



Impacts of the Deepwater Horizon Oil Spill

by Liz Traver

More than a year has passed since the Deepwater Horizon platform exploded and began gushing oil into the Gulf of Mexico. The massive oil spill, which released an estimated 4.9 million barrels of oil over the 87 days it was leaking has clearly had a tremendous impact on the people in the region, families who lost loved ones or livelihoods, national and local economies, fisheries, wildlife, local ecosystems and the global environment.



Oiled Kemp's ridley sea turtle.

Photo courtesy of NOAA Gulf Spill Restoration



Pelican covered in oil.

Photo courtesy of Oil Spill Commission

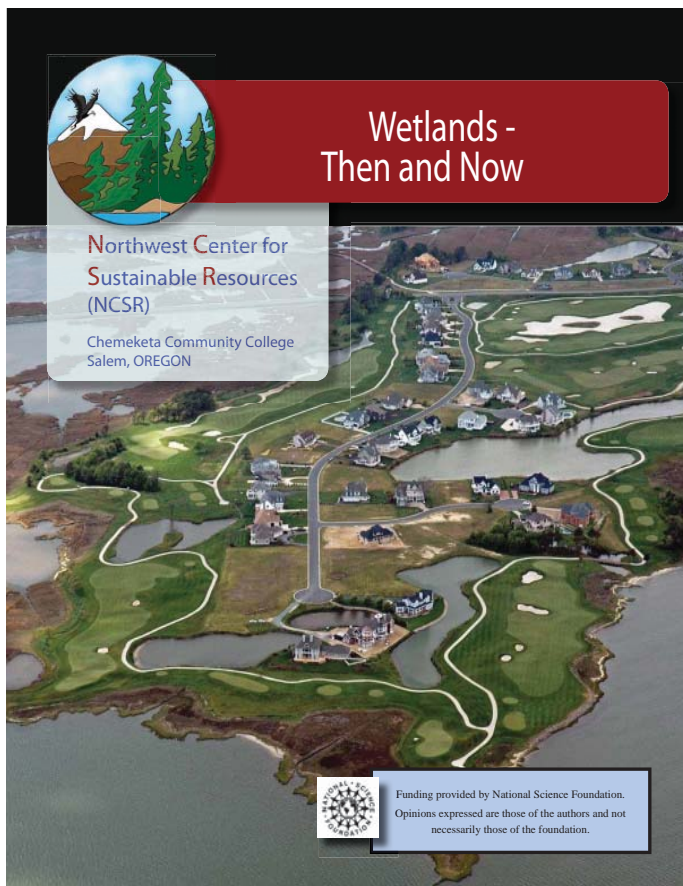
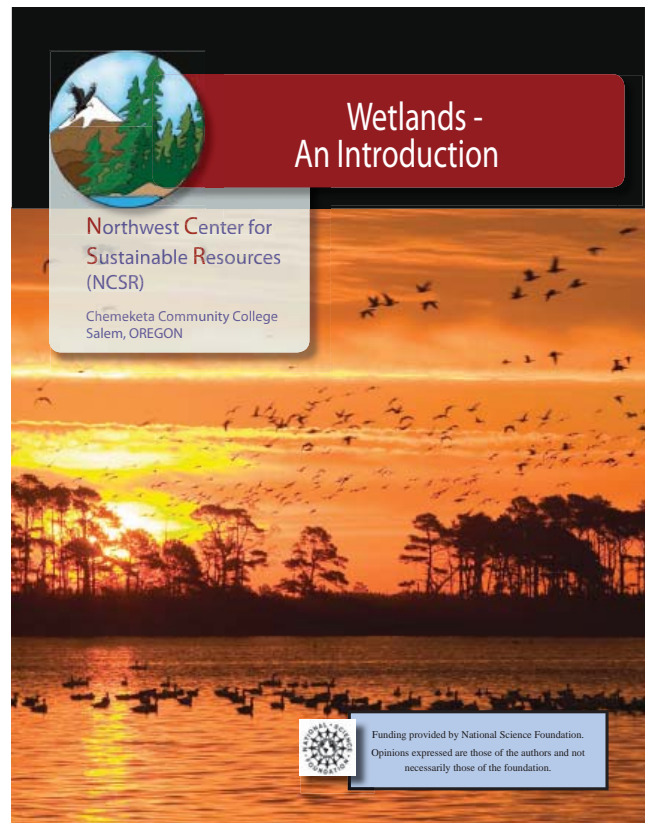
For weeks, images of oil-covered wildlife dominated the media. Dead sea turtles continue to wash up on shore in Mississippi, as well as tar balls and oil. According to a National Wildlife Federation report, stranded sea turtles were observed at seven times the normal level in March of 2011. Sea birds and marine mammals were also affected early in the event due to their time spent at the surface of the water

