

## **Introduction**

The United States of America is a federal constitutional republic with 48 contiguous states and two isolated states. Four states (Alaska, Washington, Oregon, California) are located in the west, bordering the North Pacific Ocean.

Five states (Texas, Louisiana, Mississippi, Alabama, and Florida) border the Gulf of Mexico. Fourteen states (Florida, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire and Maine) border the North Atlantic Ocean in the east.

The state of Hawaii is an archipelago in the middle of the North Pacific Ocean.

The state of Alaska is located in the northwest bordering British Columbia in Canada, the Gulf of Alaska (North Pacific Ocean), Bering and Beaufort Seas.

This extensive coastline results in many different environments, ranging from tropical to arctic and from continental to archipelagic. It includes a large variety of coastal habitats: coral reefs, mangroves, rocky shores, sandy beaches, estuaries and lagoons populated by numerous species, each with a typical range based on climate and marine biome needs.

The country hosts four separate avian migration paths: the Pacific Flyway, from Alaska to southern California; the Central and Mississippi Flyways, which range from the Canadian border in two separate parts of the central section of the country between the Mississippi River and the Rocky Mountains to the Gulf of Mexico; and the Atlantic Flyway, from Maine to the Caribbean where Puerto Rico and the US Virgin Islands (two unincorporated US territories) are located.

RAMSAR wetlands of importance to wildlife include the Kawainui and Hamakua Marsh Complex in Hawaii which provide habitat for a number of endemic and endangered birds; in California, Elkhorn Slough hosts more than 340 species of birds, more than 20,000 waterbirds and more than 100 endangered sea otters. The San Francisco Bay/Estuary, also a UNESCO Biosphere Reserve, includes National Wildlife Refuges and other protected areas and hosts more wintering shorebirds than any other site on the US Pacific Coast south of Alaska. Bolinas Lagoon hosts migratory and wintering birds as well as marine mammals such as harbour seals and sea lions and Tomales Bay which is another important migration and overwintering site for waterbirds and year round habitat for marine mammals. In Alaska, the Izembek Lagoon National Wildlife Refuge provides important staging areas for migratory wildfowl as well as feeding and resting areas for endangered sea otters and Western Steller sea lions.

Other Ramsar sites include the Everglades National Park on the Gulf coast of Florida which provides important nesting, migratory staging and wintering bird habitat. Also in Florida, the Pelican Island National Wildlife Refuge on the Atlantic coast hosts nesting, migratory and wintering birds as well as four species of sea turtle.

Along the mid-Atlantic region, the Chesapeake Bay Estuarine Complex is crucial for migratory and wintering birds. The Delaware Bay Estuary, in the same region hosts more than one million migratory shorebirds and five species of marine turtle. In the northeast, the Connecticut River Estuary and Tidal River Wetlands Complex provides habitat for migratory, nesting and wintering birds.

## **At Risk Wildlife**

In this section, some individual wildlife species are mentioned followed by a letter in parentheses. These are species included in the IUCN Red List of Threatened Species within the top three categories of risk - Vulnerable to extinction (V), Endangered (E) or Critically Endangered (CR).

Avian species – in addition to the RAMSAR sites listed above, the Gulf of Mexico is a hub of avian migration, both aquatic and terrestrial. Many species migrate over the Gulf to winter in Mexico and Central and South America. In addition, the extensive marshlands, tidal zones of the Mississippi Delta (Texas, Louisiana and Mississippi and western Alabama) host many nesting and resident species.

Vulnerable (V) species: Hawaiian goose, long-tailed duck, Steller's eider, horned grebe, Hawaiian coot, Leach's storm petrel, short-tailed albatross, Sejneger's petrel, Cook's petrel, Pycroft's petrel, Providence petrel, white-necked petrel, Juan Fernandez petrel, Desertas petrel, Buller's shearwater, pink-footed

shearwater, bristle-thighed curlew, red-legged kittiwake, black-legged kittiwake, Aleutian tern, Atlantic puffin, Scripp's murrelet, Craveri's murrelet, and the snowy owl which feeds along the coast.

Endangered (E) species: Hawaiian duck, black rail, whooping crane, ashy-storm petrel, Townsend's storm petrel, Hawaiian petrel, Bermuda petrel, black-capped petrel, marbled murrelet and Guadalupe murrelet.

Critically Endangered (CR) species: Laysan duck, Bryan's shearwater and Newell's shearwater.

Marine mammals – along the east coast of the country harbour and grey seals are found, mostly between Virginia and Maine. Grey seals pups are born in January and harbour seal pups between April and June. Most pupping takes place on offshore islands and difficult to reach mainland beaches.

The American manatee (V) is present in significant numbers in Florida in winter, with some remaining year-round and others migrating as far west as Texas and as far north as Massachusetts in summer, however Alabama, Georgia and South Carolina host the majority of the migrant manatees.

