process.

The ESA amendments of 1988 added a requirement that the Secretaries of Commerce and the Interior report to Congress every 2 years on the status of efforts to develop and implement recovery plans, and on the status of all species for which recovery plans have been developed (section 4(f)(3)). The Secretary of Commerce has delegated responsibility for endangered and threatened species recovery to the National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Administration (NOAA). This is the 12th Report to Congress on the status of the recovery program for these species.

John McMillan, NOAA

Overview

Recovery is the process of restoring listed species and their ecosystems to the point they no longer require the protections of the ESA. A recovery plan serves as a road map for species recovery—it lays out where to go and how to get there. Without a plan to organize, coordinate, and prioritize recovery actions, the efforts by so many agencies, non-profit organizations, tribal entities, stakeholders, and citizens may be inefficient, ineffective, or misdirected. Focused implementation can use limited resources effectively. Although recovery plans are guidance documents, not regulatory ones, the ESA clearly envisions recovery plans as the central organizing tool guiding each species' progress toward recovery.

From FY 2011–2012, 41% of our listed species were stabilized or improving.

This report summarizes efforts to recover all domestic species under NMFS' jurisdiction from October 1, 2010 through September 30, 2012. It includes a summary table (Table 1) outlining the status of each species, the status of the recovery plan, and the date the last 5-year review was completed. The report also highlights the recovery stories of a selection of species. During the 2 years covered in this report (fiscal years 2011–2012), NMFS had jurisdiction over 70 domestic species[1] of salmon, sturgeon, sawfish, seagrass, mollusks, sea turtles, corals, and marine mammals, and 17 foreign species, for a total of 87 species. In this report, we address the 70 domestic species managed by NMFS, including seven newly listed species:

- Loggerhead sea turtle (*Caretta caretta*), relisted as 9 Distinct Population Segments (DPS) (two domestic DPS) on September 22, 2011 (76 FR 58868):
  - North Pacific Ocean DPS listed as endangered
  - Northwest Atlantic Ocean DPS listed as threatened
- Atlantic sturgeon, listed as 5 DPSs on February 6, 2012 (77 FR 5880 and 5914):
  - Gulf of Maine listed as threatened
  - New York Bight DPS listed as endangered
  - Chesapeake Bay DPS listed as endangered
  - Carolina DPS listed as endangered
  - South Atlantic DPS listed as endangered

[1] "Species" is defined in the ESA as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature.

For the 70 domestic listed species, 34 have final recovery plans, five have draft recovery plans, nine plans are in development, and two have no plans. Because we have many multispecies plans, as well as multiple plans for one species (marine turtles), the number of plans does not directly correspond with the number of species.

- Final recovery plans were published for sei whale, Kemp's ridley sea turtle (revised), Upper Willamette River Chinook Salmon Evolutionarily Significant Unit (ESU), Upper Willamette River steelhead DPS, Central California Coast coho ESU, and Southern California Coast steelhead DPS.
- Draft recovery plans were published for Lower Columbia River Chinook and coho ESUs, Lower Columbia River steelhead DPS, Columbia River chum, Southern Oregon/Northern California Coast coho ESU, South-Central California Coast steelhead DPS, Sacramento River winter-run Chinook ESU, Central Valley spring-run Chinook ESU, Central Valley steelhead DPS, and North Pacific right whales.
- A recovery plan is being revised for Johnson's seagrass.
- Recovery plans are currently under development for Cook Inlet beluga whale, green sturgeon, elkhorn and staghorn corals, yelloweye rockfish, canary rockfish, bocaccio, black abalone, and nine ESUs and DPSs of Pacific salmon and steelhead, respectively.
- Two listed species currently have no recovery plan in development—Guadalupe fur seal and bowhead whale.

Between October 1, 2010, and September 30, 2012, the status[2] of the 70 domestic endangered or threatened species listed under the ESA was:
- 27 (39%) were stabilized or improving.
- 16 (23%) were known to be declining.
- 6 (8%) were mixed, with their status varying by population location.
- 21 (30%) were unknown, because we lacked sufficient trend data to make a determination.

These percentages reflect a minor variation from the previous 2008–2010 Biennial Report, and reflect five newly listed species with unknown population trends. A list of the domestic species managed by NMFS is provided in Table 1. The table lists the status of each species/ESU/DPS (unknown, decreasing, mixed, stable, or increasing), the recovery priority number, the status of the recovery plan, and the date the last 5-year review was completed. Additional information on these species is available online at www.nmfs.noaa.gov/pr/species/index.htm.

[2] The methodology for determining the status of species can be found in the Program Performance Reporting Business Rules for PSP at http://www.nmfs.noaa.gov/op/pds/documents/33/102/02/33-102-02-03-FPR.pdf.

Partnerships for Recovery

Species Recovery Grants

Recovery actions are funded and implemented by many partners—federal, state, tribal, non-governmental, academic, and private. The Species Recovery Grants to States and Species Recovery Grants to Tribes Programs are NMFS' primary mechanism for providing funding to states, tribes, and other partners to implement high-priority recovery actions for marine and anadromous species listed under the ESA (except Pacific salmonids). The Species Recovery Grants to Tribes Program began in 2010 to provide grants to federally recognized tribes to support conservation efforts for listed species. Partnerships with states, which share management authority and responsibilities for listed species, are essential to achieving our shared recovery goals. Recovery of listed species requires a suite of activities, including on-the-ground management activities, monitoring, scientific research, and education and outreach—all of which are supported through this Program.

The Species Recovery Grants Programs seek to fund the highest priority recovery actions—actions needed to prevent extinction—as identified in recovery plans. Conservation activities for species under consideration for listing or newly listed species without a completed recovery plan receive lower priority for funding but may also be supported by Species Recovery Grants.

Recovery plans are available online at www.nmfs.noaa.gov/pr/recovery/plans.htm

Recovery plans may also be requested by writing to:

Endangered Species Division—Recovery Plans
Office of Protected Resources—F/PR3
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

This report is available online via the NMFS Office of Protected Resources website at www.nmfs.noaa.gov/pr/laws/esa/biennial.htm.

Pacific Coastal Salmon Recovery Fund

Congress established the Pacific Coastal Salmon Recovery Fund (PCSRF) in 2000 to protect, restore, and conserve Pacific salmon and steelhead populations and their habitats. NMFS manages the PCSRF program and provides funding to states and tribes to implement restoration projects in the Pacific Coast region—Washington, Oregon, California, Nevada, Idaho, and Alaska. Thousands of PCSRF projects have been implemented since the program's inception, from providing fish passage to restoring wetlands, and have made important contributions to the health of threatened and endangered salmon and steelhead populations.

PCSRF provides a critical source of stable funding that supports the ability of managers to conduct all phases of restoration and recovery activities, including assessment, planning, implementation, and monitoring. States and tribes have used this funding for thousands of projects, resulting in significant changes in habitat conditions and availability, as well as establishing concrete planning and monitoring programs to support prioritization and tracking of salmon and steelhead population conservation efforts.

Species Status

ESA-listed species under NMFS jurisdiction including listing status, trends, priority numbers, recovery plan status, and 5-year review completion.