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increasing their likelihood of coming into contact with oil.

Wetland ecosystems along the Gulf Coast were also greatly affected and provide a topic of study in themselves. Wetlands provide important ecosystem services that we have come to rely on, such as improving water quality, providing protection from storms, and provision of critical habitat for reproduction of many fish species and other wildlife. In the next month, NCSR will be publishing its next series of instructional modules entitled *Wetlands Ecology and Management* that will provide a good basis for students' understanding of wetlands and their role in the environment.

We are now well into spring, one year after the oil spill, and many reports suggest that the ecosystem is recovering better than expected. Grasses are growing despite oil contamination. This is good news and



provides hope for the future. However, this is to be taken with caution because as we have learned from past experiences, ecosystem rehabilitation and recovery is nearly always more complex than we have an understanding of, even with our best science. We should expect to continue to see impacts for years to come, although we may not always be able to connect them directly to the spill. And as things are not always black and white in life – the effects we see on our environment often cannot be attributed to a single event or cause. More important than worrying about “the cause” or “who to blame” is what we are going to do and how we can work together to learn what we can to prevent such disasters, and to protect our ecosystems for future generations.

The resources on the next pages can be used for further study and class discussions about the environmental impact of the oil spill. Equipping today's students with the tools to understand and manage our ecosystems in the future is an essential step to making a difference.

Gulf Oil Spill Resources

American Association for the Advancement of Science (AAAS)

<http://news.sciencemag.org/oilspill/>

This collection of articles covers various topics related to the science of the BP oil spill.

Gulf Oil Spill: One Year Later, NASA multimedia

http://www.nasa.gov/multimedia/videogallery/index.html?collection_id=16497&media_id=82311471

This is a 3.5 minute time lapse of NASA/MODIS imagery covering the year following the BP spill.

Gulf oil spill one year later, The Boston Globe

http://www.boston.com/bigpicture/2011/04/gulf_oil_spill_one_year_later.html

This article contains several images of the impacts of the oil spill beginning with the initial explosion to as recent as April, 2011.

Gulf Study

<http://nihgulfstudy.org/index.html>

This is the website for a long-term research study following up on the health of individuals who were exposed to the oil spill. The National Institute of Environmental Health Sciences is leading the research.

National Commission on the BP Deepwater Oil Spill and Offshore Drilling

<http://www.oilspillcommission.gov/media/index.html>

This resource provides a 10-minute video covering the background of the oil spill, how it happened, the response, restoration and topics about moving forward. Other detailed information and photography is also available.

National Oceanic and Atmospheric Administration (NOAA) Deep Water Horizon Archive

<http://www.noaa.gov/deepwaterhorizon/index.html>

The NOAA team of scientists collect data from many sources to assess the damage of the oil spill and guide the emergency response and restoration activities. Much of the information is available on this website.

National Oceanic and Atmospheric Admin. (NOAA) Education Resources – Gulf Oil Spill

http://www.education.noaa.gov/Ocean_and_Coasts/Oil_Spill.html

This site provides a summary of impacts of the spill as well as links to multimedia presentations, class lessons and activities and background information about oil spills and science.

National Oceanic and Atmospheric Admin. (NOAA) Gulf Spill Restoration

<http://www.gulfspillrestoration.noaa.gov/>

This website is focused on damage assessment and restoration activities for the gulf spill.

Society of Wetland Scientists

<http://www.sws.org/oilspill/>

This site contains links to news articles and scientific articles about the BP Deepwater Horizon oil spill and its impact on wetlands.