A number of whale and dolphin species travel up and down the the Atlantic coast and some give birth off of Georgia, Florida and in the Gulf of Mexico in winter, then migrate to the nutrient rich waters of New England (Connecticut, Massachusetts, New Hampshire and Maine) in summer. Species at risk include the fin (V) and sperm (V) whales, both of which are generally found offshore, although the fin may forage along the coast. Of special concern is the North Atlantic right whale (CR) which forages nearshore and on the surface, unlike most whales.

Of the 25 species of whale found in US Pacific waters, species of special concern include the blue (E), fin (V), North Pacific right (E), sei (E), and sperm (V) whales, although most of these species are found largely offshore. Along both coasts there are 15 species of dolphin and porpoise in these waters, of which the Dall's and harbour porpoise are often found close to shore.

In the Gulf of Mexico, in addition to wintering species, more than 26 species of whale and dolphin have been recorded, most are found offshore, however some resident populations of bottlenose dolphin spend time in the nearshore waters.

On the Pacific coast, six species of pinniped (seals and sea lions), pup on beaches and offshore islands in spring. Of special concern are the northern fur seal (V) and the western population of Steller sea lion (E) found in Alaska. Hawaii is home to the Hawaiian monk seal (E) which breeds and gives birth on remote islands but is increasingly found on beaches of the main islands. As many as 10,000 humpback whales inhabit Hawaiian waters from November to May, where mating and calving occurs. Species of special concern include the North Atlantic right (E), blue (E) and fin (V) whales.

Marine reptiles – Six species of sea turtle are found in US waters. Of these loggerhead (CR), green (E), leatherback (V), and hawksbill (CR) regularly nest, Kemp's Ridleys (CR) are occasional nesters. The Olive Ridley (V) does not nest but forages during migration along the Pacific coast, most often in California, but sometimes also in Oregon. Green turtles nest and rest on Hawaiian beaches.

The greatest numbers of nesting turtles are found in the Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama and Florida) and along the east coast as far as north as Maryland with the most concentrated nesting in Florida, Georgia, and the Carolinas.

Foraging juvenile Kemp's Ridley, green and loggerhead turtles occur as far north as Massachusetts in summer, often becoming victims of cold-stunning as the gulf stream moves further offshore.

## **Regional Seas**

North Atlantic Ocean

Gulf of Mexico

North Pacific Ocean

Gulf of Alaska

Bering Sea

Beaufort Sea

## **Past experience**

Many oil spills have occurred in the USA, as a result of tanker accidents, blow outs, pipeline ruptures or natural seeps. Some significant oiled wildlife incidents include Exxon Valdez (1989), Stuyvesant (1999), New Carissa (1999), Luckenbach (2002), Ventura Mystery spill (2005) and Cosco Busan (2007).

The Deepwater Horizon (2010) was the first response where significant sea turtle and dolphin impacts

were experienced. As with the Exxon Valdez, where sea otters were heavily impacted and later studies revealed long-term health problems in orca/killer whales in the region, post-spill studies of Deepwater Horizon are providing evidence of long-term health impacts in some dolphin populations in the region, with impacts exacerbated by chronic exposure to oil from minor spills in the semi-closed waters of the northern portions of the Gulf of Mexico.

Since 2010 at least 15 spills of over 200,00 US gallons have occurred, some with limited impact on wildlife. In addition to vessel oil spills the US has experienced a number of inland pipeline ruptures. In a few cases oiled wildlife response was initiated, with limited numbers of animals recovered, although important lessons on the differences in oiled wildlife response between inland and marine spills have been learned.

### **Response: the role of the authorities**

The Oil Pollution Act of 1990 (OPA90) mandates that a Federal On-Scene Commander (FOSC), a State On-Scene Commander (SOSC) and a representative of the polluter, known as the Responsible Party (RP) form the basis of the Incident Command System (ICS) with further participation from other agencies and organisations based on the location and severity of the incident. For spills in the marine environment the US Coast Guard (USCG) designates the FOSC from within its Marine Safety Unit of the zone where the spill occurred. The Environment Protection Agency (EPA) designates the FOSC for inland spills.

The RP is required to enact its Vessel Response Plan and provide personnel and resources for clean-up. If the work performed is not satisfactory the FOSC is empowered to take over clean-up and appoint contractors at the RP's expense.

In the case of facility-based oil spills the Clean Water Act, administered by the EPA, requires facilities which store significant quantities of oil and/or transfer oil to/from vessels have a Facility Response Plan. In addition, there are standing National Response and Regional Response Teams (NRT and RRT respectively). The NRT is comprised of 16 federal agencies with the EPA as chair and the USCG as vice-chair. The 13 RRTs (one for each of the federally designated regions, plus Alaska, the Caribbean and the Pacific Basin). Like the NRT, the RRTs are chaired by the EPA and USCG with participation by relevant agencies. The NRT is responsible for the National Oil and Hazardous Substances Pollution Contingency Plan and the RRT is responsible for developing regional contingency plans and providing guidance on area contingency plans.

Some states have enacted their own additional requirements for vessels moving through their waters.