SEA TURTLES

Species / ESU/DPS	Date Listed / Reclassified	ESA Status	Species / ESU/ DPS Trend	Recovery Priority Number	Status of Recovery Plan	Date 5-Year Status Review Completed
Green sea turtle						
—*Breeding colony populations in Florida, Pacific coast Mexico*	7/28/1978	E	Increasing (FL); Declining (Mexico)	5	Completed 1/1998	08/2007, review initiated 10/2012
—*Rangewide*	7/28/1978	T	Declining	5	Completed 1/1998 (Pacific); 10/1991 (Atlantic)	08/2007, review initiated 10/2012
Hawksbill sea turtle	6/2/1970	E	Declining	1	Completed 1/1998 (Pacific); 12/1993 (Atlantic)	08/2007, review initiated 10/2012
Kemp's Ridley sea turtle	12/2/1970	E	Increasing	5	Completed 8/1992; Revision Completed 9/2011	08/2007, review initiated 10/2012
Leatherback sea turtle	6/2/1970	E	Declining (Pacific); Mixed (Atlantic)	1	Completed 1/1998 (Pacific); 4/1992 (Atlantic)	08/2007, review initiated 10/2012
Loggerhead sea turtle						
—*Northwest Atlantic Ocean*	7/28/1978; 09/22/2011	T	Declining	5	12/1991; Revision Completed 1/2009	08/2009 (full status review)
—*North Pacific Ocean*	7/28/1978; 09/22/2011	E	Declining	5	Completed 1/1998	08/2009 (full status review)
Olive Ridley sea turtle						
—*Breeding colony populations of Pacific coast Mexico*	7/28/1978	E	Mixed	5	Completed 1/1998	08/2007, review initiated 10/2012
—*Rangewide*	7/28/1978	T	Mixed	5	Completed 1/1998	08/2007, review initiated 10/2012

PACIFIC SALMON

Species / ESU/DPS	Date Listed / Reclassified	ESA Status	Species / ESU/ DPS Trend	Recovery Priority Number	Status of Recovery Plan	Date 5-Year Status Review Completed
Northwest Region						
—*Puget Sound Chinook ESU*	3/24/1999; 6/28/2005[2]	T	Stable or Increasing	1	Completed 1/2007	08/2011
—*Hood Canal Summer-run chum ESU*	3/25/1999; 6/28/2005[2]	T	Stable or Increasing	1	Completed 5/2007	08/2011
—*Ozette Lake sockeye ESU*	3/25/1999; 6/28/2005[2]	T	Stable or Increasing	1	Completed 5/2009	08/2011
—*Puget Sound steelhead DPS*	5/11/2007	T	Declining	1	Under Development	08/2011
—*Upper Willamette River Chinook ESU*	3/24/1999; 6/28/2005[2]	T	Stable or Increasing	1	Completed 8/2011	08/2011
—*Lower Columbia River Chinook ESU*	6/28/2005[2]	T	Stable or Increasing	1	Draft Completed 5/2012	08/2011
—*Lower Columbia River steelhead DPS*	3/19/1998; 1/5/2006[2]	T	Stable or Increasing	1	Draft Completed 5/2012	08/2011
—*Lower Columbia River Coho ESU*	3/24/1999; 6/28/2005[2]	T	Stable or Increasing	1	Draft Completed 5/2012	08/2011
—*Columbia River chum ESU*	3/25/1999; 6/28/20052	T	Stable or Increasing	1	Draft Completed 5/2012	08/2011

Species Status

PACIFIC SALMON (continued)

Species / ESU/DPS	Date Listed / Reclassified	ESA Status	Species / ESU/ DPS Trend	Recovery Priority Number	Status of Recovery Plan	Date 5-Year Status Review Completed
— *Upper Willamette River steelhead DPS*	3/25/1999; 1/5/2006[2]	T	Stable or Increasing	1	Completed 8/2011	08/2011
— *Upper Columbia River, Spring Run Chinook ESU*	3/24/1999; 6/28/2005[2]	E	Stable or Increasing	1	Completed 10/2007	08/2011
— *Snake River Spring / Summer-run Chinook ESU*	4/22/1992; 6/28/2005[2]	T	Stable or Increasing	1	Under Development	08/2011
— *Snake River Fall-run Chinook ESU*	4/22/1992; 6/28/2005[2]	T	Stable or Increasing	1	Under Development	08/2011
— *Upper Columbia River steelhead DPS*	8/18/1997; 1/5/2006[2]	T	Stable or Increasing	1	Completed 10/2007	08/2011
— *Middle Columbia River steelhead DPS*	3/25/1999; 1/5/2006[2]	T	Stable or Increasing	1	Completed 09/2009	08/2011
— *Snake River Basin steelhead DPS*	8/18/1997; 1/5/2006[2]	T	Stable or Increasing	1	Under Development	08/2011
— *Snake River sockeye ESU*	11/20/1991; 6/28/2005[2]	E	Unknown	3	Under Development	08/2011
— *Oregon Coast coho ESU*	8/10/1998[2]; 2/11/2008	T	Stable or Increasing	1	Under Development	08/2011
Northwest and Southwest Regions						
— *Southern Oregon/Northern California Coast coho ESU*	5/6/1997; 6/28/2005[2]	T	Unknown	1	Draft Completed 1/2012	11/2011
Southwest Region						
— *Central California Coast coho ESU*	10/31/1996; 6/28/2005[2]	E	Declining	1	Completed 09/2012	08/2011
— *Northern California steelhead DPS*	6/7/2000; 1/5/2006[2]	T	Unknown	5	Under Development	12/2011
— *California Coastal Chinook ESU*	9/16/1999; 6/28/2005[2]	T	Unknown	3	Under Development	08/2011
— *Central California Coast steelhead DPS*	8/18/1997; 1/5/2006[2]	T	Unknown	3	Under Development	12/2011
— *South-Central California Coast steelhead DPS*	8/18/1997; 1/5/2006[2]	T	Unknown	3	Draft Completed 10/2012	12/2011
— *Southern California Coast steelhead DPS*	8/18/1997; 05/01/2002[3]; 1/5/2006[2]	E	Unknown	3	Completed 1/2012	12/2011
— *Sacramento River Winter-run Chinook ESU*	11/5/1990; 1/4/1994[4]; 6/28/2005[2]	E	Stable or Increasing	3	Draft Completed 10/2009	08/2011
— *Central Valley Spring-run Chinook ESU*	9/16/1999; 6/28/2005[2]	T	Stable or Increasing	7	Draft Completed 10/2009	08/2011
— *California Central Valley steelhead DPS*	3/19/1998; 1/5/2006[2]	T	Unknown	7	Draft Completed 10/2009	08/2011

Species Status

ATLANTIC SALMON

Gulf of Maine DPS	11/17/2000; 6/19/2009	E	Declining	1	Completed 11/2005	12/2006

NON-SALMONID FISH

Species / ESU/DPS	Date Listed / Reclassified	ESA Status	Species / ESU/ DPS Trend	Recovery Priority Number	Status of Recovery Plan	Date 5-Year Status Review Completed
Atlantic Sturgeon						
— *Gulf of Maine DPS*	2/6/2012	T	Unknown	5	Not Started	N/A
— *New York Bight DPS*	2/6/2012	E	Unknown	5	Not Started	N/A
— *Chesapeake Bay DPS*	2/6/2012	E	Unknown	5	Not Started	N/A
— *Carolina DPS*	2/6/2012	E	Unknown	5	Not Started	N/A
— *South Atlantic DPS*	2/6/2012	E	Unknown	5	Not Started	N/A
Bocaccio — *Puget Sound / Georgia Basin DPS*	4/28/2010	E	Declining	3	Under Development	N/A
Canary rockfish — *Puget Sound/Georgia Basin DPS*	4/28/2010	T	Unknown	7	Under Development	N/A
Eulachon — *Southern DPS*	3/18/2010	T	Declining	7	Expected to Begin in 2013	N/A
Green sturgeon — *Southern DPS*	4/7/2006	T	Unknown; likely Declining	5	Under Development	In progress
Gulf sturgeon	9/30/1991	T	Stable	8	Completed 9/1995	09/2009
Shortnose sturgeon	3/11/1967	E	Mixed	5	Completed 12/1998	N/A
Smalltooth sawfish — U.S. DPS	4/1/2003	E	Stable	7	Completed 1/2009	10/2010
Yelloweye rockfish — *Puget Sound / Georgia Basin DPS*	4/28/2010	T	Unknown	7	Under Development	N/A