The interaction between the California sea lion and salmon has been a yearly occurrence as the fish make their annual run up the Columbia River to the “happy hunting grounds” for the pinnipeds at the Bonneville Dam. In 2008 the debate was expected to end with the approval by the National Marine Fisheries Service (NMFS)



California sea lion munching on salmon at the Bonneville Dam.
Photo courtesy of U.S. Army Corps of Engineers

to “lethally remove” offending sea lions. The decision was backed by a federal district court order that stated the NMFS had “properly evaluated whether individually identifiable pinnipeds were having a significant negative impact on the decline or recovery of salmonids.” After more than a year of debate, the Ninth Circuit Court of Appeals in San Francisco in November of 2010 decided, “not so fast.” The three judge panel said, “Here, we hold that NMFS has not offered a satisfactory explanation for its action. First, the agency has not adequately explained its finding that sea lions are having a ‘significant negative impact’ on the decline or recovery of listed salmonid populations given earlier factual findings by NMFS that fisheries

that cause similar or greater mortality among these populations are not having significant negative impacts.” In January, NMFS released a statement that, rather than further appeals, the Appeals Court decision is to “address the court's concerns” in a new plan to eliminate the sea lion threat to endangered salmon. In the

new plan, NMFS added that it would consider the recommendations of an independent task force, which on a vote of 17 to 1 favored killing more sea lions. The task force recommended shooting the animals rather than just capturing them in traps near the dams and administering lethal injections. As of May 2011, the sea lion-salmon issue was back in District Court with the judge citing specific issues that must be addressed in arguments on both sides of the controversy. The issue now has found its way to Capitol Hill, where Congress is being urged to intervene. Seeking to put an end to what they call the “invaders' free lunch” once and for all, four members of the House of Representatives from Washington and

Oregon have teamed up on a bill that would give both states and Indian tribes a quicker way to get federal permission to kill the sea lions.

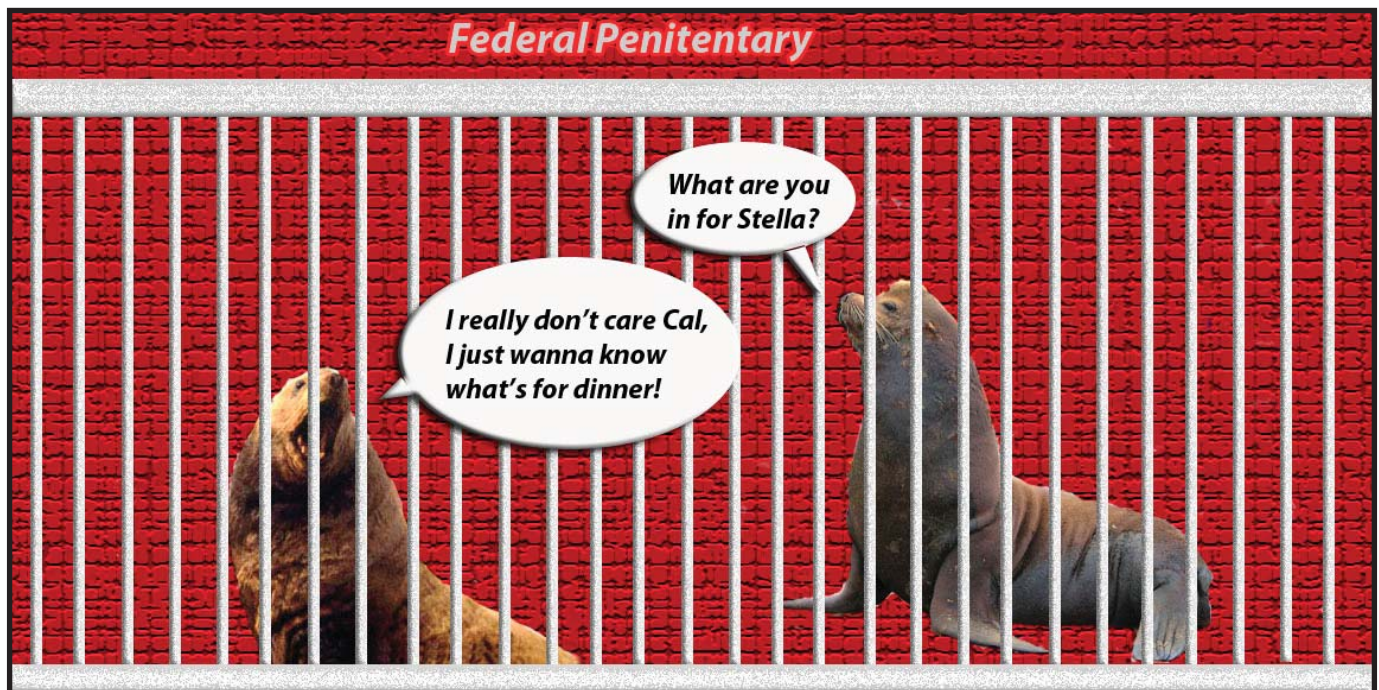
The issue is an example of the delicate work involved in trying to manage animal populations. In this case, both salmon and sea lions are protected by the federal government — the salmon by the Endangered Species Act, and the sea lions by the Marine Mammal Protection Act. As a result, the federal government normally goes to great lengths to try to protect both. Under normal conditions, killing a sea lion is a serious crime, punishable by up to a year in prison and a fine of up to \$100,000. It remains to be seen if eating salmon at Bonneville Dam mitigates against normal conditions and makes the sea lion the perpetrator of a serious crime.