PLANTS

Johnson's seagrass	9/14/1998	T	Stable	7	Completed 09/2002	11/2007

INVERTEBRATES

Black abalone	1/14/2009	E	Declining	3	Under Development	N/A
Elkhorn coral	5/9/2006	T	Declining	3	Under Development	N/A[5]
Staghorn coral	5/9/2006	T	Declining	3	Under Development	N/A[5]
White abalone	5/29/2001	E	Declining	1	Completed 10/2008	N/A

SEALS AND SEA LIONS

Guadalupe fur seal	12/16/1985	T	Increasing	10	None	N/A
Hawaiian monk seal	11/23/1976	E	Declining	1	Completed 3/1983; Revision Completed 08/2007	08/2007
Steller sea lion — *eastern DPS*	4/5/1990; 11/26/1990; 5/5/1975	T	Increasing	10	Completed 12/1992; Revision Completed 3/2008	Draft 04/2012
Steller sea lion — *western DPS*	4/5/1990; 11/26/1990; 5/5/1997[6]	E	Mixed	7	Completed 12/1992; Revision Completed 3/2008	In progress

Species Status

WHALES

Beluga Whale – Cook Inlet DPS	10/22/2008	E	Declining	2	Under Development	N/A
Blue whale	6/2/1970	E	Unknown	5	Completed 7/1998	N/A
Bowhead whale	6/2/1970	E	Increasing	7	None	N/A
Fin whale	6/2/1970	E	Unknown	9	Completed 7/2010	12/2011
Humpback whale	6/2/1970	E	Increasing	5	Completed 11/1991	In progress
Killer whale – Southern Resident DPS	11/18/2005	E	Declining	3	Completed 1/2008	03/2011
North Atlantic right whale	6/2/1970; 03/06/2008	E	Increasing	1	Completed 5/2005	09/2012
North Pacific right whale	6/2/1970; 03/06/2008	E	Unknown	4	Draft Completed 1/2013	07/2012
Sei whale	6/2/1970	E	Unknown	11	Completed 12/2011	06/2012
Sperm whale	6/2/1970	E	Unknown	5	Completed 12/2010	01/2009

[1] Recovery Priority Numbers are designated according to guidelines published by NMFS on June 15, 1990 (55 FR 24296). Priorities are designated from 1 (high) to 12 (low) based on the following factors: degree of threat, recovery potential, and conflict with development projects or other economic activity. See Appendix A for further information on NMFS Recovery Priority Numbers, including criteria used to designate numbers.

[2] In *Alsea Valley Alliance v. Evans*, 161 F. Supp. 2d 1154 (D. Or. 2001) (*Alsea*), the U.S. District Court in Eugene, Oregon, ruled that NMFS could not exclude hatchery fish within the ESU when listing. Although the Alsea ruling affected only one ESU, subsequent to the ruling, NMFS initiated new status reviews for 27 ESUs and, in 2005, re-listed 15 ESUs of salmon with revised definitions of the populations to be included in the ESU, delisted one ESU (OR Coast coho) and listed one ESU (Lower Columbia River coho); and in 2006, re-listed 10 ESUs of steelhead (and called them DPSs).

[3] This ESU was first listed on 8/18/1997; the southern range extension to the U.S.-Mexico border was added to the listing for this ESU via a final rule on 5/1/2002.

[4] This ESU was first emergency-listed as threatened on 8/4/1989, then officially listed as threatened on 11/5/1990, then reclassified as endangered on 1/4/1994.

[5] In December 2012, elkhorn and staghorn corals were proposed for reclassification from threatened to endangered. A final determination will be made by December 2013. The proposed rule serves the same purpose of a 5-yr review.

[6] This species was first listed as threatened via a 240-day emergency rule on 4/5/1990, then officially listed as threatened in a final rule on 11/26/1990. NMFS separated the species into western and eastern DPSs via a final rule on 5/5/1997, which maintained the eastern DPS as threatened and reclassified the western DPS as endangered.

Recovery Stories

Recovery of threatened and endangered species is a tremendous, long-term challenge, but it also offers long-term benefits to the health of our environment and our communities. Recovery is the process of conserving these species and ecosystems as well as the biological goal of listed species becoming enduring members of the ecosystems we all depend upon.

Actions to achieve a species' recovery may require

- Restoring or preserving habitat.
- Minimizing or offsetting threats to species.
- Enhancing population numbers.
- A combination of all these actions.

Actions taken to recover the species in our care also help provide communities with healthier ecosystems, cleaner water, greater opportunities for recreation, and the opportunity for current and future generations to share the benefits of diverse and healthy natural resources.

While NMFS is working to recovery all listed species under our jurisdiction, the following stories highlight examples of the cooperative actions taken to recover our threatened and endangered species by private citizens; federal, state, and local agencies; tribes; interested organizations; and industry.

The species featured include:

Marine Turtles
Central California Coast Coho
Gulf Sturgeon
Shortnose Sturgeon
White Abalone
The Eastern DPS of Steller Sea Lion
Hawaiian Monk Seal
Southern Resident Killer Whale
Bowhead Whale

MARINE TURTLES — Protections on Land and Sea

Marine turtles are among the largest living reptiles. They have scales, are cold-blooded, spend most of their lives in the ocean, breathe air, and lay their eggs on land. Six of the seven global species of marine turtles are listed under the ESA, with the Australian flatback sea turtle being the sole exception. Three species were listed in 1970 under the precursor to the ESA, and the other three were listed in 1978.

NMFS and the U.S. Fish and Wildlife Service (FWS) share responsibility for the conservation, management, and recovery of sea turtle species found in waters and lands under U.S. jurisdiction. The agencies work closely together on recovery activities, with NMFS primarily responsible for recovery actions in the water and FWS primarily responsible for recovery actions on land, such as nesting beaches.

Leatherback Critical Habitat

The leatherback turtle *(Dermochelys coriacea)* was listed as endangered throughout its range on June 2, 1970 (35 FR 8491). It is the largest, deepest diving, and most migratory and wide ranging of all sea turtles.

In January 2012, NMFS designated critical habitat for the leatherback sea turtle in coastal and offshore waters off California, Oregon, and Washington along the U.S. West Coast. While no nesting occurs along the U.S. West Coast, the waters designated as critical habitat have been identified as critical foraging habitat for the Pacific population. By protecting this important source of food, it is hoped the major declines in leatherback nesting along the Pacific coasts of Mexico and Costa Rica as well as in Malaysia, Papua New Guinea and Papua-Indonesia in the western Pacific, will be reversed. The designation includes a total of 41,914 square miles of marine habitat, comprised of two areas. The first area is approximately 16,910 square miles stretching along the California coast from Point Arena to Point Arguello east of the 3,000-meter depth contour; and the second area is approximately 25,004 square miles stretching from Cape Flattery, Washington, to Cape Blanco, Oregon, east of the 2,000-meter depth contour.

Loggerhead DPS Listing

In September 2011, NMFS and FWS divided the listing for loggerhead sea turtles, first listed as threatened throughout their range in 1978, into nine DPSs under the ESA. Of the two DPSs found in U.S. waters, the Northwest Atlantic DPS was listed as threatened and the North Pacific DPS was listed as endangered.

Loggerheads are circumglobal, occurring throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. While they are the most abundant species of sea turtle found in U.S. coastal waters, loggerheads face major threats on both nesting beaches and in the marine environment. The greatest cause of decline, and the continuing primary threat to loggerhead turtle populations worldwide, is incidental capture in fishing gear, primarily in longlines and gillnets, but also in trawls, traps and pots, and dredges. NMFS, FWS, and a number of state agencies have promulgated regulations to eliminate or reduce these threats to sea turtles on land and sea.

CENTRAL CALIFORNIA COAST COHO—Swimming with History

The creeks and streams winding through the coastal mountains and redwood forests of California's Central Coast once supported hundreds of thousands of wild coho salmon. From Mendocino County south to Santa Cruz, coastal streams swarmed with Central Coast coho salmon—so many that pitchforks were sometimes used to pluck them from the water.

These salmon were a mainstay of food for Native Americans and early Catholic Missionaries such as Father Junipero Serra, who diverted a stream in Carmel to build a lagoon full of salmon and steelhead in the late 18th century.

As the Mission era drew to a close in the 1830s, ownership of land shifted from the Catholic Church to private individuals. Land grants of thousands of acres of mature forests and ample water supplies attracted large number of settlers to provide the lumber needed by the burgeoning population in San Francisco, even before the Gold Rush.

Sawmills began sprouting up along coastal streams, blocking access to spawning grounds and dumping into the water copious amounts of sawdust and other materials toxic to salmon. Forests became moonscapes, resulting in erosion and landslides, further degrading the streams with excessive silt. As human populations grew in the area, so did the degradation of salmon habitat from gravel mining, overfishing, and competing interests for water.

Central California Coast (CCC) coho salmon were listed as threatened under the ESA in 1996 and then, due to their dire status, relisted to endangered in 2005. By the winter of 2006/2007, scientific research showed the coho population declined 99 percent from 1930s levels in just 70 years—one human lifetime. In 2009, only 500 adult CCC coho salmon were estimated range-wide and were described as one of the most endangered salmon on the West Coast.

In a far-reaching effort to prevent extinction of CCC coho salmon, NMFS is working cooperatively with state and federal agencies, scientists, non-profit organizations, restoration communities, private entities, and many others. Accomplishments include (1) release of a September 2012 CCC coho salmon Final Recovery Plan, (2) formation of a State of California and NMFS Priority Action Coho Team, (3) coordinated and focused watershed restoration, and (4) advances in our conservation hatcheries to preserve the genetic diversity of CCC coho salmon.

In 2012–2013, approximately 500 adult CCC coho salmon returned to tributaries of the Russian River to spawn—the largest number of adults witnessed in decades.

Some of the key recovery partners include water agencies, timber companies, county Resource Conservation Districts, U.S. Army Corp of Engineers, University of California Cooperative Extension/Sea Grant, The Nature Conservancy, State of California, and many others. In 2012, the California State Legislature passed a Coho HELP Act to streamline restoration work.

Stream restoration and monitoring are often the focus of recovery work, but California's CCC coho salmon restoration program also includes two conservation hatchery captive broodstock programs that have been pivotal in preventing extinction: the Russian River Coho Salmon Recovery Program at the Warm Springs Hatchery in Sonoma County and the Monterey Bay Salmon and Trout Project (MBSTP) at the Kingfisher Flat Genetic Conservation Hatchery in Santa Cruz County.

Leveraging Funds & Stimulating Local Economies

NMFS has awarded states and tribes an average of $79 million annually since the inception of the PCSRF. The program has also leveraged over $860 million in total matching state and other funds. These investments have significant impacts on local economies and support local job development. Recent analyses suggest that up to 17 new "green" jobs and $1.86 million in additional economic activity result for each $1 million investment of PCSRF and state-matching funds *(Edwards et al. 2012; Nielsen-Pincus and Moseley 2010).*

Every dollar invested in salmon restoration travels through the economy in several ways—restoration project managers hire consultants, contractors, and employees to design, implement, and maintain projects; consultants and contractors hire field crews, rent or purchase equipment, and buy goods and services; and employees spend wages on goods and services to support their livelihoods in their own community *(Nielsen-Pincus and Moseley 2009)*.

Pacific Coastal Salmon Recovery Fund Dollars at Work

In 2010, for example, funding provided by the Oregon Watershed Enhancement Board and others contributed to an extensive wetland restoration effort by the Tillamook Estuaries Partnership. Historic logging and farming practices, infrastructure development, and the introduction of non-native plants contributed to degraded habitat quality and quantity. The 58-acre Miami Wetlands Enhancement Project enhances tidal/freshwater wetlands along the Miami River to support outmigrating salmon, including the largest remaining chum population on the Oregon Coast.

Natural hydrology now is restored throughout the Miami wetlands. This was accomplished by filling 2,600 feet of linear ditch and stream channels to raise groundwater levels and provide a source of flow to adjacent waterways. The resulting 4,500 feet of new sinuous stream and tidal channels increases the quantity of salmon rearing habitat in the project area by 56 percent. Additionally, the existing linear stream channel was relocated out of the Highway 101 right-of-way and a longer sinuous channel was created within the wetland. Nearly 200 pieces of large wood placed within the stream channel and floodplain provide low velocity refuge areas for salmon during flooding and provide a rich food source for fish.

In addition to the Tillamook Estuaries Partnership, over 25 partners and landowners came together to make this project a success. The project contributed $1.7 million to the local economy and supported 30 full-time family wage jobs. The project's long-term benefits will continue to take hold through ongoing public education and monitoring opportunities.

At these hatcheries, wild coho are captured by biologists, raised to adulthood, and spawned using a genetic matrix to maximize diversity and prevent inbreeding. In the hatchery, eggs are incubated and the young are raised to various ages, tagged, and then released into streams, to which they will return 3 years later as adults to spawn and die.

Cutting-edge practices of both programs have resulted in significant increases over time in the number of young released into the wild. The Russian River program prevented coho salmon extirpation in the watershed with a continued rise in returning adults since the program started in 2001. In 2012–2013, approximately 500 adult CCC coho salmon returned to tributaries of the Russian River to spawn—the largest number of adults witnessed in decades. For the MBSTP, NOAA's Pacific Coastal Salmon Recovery Fund and the State of California Fisheries Restoration Grant Program have provided significant financial support to safeguard its continued operation. Between 2009 and 2011, the MBSTP realized a 500 percent increase in egg and young coho survival.

Many of California's coastal communities are embracing the Recovery Plan and breaking down barriers to focus restoration, rebuild populations, and invest in a fresh push to preserve the legacy of coho salmon along California's central coast.