Steller Sea Lions Guilty of Eating Sturgeon by Lester W. Reed

As reported in NCSR's past newsletters, the highly publicized fight on the Columbia River and in the courts has been over California sea lions that show up below Bonneville Dam every March to eat endangered, migrating spring chinook salmon. Now the Steller sea lion has joined their California cousins in the debate. With declining white sturgeon populations in the lower Columbia River, officials and fishermen have banded together to get permission to reduce the Steller sea lion population. Complicating the issue is that, unlike the California species, the Steller is listed as "threatened" under the Endangered Species Act as well as being protected by the Marine Mammal Protection Act. Also, Steller sea lions have taken up year-round residence below the dam eating sturgeon as well as spring and fall runs of salmon. Considering the history of the California sea lion drama, there is little hope that this issue will come to a quick solution. As of now, the decline in white sturgeon has led Oregon and Washington to put the tightest limits ever on sport and commercial sturgeon fishing for 2011, the fourth straight year of cuts. While the states are about to adopt a conservation plan, biologists and fishermen fear a continued decline of sturgeon may lead to an eventual halt to all sport and commercial fishing. The question: Is the Steller sea lion a major part of the problem or just a minor contributor to the decline?



Steller sea lions
Photo courtesy of NOAA



Sea lions adapted from Alaska State Fish and Game and NOAA; Graphic by Liz Traver

Wolf Controversy Continues

By Lester W. Reed

In our winter newsletter, I reported on the continuing wolf controversy in the Northern Rockies. Well, it seems the topic continues to be front and center among pro and con groups and has taken a major turn in favor of those wanting greater state control over wolf populations. For those who follow the scientific, social and political interests, as they affect environmental decisions, the most current twists and turns introduce a new dynamic. Clashes between conservation advocates and

Congress has legislated a specific environmental decision by delisting the Northern Rockies Wolf from “endangered” status. This action turned control of more than 1300 wolves over to state authorities in Montana, Idaho, Oregon, Washington and Utah. Western congressional lawmakers clearly said the purpose of this action was to circumvent a federal judge’s ruling that blocked prior efforts to hunt the animals. In response, conservation groups filed lawsuits in U.S. District Court stating that the

action violated the separation of powers required under the Constitution. The premise of the lawsuits is that the congressional action did not only delist the wolves but stipulated that the action could not be challenged in court. The director of The Alliance for the Wild Rockies, one of the groups party to the suites stated, “They can’t both be members of Congress and judges too; they can’t decide what is legal.”