GULF STURGEON—A Watershed Moment for Recovery

The Gulf sturgeon *(Acipenser oxyrinchus desotoi)* was listed as a threatened species in 1991. This anadromous species (migrating between freshwater to spawn and marine water to forage) is jointly managed by NMFS and FWS; generally NMFS leads efforts in the estuarine and marine waters and FWS leads in the rivers.

Gulf sturgeon researchers and managers meet annually each fall, but the fall 2009 meeting was a turning point in Gulf sturgeon conservation. During the presentations of the species "5-year review" and population assessment, managers and researchers identified a disconnect between their conservation goal, recovery throughout the Gulf of Mexico, and the research being conducted on individual riverine populations. The group worked to identify a 5-year monitoring plan that would provide the data necessary for future stock assessments to assess abundance trends and survival.

D.Fox, State of Florida Permit No. SAL-12-0891

Since 2009, the Gulf sturgeon community has worked together to standardize survey and sampling methodologies so data can be pooled. Collectively the data will allow for inter-basin comparison of population trends and an overall species population assessment. Each partner has contributed to the overall effort by attending workshops to standardize tagging protocols, contributing data to a centralized database, sharing personnel, and coordinating sampling efforts. NMFS and FWS have purchased tags and equipment, organized and hosted workshops, and developed and supported a centralized on-line database. This standardized sampling protocol was later adopted in the aftermath of the Deepwater Horizon oil spill; using our methodologies and funds from the Natural Resource Damage Assessment process, we investigated movement patterns of Gulf sturgeon in the marine environment.

Coastal migration data have revealed new and critical information on shortnose sturgeon.

After 3 years we have completed the initial task of the 5-year monitoring program wherein we have tagged and released 300 Gulf sturgeon with acoustic tags. Receivers are strategically situated at the mouths of rivers and upstream to document presence and movement of individuals that will allow us to determine both mortality rates and migratory pathways. We are collecting information from those tags via the remote receivers for the next 5 years.

At this time, the preliminary results gathered in the first 3 years are being used by a graduate student at the University of Florida in a thesis estimating natural mortality rates of the Gulf sturgeon collectively and within riverine populations. This initial analysis will provide important feedback on the study design and data collection. We look forward to these new data and them informing Gulf sturgeon population estimates that will aid in the recovery of the species, both by assessing trends and identifying precarious life history stages. We anticipate a full stock assessment with all data collected during the 5-year monitoring program to be presented at our annual meeting in fall 2016.

SHORTNOSE STURGEON—Unraveling Mysteries to Aid Recovery

Shortnose sturgeon *(Acipenser brevirostrum)* are found in most major river systems along the East Coast, from the Saint John River in New Brunswick, Canada, to the St. Johns River in Florida. Recent data from the University of Maine, Maine Department of Marine Resources, and the U.S. Geological Survey's Conte Lab in Massachusetts have provided an intriguing view of the migration patterns and habitat use of northern populations of shortnose sturgeon.

Contrary to the prevailing perception that they were confined to large coastal rivers, the data show these northern populations of shortnose sturgeon migrate to and use small coastal rivers as well. Researchers have documented extensive coastal migrations between the Kennebec and Penobscot Rivers as well as other small coastal rivers in Maine (e.g., Darmariscotta, St. George, Medomak, and Passagasawakeag), and the Merrimack River, Massachusetts, and rivers in New Hampshire (Piscataqua) and Maine (Fernandes et al. 2010, Zydlewski et al. 2011). Telemetry data from 2008 to 2010 in the Gulf of Maine indicate that up to 70 percent of adult shortnose sturgeon frequently moved between the Kennebec and Penobscot Rivers and that over half of these coastal migrants used small coastal rivers in between the two larger rivers. Telemetry data also indicate that 80 percent of shortnose sturgeon using smaller coastal river systems during these migrations moved more than 6.2 miles upstream (Zydlewski 2011).

Although the motivations for their migration patterns are not well understood, these coastal migration data have revealed new and critical information on shortnose sturgeon population dynamics, habitat use, and life history. Managers will be able to use this information to more accurately identify critical habitat and potential habitat restoration projects, benefiting sturgeon recovery and with the potential to restore populations to what might have been their historic range.

The use of new river systems as potential foraging areas and refugia, as well as the potential expansion of spawning populations into additional river systems, are extremely positive steps toward recovery of shortnose sturgeon in the Gulf of Maine and eventually throughout their range along the East Coast.

Robert Michelson, NOAA permit No. 15614

WHITE ABALONE—Breeding Back from the Brink

In 2001, white abalone received the dubious distinction of being the first marine invertebrate listed as endangered under the ESA. The marine mollusk was once prevalent off the West Coast south of Point Conception to Baja California (with historical estimates of more than 300,000 individuals off the coast of California) but will likely number fewer than 1,000 within 10 to 15 years. A critical recovery action that may help avert the extinction of the species is the development of a captive propagation and enhancement program to reintroduce captive-grown white abalone back into the wild. Although there are significant hurdles to overcome, researchers with NMFS and our partners are making headway.

Unlike their better known relatives of pink, green, red, and black abalone, white abalone live at deeper depths of about 70 to 200 feet. Here, the species was more protected from recreational and commercial fishing until the advent of compressed air diving technology in the early 1960s.

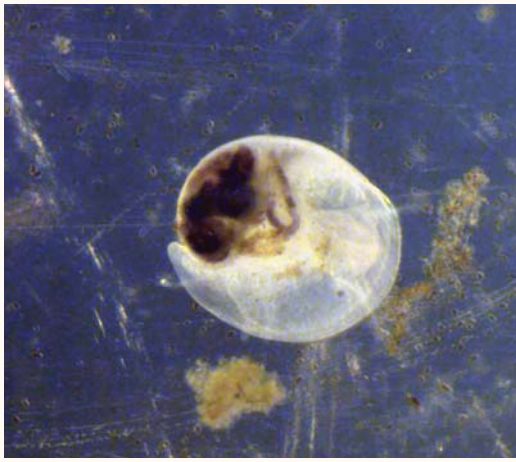
Intense commercial harvesting of white abalone began in 1969 and peaked in 1972 at about 143,000 pounds of white abalone per year. Just 6 years later, the fishing industry caught less than 5,000 pounds. Unfortunately it appears that there have been few, if any, offspring produced since the late 1960s or early 1970s.

White abalone will likely number fewer than 1,000 within 10 to 15 years.

A likely reason for the inability for white abalone to rebound is their need to be close to each other when reproducing. White abalone are considered "broadcast spawners," shooting eggs and sperm into the water by the millions when environmental conditions are right. One female can release as many as 10 million eggs at one time, but must be within 2 meters of a spawning male for fertilization to occur. The relatively short duration but high impact of the fishery diminished the density of the species, making it difficult for the remaining individuals to reproduce.

From 2002 to 2004 NOAA began research cruises off southern California at Tanner Bank and other locations to estimate the number of remaining white abalone in prime areas and locate important habitat where captive-raised abalone could be reintroduced. Scientists found plenty of good habitat, but no young offspring and very few adult abalone close enough to reproduce.

Follow-up surveys were conducted in 2008 and 2010 with discouraging results. The number and density of white abalone had declined precipitously since the previous survey, indicating that more animals were dying than being reproduced in the wild. These results suggest that the wild population is approaching extinction and therefore immediate active restoration actions are necessary to reverse the downward abundance trend. These actions are critical to species' recovery and require a secure and stable funding source.



Kristin Aquilino, UC-Davis, NOAA Permit No. 14344

Two-day old swimming white abalone larva.

The Bodega Marine Laboratory (BML), under the auspices of NMFS and in partnership with five other facilities, oversees a program to determine if captive propagation and enhancement is an effective recovery tool for restoring wild, self-sustaining populations of white abalone. Analyses by BML indicate that one significant outplant of abalone (approximately 20,000 juveniles) to the recovery area would be the most effective approach to initiate recovery, as opposed to successive outplants of a smaller number of animals.

The first successful spawning in more than a decade occurred in 2012 at the Aquarium of the Pacific and at the University of California, Santa Barbara. Although the embryos developed normally into swimming larvae, only one batch survived and successfully settled on substrate to grow into juveniles. BML is currently monitoring the growth and survival of these juveniles and initiating requests to collect additional broodstock to increase the chances for successful future spawning. They are also exploring methods for improving settlement success.

There is still a long way to go. However, with persistence, dedication, and a bit of ingenuity, we may just be able to help breed white abalone back from the brink of extinction.

THE EASTERN DPS OF STELLER SEA LION — A Recovery Success

The eastern DPS of Steller sea lion *(Eumetopias jubatus)* is an ESA success story, with continued increase in abundance and no population-level threats to its viability identified for the foreseeable future (Figure 1). NMFS has proposed to delist this species because it has recovered and is no longer likely to become in danger of extinction. A final decision is expected in the coming months.

The recovery of the eastern DPS of Steller sea lions is a testament to the value of the ESA.

First listed range-wide as threatened under the ESA in 1990 following severe population declines, measures were put into place to protect Steller sea lions from shooting, disturbance, direct and indirect fishery interactions, and other threats. Steller sea lions were later split into an Eastern and Western DPS in 1997 following an intensive period of research on genetic structure, population trends, movements, and other factors. The eastern DPS includes sea lions living in southeast Alaska, British Columbia, California, and Oregon, with the dividing line occurring in the Gulf of Alaska (see Figure 2). With the split, NMFS retained the threatened listing for the eastern DPS and changed the ESA status of the western DPS to endangered due to their continued decline.

NMFS has undertaken recovery planning, research, and management for more than two decades to facilitate the conservation of Steller sea lions, with great results for the eastern DPS. NMFS, with the assistance of a diverse Recovery Team of scientists and stakeholders, released a revised Recovery Plan for Steller sea lions in 2008. The Recovery Plan found the eastern DPS would continue to recover, based on long-term sustained population growth, in the face of continued threats from environmental variability, killer whale predation, toxic substances, disturbance, and shooting. NMFS initiated a 5-year status review of the eastern DPS to determine if its listing classification was accurate and based on the best available scientific and commercial data in June 2010 and was petitioned during the comment periods by three states to delist the species. In the draft status review released on April 18, 2012, NMFS concluded that the recovery criteria in the Recovery Plan had been met and the analysis of possible threats under the ESA listing factors indicated that none are likely to cause this DPS to become in danger of extinction in the foreseeable future throughout all or a significant portion of its range. Therefore NMFS released a proposed rule to delist this species at the same time. We received over 1,000 comments from individuals, scientific organizations, other agencies, fishing organizations, and others on these documents. We are considering the large amount of information received and expect to release our final decision in the spring of 2013.

L.A. Jemison, Alaska Department of Fish and Game, NOAA Permit No. 358-1769

The recovery of the eastern DPS of Steller sea lion will contribute to the long-term health of North Pacific Ocean ecosystems from central California through southcentral Alaska. As marine predators who forage on a variety of fish, cephalopods, and other species, Steller sea lions are vital components of numerous marine food webs. Their long-term health and viability is an indicator of, and a contributor to, the underlying health of those food webs and related ecosystems. Their recovery is a testament to the value of the ESA, strong research, and strong protections in ensuring the long-term health of marine ecosystems. We continue to use these tools in our work to recover the Western DPS.

Figure 1. RANGE AND BREEDING ROOKERIES OF THE STELLER SEA LION

The dotted line at 144ºW longitude delineates the western and eastern distinct population segments (DPS).

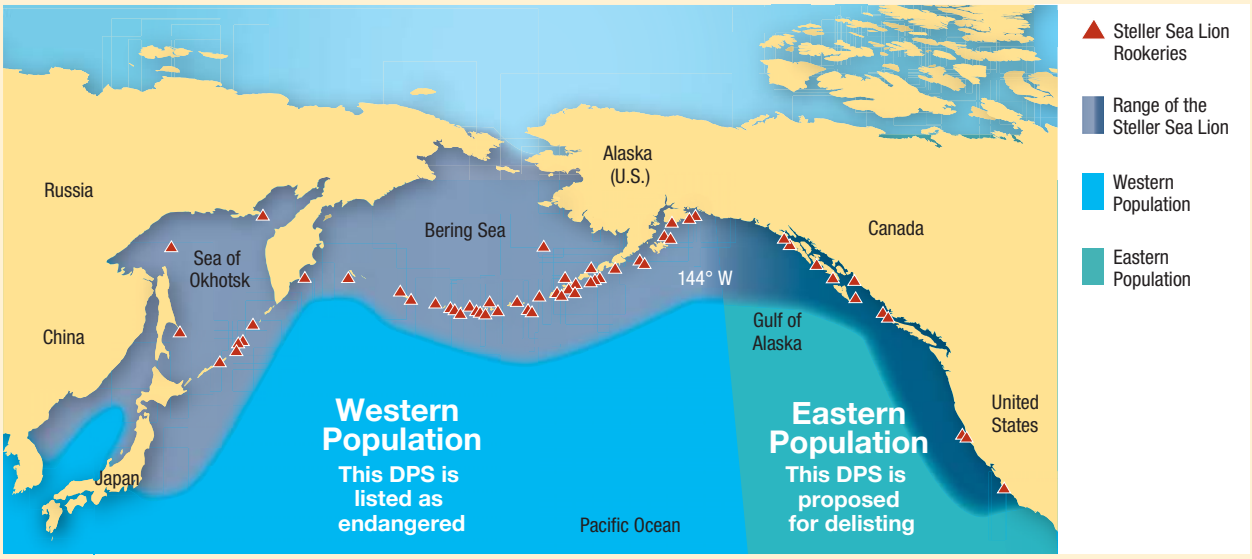
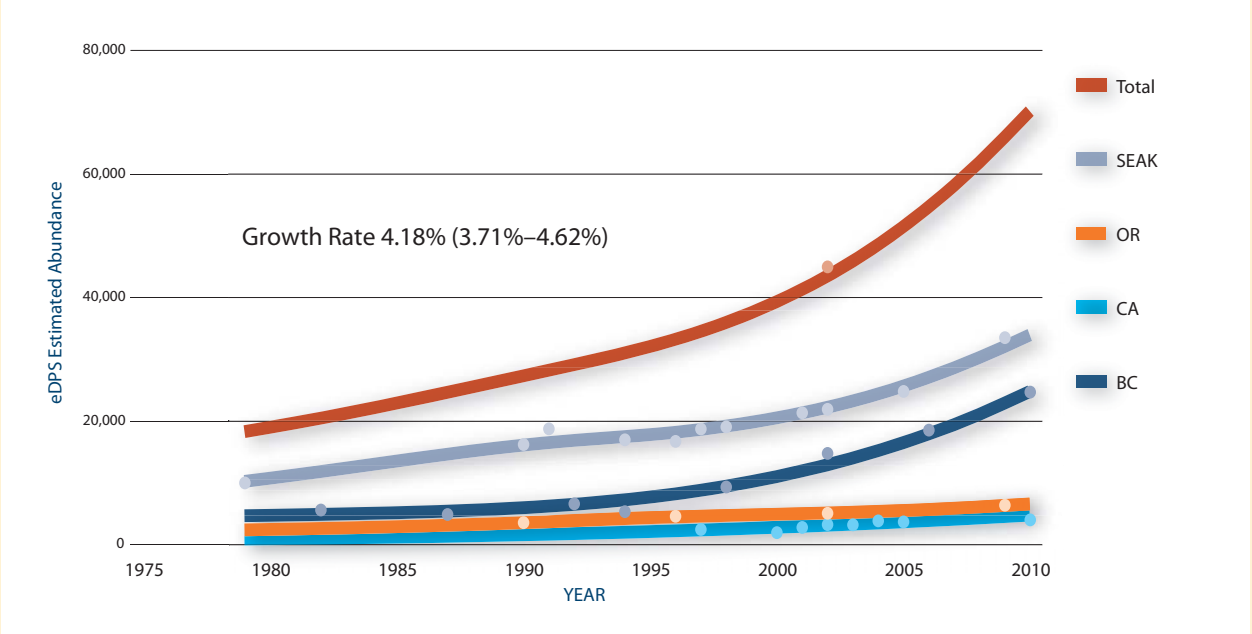