As the new round of court challenges takes place, wolf hunting will begin. As of this date, Montana and Idaho will institute a wolf hunting season this fall. The Montana Fish,

Wildlife and Parks agency is proposing to allow up to 220 of the known 566 wolves in the state to be shot by hunters. Specific rules for Idaho’s hunt are being formulated.

As I have often said about the wolf issue, it is a classic unfolding case study of the intricacies of developing specific environmental policy and actions. The issue involves science, economics, social values, politics, and the role of our governmental and legal system in decision making.



Gray Wolves

Photo by National Park Service

the federal government are not new. However, these clashes until recent times have involved government agencies such as the U.S. Forest Service, the U.S. Fish and Wildlife Service and on occasion cabinet-level players. Disputes have been fought out in the federal courts, most often over many years and numerous individual challenges and appeals. Now, for the first time, as part of the 2011 budget bill passed in April,

NCSR celebrates Lester Reed by Wynn Cudmore and Liz Traver

After nearly 16 years of involvement with the Northwest Center for Sustainable Resources, Lester Reed has decided to retire. From its inception in 1995 through 2004, Lester served



Lester at Deception Bay, 2009

as the external evaluator for NCSR. In that role, he helped to guide the early development of NCSR and served as an experienced mentor to NCSR staff. In 2005, after the departure of former director, Susie Kelly, Lester agreed to step in as NCSR's director. As NCSR's top administrator, he has fostered the development of the partnerships that now define NCSR and put in place all of the mechanisms that allow NCSR to develop and disseminate 50 curriculum items to thousands of users across the country. Throughout his tenure with NCSR, Lester has remained committed to promoting improved natural resource education at all levels with the ultimate goal of contributing to a more informed society.

In addition to his formal role at NCSR, Lester has also developed a keen interest in world travel and wildlife photography, which he uses to help "inspire stewardship" among students, friends, and colleagues. From the North Pole to the South Pole, Lester has probably been

there, or at least close to it. In the last 5 years, he has traveled to Namibia, Botswana and South Africa where he photographed lions, leopards, cheetahs elephants, cape buffalo, and many other amazing creatures. In the Amazon Basin in Peru he floated the river capturing many varieties of birds. He has also photographed wildlife in the Wild Highlands and islands of Scotland, Spirit Bears in British Columbia, bison in Yellowstone National Park, bighorn sheep in the Columbia Gorge, elephant seals in Monterey Bay, polar bears at the North Pole, and penguins at the South Pole. In his attempt to photograph all of the "big five" cats – his favorite subject – he will travel to India and the Amazon to pursue tigers and jaguars in 2012.

Lester has shared his photos and much of the information he has learned about wildlife in some of NCSR's pictorial presentations as *PowerPoints*. These are available for download or request on CD from our website under "Educator Guides." Additionally, Lester shares his photography and stories about his travels on his personal website:

www.lreed20.smugmug.com.

We will miss Lester greatly as he has made huge contributions to NCSR and has been a great friend to those of us who know him.

Thank you Lester for all you have contributed to NCSR and to natural resources education!



Gulf Oil Spill Resources

The Gulf of Mexico Sea Grant Programs – Oil Spill in the Gulf of Mexico

<http://gulfseagrant.tamu.edu/oilspill/index.htm>

This website contains extensive resources on the spill as well as teaching tools for educators. It provides visitors with current information about the Deepwater Horizon oil spill and access to science-based content gathered after the spill.

U.S. Fish and Wildlife Service – Deepwater Horizon Oil Spill Response Fact Sheets

<http://www.fws.gov/home/dhoilspill/factsheets.html>

This site provides links to several fact sheets on various topics as they relate to the oil spill.



Oregon Garden, Wikimedia Commons

Wetlands Ecology and Management Institute

We are looking forward to this summer's *Wetlands Ecology and Management* institute at the Oregon Garden in July. All participants have been selected and the final preparations are being made. The institute will cover several aspects of wetland ecology and management including the status of wetlands, ecological services provided by wetlands, wetland mitigation and restoration and the role of wetlands in climate change. Planned activities include a wetland determination field laboratory, a tour of local wetland mitigation sites and a canoe trip to a coastal wetland restoration project.



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