Figure 2. ESTIMATED ABUNDANCE FOR THE EASTERN DPS OF STELLER SEA LION

Estimated abundance of Steller sea lions by region in the eastern DPS: CA=California, OR=Oregon, BC=British Columbia, SEAK=southeast Alaska, Total=all of the eastern DPS. Points are observed pup counts multiplied by 4.5, which is an estimate of total population abundance (Calkins and Pitcher 1982).



HAWAIIAN MONK SEAL — Unique Ambassador of Aloha

The Hawaiian monk seal *(Monachus schaunislandi)* is the most endangered seal in the United States, and its population is in crisis. The species has been in decline for more than 20 years and only about 1,100 remain in the world. NMFS is mandated to protect and recover the monk seal population under the ESA and Marine Mammal Protection Act. Building on more than 30 years of research and management experience with Hawaiian monk seals, we are working across the archipelago to address the population decline with new research and enhancement actions designed to implement the revised Hawaiian Monk Seal Recovery Plan (2007).

Because of NOAA's recovery efforts, the population is 30 percent larger than if we had not acted.

More than one-fifth of the Hawaiian monk seals in the world are alive today because of direct interventions by the NMFS Recovery Program. Because of these efforts, the population is 30 percent larger than if we had not acted, offering hope for future recovery and assurance our actions are making a difference.

Tourism is Hawaii's #1 industry in terms of economic value and the Hawaii Tourism Authority strives to brand Hawaii as a destination where visitors can have a unique experience, through Hawaiian culture, history, landscape, and flora and fauna. Hawaii Tourism Authority surveys indicate that visitors view Native Hawaiian culture and natural beauty as major assets of Hawaii as a destination. A Sierra Club survey found that excursions into nature were the most memorable part of most people's trips to Hawaii (53.4 percent). Economically, wildlife viewing opportunities are worth hundreds of millions of dollars to Hawaii's $10-billion-a-year tourism industry. And tourists are willing to pay more to protect Hawaii's environment: 81 percent expressed willingness to add $1 per day to their room rate to preserve natural areas, coastline, and Hawaiian cultural sites. Over 90 percent of visitors to Hawaii indicated that the preservation of natural areas would be an important factor in their decision to return to the islands.

Hawaiian monk seals, like many of Hawaii's species, are found only in the Hawaii Islands, and are part of the unique ecosystem that is particularly valuable to Hawaii's local economy. As a visible and charismatic

ESA-MMPA Permit No. 10137

species, Hawaiian monk seals feature prominently in advertising and promotion of Hawaii's distinctive visitor experience. Hawaiian monk seals often are listed in national publications as one of the top 10 reasons to SCUBA dive in Hawaii, and are consistently used in local dive and tour company advertising as one of the species making Hawaii a top "megafauna dive destination." Hawaiian monk seals command national and international interest, attracting multiple industries to Hawaii that enhance the local economy. For example, most nature documentaries on Hawaii feature monk seals prominently. In 2012, two national network television shows ("Ocean Mysteries with Jeff Corwin" and "Born to Explore with Richard Wiese," both on ABC) came to Hawaii to film episodes entirely on Hawaiian monk seals, and specifically, NMFS' recovery activities. A British film crew spent several weeks in Hawaii filming an hour-long nature documentary on Hawaii's unique wildlife for broadcast on Animal Planet, using Hawaiian monk seals as the central storyline to unite the various species stories.

Native threatened and endangered species are also important to Hawaii's residents. Based on a 2004 "Wildlife Values in the West" survey, a large majority of Hawaii's residents (71.4 percent) strongly agree that it is important to take steps to prevent the extinction of endangered species (Dayer et al. 2006). In a survey conducted along Hawaii's coastlines, 90 percent of people *disagreed* with the statement that "protection of Hawaiian monk seals is not important because there are many types of seals throughout the world" (Sustainable Resources Group International 2011). However, monk seals do sometimes come into conflict with humans on the beach and in the ocean. NMFS is continuously working on cutting-edge science to understand monk seal biology, including seal-mounted "crittercams" in partnership with National Geographic to learn more about monk seal foraging behavior, and develop solutions to manage and mitigate interactions with humans. When funding has allowed, NMFS supports community engagement programs, through grants to local organizations, to improve communication between the government and the public, and increased education about monk seals, marine conservation issues, and general ocean literacy.

Team Billand, NOAA/DB Dunlap permit No. 932-1905

Overall, when actions are taken to protect endangered native species, this benefits humans as well as native wildlife. Protection and promotion of a healthy and clean marine ecosystem to sustain Hawaiian monk seals will also benefit humans who rely on the ocean for livelihoods and recreation. With continued dedication to Hawaiian monk seal recovery, we can achieve even greater gains for the species, and for Hawaii's natural resources and human population.

SOUTHERN RESIDENT KILLER WHALE—Vessel Regulations Strike a Balance

In April 2011, NMFS announced new regulations to protect killer whales in Washington from the documented negative effects of close-approach by vessels. The regulations prohibit vessels from approaching any killer whale within 200 yards, and prohibit vessels from intercepting or parking in the path of the whales.

NMFS used data from the Soundwatch Boater Education Program, which monitors boat activity around the whales, and results from a variety of researchers to inform the development of our regulations. We also conducted analyses of available economic data to determine the potential costs of the regulations to stakeholder groups, including the whale watch and fishing communities. The regulations strike a balance by providing protection for endangered Southern Resident killer whales, while still allowing meaningful and economically viable whale watching. The new 200-yard approach rule was a change from a previous 100-yard guideline, and we conducted an effects analysis under the National Environmental Policy Act to consider impacts to resources. Our final Environmental Assessment concluded that the new regulations would provide a net benefit to whales by reducing risk of vessel strikes and behavioral and acoustic disturbance, but would have no significant impacts to socioeconomics or recreational opportunities.

The regulations strike a balance by providing protection while still allowing whale watching.

As part of finalizing the regulations, we committed to carrying out an implementation plan addressing education, enforcement, and monitoring. For more information on the regulations and the Be Whale Wise guidelines, please visit: www.bewhalewise.org/.

Education: For the new regulations to be effective, we know it is crucial for boaters to be aware of and understand the rules. We have tapped into the education program carried out with our many partners, including the Washington Department of Fish and Wildlife (WDFW), the U.S. Coast Guard (USCG), Soundwatch, Straitwatch (the Canadian partner to Soundwatch), and the Department of Fisheries and Oceans Canada (DFO) to expand our outreach efforts to incorporate the new regulations. We developed new materials and provided them to both industry and the recreational boating community.

As part of our education program, we developed new outreach materials and continue to work with industry and the recreational boating community to promote the "Be Whale Wise" guidelines for safe vessel operating procedures. The guidelines complement the new regulations and provide additional direction for boaters to view wildlife responsibly.

Enforcement: Enforcing the new regulations includes a strong outreach component and collaboration between NOAA's Office of Law Enforcement (OLE), WDFW, USCG, and DFO. OLE has been working closely with WDFW enforcement for several years, providing funding under a Joint Enforcement Agreement. As part of the agreement we have identified specific support for WDFW education and outreach efforts about killer whales on and off the water. We will continue this coordination and implement and enforce the new killer whale vessel regulations as funding allows. OLE received public comments on nationwide enforcement priorities specific to killer whales in Washington, and we have identified implementation of the new regulations as a high priority for enforcement. Both NOAA and WDFW are pursuing the increased resources necessary to implement the new regulations.

Monitoring: We used various sources to develop the regulations and evaluate how the regulations will benefit the whales, including Soundwatch monitoring reports, published research, and unpublished research results. With the new regulations in place, we have continued to partner with Soundwatch to collect consistent information to monitor long-term trends in boat and whale behavior and adapted the monitoring program to collect new information regarding the 200-yard approach rule, using the best available tools and techniques. Ongoing data collection on numbers of vessels around the whales and numbers of incidents when regulations and guidelines are not followed will allow us to compare the situation before and after regulations and evaluate the effectiveness of the regulations in reducing the number of incidents where vessels are in close proximity to the whales or in the whales' path.

BOWHEAD WHALE — A Well-managed Recovery with Benefits

The bowhead whale, *Balaena mysticetus,* has been listed as an endangered species since 1970, beginning with the precursor to the ESA. It is fitting, as these whales have a long history with people. First, they served as a main food source for Native Alaskan people and then they were heavily exploited by commercial whalers in the 19th century. Although pre-exploitation estimates are not precise, it is likely the western Arctic stock had numbered as high as 23,000, dropping to less than 3,000 by the end of commercial whaling. While this species remains at low levels of abundance worldwide, the western Arctic stock has demonstrated strong growth. A census of the western Arctic stock in 2001 estimated the abundance to be over 10,500 with annual growth of more than 3 percent. Today, the western Arctic bowhead is likely to number over 15,000 and is at a level where it may be considered recovered.

During the years these whales have been listed under the ESA, large portions of the range of the western Arctic bowhead have seen new activities associated with oil and gas exploration and development. These activities occur from Russian waters to the whales' summering grounds off the Canadian Mackenzie River delta. In the United States, the Beaufort and Chukchi Seas provide important habitat for their calving, migrations, and feeding. The United States has conducted an active oil and gas leasing program in these waters for several decades, permitting such actions as seismic geophysical research, exploration drilling, and oil production.

The federal agencies behind these actions (Bureau of Ocean Energy Management, U.S. Army Corps of Engineers, and Environmental Protection Agency) have consulted with NMFS on the effects of these actions on bowhead whales, as required under section 7 of the ESA. Our consultations have found that oil and gas activities were not likely to jeopardize the continued existence of the bowhead whale. These consultations include conservation recommendations and conditions necessary to minimize the incidental take of these whales. Adherence to these conditions by the federal action agencies has fostered the continued recovery of the western Arctic bowheads while allowing the implementation of the Department of the Interior's Outer Continental Shelf leasing program in the Alaskan Arctic, a vital component of our national energy policy.

The protections of the ESA have generally been compatible with the goal of Outer Continental Shelf oil and gas leasing and development. Also, the conservation measures provided by the ESA have benefitted the Alaska Native communities in the Arctic, who depend on the bowhead whale as the keystone species in meeting their subsistence needs. The ESA, along with corresponding authorizations under the Marine Mammal Protection Act, work to ensure continued access to these whales by Native hunters. This is an essential issue in Alaska, as any diminishment in the availability of whales for subsistence use would result in significant economic costs to these communities in terms of lost goods and services.

New threats to the western Arctic stock are on the horizon, including the largely unknown consequence of loss of sea ice due to climate change in the Arctic and increased shipping. We plan to build on our past successes while adapting to the challenges the future holds for the Arctic and the bowhead whale.

References

Calkins, D. G., and K. W. Pitcher. 1982. Population assessment, ecology and trophic relationships of Steller sea lions in the Gulf of Alaska Outer Continental Shelf Environmental Assessment Program, U. S. Department of the Interior. 140.

Dayer, A. A., Manfredo, M. J., Teel, T. L., & Bright, A.D. 2006. *State report for Hawai`i from the research project entitled "Wildlife Values in the West."* (Project Rep. No. 68). Project Report for Hawaii Department of Land and Natural Resources. Fort Collins, CO: Colorado State University, Human Dimensions in Natural Resources Unit.

Edwards, P.E.T., A.E. Sutton-Grier and C.E. Coyle. 2012. Investing in nature: Restoring coastal habitat blue infrastructure and green job creation. Marine Policy, http://dx.doi.org/10.1016/j.marpol.2012.05.020

Fernandes, S. J., G. B. Zydlewski, J. D. Zydlewski, G. S. Wippelhauser, and M. T. Kinnison. 2010. Seasonal Distribution and Movements of Shortnose Sturgeon and Atlantic Sturgeon in the Penobscot River Estuary, Maine. Transactions of the American Fisheries Society 139(5):1436-1449.

Nielsen-Pincus, M., and C. Moseley. 2009. A Preliminary Estimate of Economic Impact and Job Creation from the Oregon Watershed Enhancement Board's Restoration Investments. Ecosystem Workforce Program, Briefing Paper #13. Institute for a Sustainable Environment, University of Oregon. 2pp. [http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/bp13.pdf]

Nielsen-Pincus, M., and C. Moseley. 2010. Economic and Employment Impacts of Forest and Watershed Restoration in Oregon. Ecosystem Workforce Program, Briefing Paper #24. Institute for a Sustainable Environment, University of Oregon. 2pp. [http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/WP24.pdf]

Sustainable Resources Group International, Inc. 2011. Public Perception and Attitudes About the Hawaiian Monk Seal: Survey Results Report (Final), April 2011. Prepared for the Protected Resources Division, NOAA Fisheries Service Pacific Islands Regional Office. (http://www.fpir.noaa.gov/Library/PRD/Hawaiian%20monk%20seal/MonkSeal_SurveyResults_Final.pdf)

Zydlewski, G. B., M. T. Kinnison, P. E. Dionne, J. Zydlewski, and G. S. Wippelhauser. 2011. Shortnose sturgeon use small coastal rivers: the importance of habitat connectivity. Journal of Applied Ichthyology 27:41-44.

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