### **Oiled wildlife response**

#### Formal guidelines?

OPA90 mandates a response to wildlife during oil spills, which includes collection of live and dead animals and further treatment of collected animals in specialised facilities. The US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) share responsibility for protection of rare and valuable species and oversee response to wildlife. These agencies designate which trained professional oiled wildlife response organisations will be activated during a spill. Technically NOAA has jurisdiction over marine wildlife, however a few species (sea otter, polar bear, walrus and manatee) are under USFWS jurisdiction.

Both the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) are taken into account during response to oiled wildlife.

#### Response objectives and strategy

As part of the Area Contingency Planning process within the National Contingency Plan (NCP) Area Committees are required to incorporate into each Area Contingency Plan a detailed annex containing a Fish and Wildlife and Sensitive Environments Plan. This annex is prepared in consultation with the USFWS and NOAA, as well as other interested natural resource management agencies and parties. The NCP requires that the annex include predefined information and procedures, i.e. prioritise sensitivities; process to identify resources-at-risk; analysis of environmental effects; pre-approval; monitoring; contracted wildlife response organizations; agency wildlife response contacts & guidelines; training; plan evaluation. Species specific dedicated response plans are available for fisheries, manatee, polar bear, sea otter, sea turtle and walrus.

## Euthanasia or rehabilitation?

Any live animal found with oil will be picked up and transported to the nearest facility where it can receive the best achievable care. If necessary, a temporary facility will be built. If the physical condition of the animal does not meet the set triage criteria it will be euthanised. Animals that meet the criteria will be admitted to care, which is focused on cleaning, rehabilitation and release. Priority is given to animals of conservation concern.

## Impact assessment

Any animal that is collected (dead or alive) is registered and treated as legal evidence, using a chain-of-custody protocol for collecting carcasses or samples. The collected information on numbers and species found will be used in the Natural Resource Damage Assessment. Based on the outcome of that study, the RP must pay a sum that allows the original natural values to be restored (restoration programmes) or compensated.

There are a number of universities affiliated with the various stranding networks and avian response groups which also take a role in impact assessment and post-release monitoring, under guidance from USFWS and NOAA.

## Notification and early response

Organisations authorised to respond to oiled wildlife are contacted by the RP or the authorities managing the overall response. The primary oiled avian response organisations are Tri-State Bird Rescue Research (which operates predominantly on the east coast and the Gulf of Mexico), International Bird Rescue (operates predominantly on the west coast, Alaska and the Gulf of Mexico), Focus Wildlife (operates predominantly in the Pacific Northwest) and the Oiled Wildlife Care Network (OWCN, operating predominantly in California).

Authorised organisations within the NOAA Marine Mammal Stranding Network are notified when these species are impacted, and sea turtles are responded to by authorised NOAA Sea Turtle Stranding and Salvage Network member organisations. Both networks have regional response coordinators at NOAA.

## **Wildlife responders**

The response organisations listed above (Notification and early response) are the primary groups authorised by the national authorities to respond to wildlife during a spill. For birds, the areas each organisation responds in are noted. For marine mammals and sea turtles the NOAA regional response coordinators determine which responders are called. In the case of a large spill, responders from other areas may be brought in as the situation warrants.

In addition to the wildlife rescue and rehabilitation responders, a number of universities with marine wildlife programmes may be called in to assist.

## **Cooperation between stakeholders**

The various response groups work closely with the federal and regional authorities on wildlife issues and have worked together on responses and preparedness at various levels.

In California the OWCN, established by the Office of Spill Prevention and Response (OSPR) within the California Department of Fish and Wildlife, is a statewide network of rehabilitation centres coordinated by the University of California at Davis, which work together to maintain a state of preparedness for oiled wildlife emergencies.

Sea Turtle Stranding and Salvage Network members regularly work together during cold-stunning season, with southern state members accepting transfers from the two Massachusetts facilities either when they experience large numbers of strandings or when animals are healthy but waters in the north are too cold for release. Similarly, the members of the Marine Mammal Stranding Network work closely during mass strandings, large whale entanglements and other incidents, as well as routinely accepting animals from each other's facilities as needed.

## **Permanent facilities**

There are a number of permanent wildlife rehabilitation facilities throughout the country which may be utilised depending on where a spill occurs, and the numbers of wildlife involved.

On the east coast, the Tri-State facility in New Jersey is the largest avian centre. On the west coast, there are two facilities for birds, one in northern California and one in southern California, developed by OSPR/OWCN and managed on a day-to-day basis by International Bird Rescue. These are the largest

avian facilities on that coast. International Bird Rescue also maintains a turnkey facility in Alaska for avian responses.

The Marine Wildlife Veterinary Care and Research Center, also in California and managed by OWCN is the primary facility in the country for sea otter rehabilitation. The Marine Mammal Center, the largest marine mammal facility in the country, is based in northern California, the NOAA Galveston Laboratory in Texas has facilities for marine mammal rescue and rehabilitation, and there are a number of smaller facilities along all of the US coastline which are authorised by NOAA to respond.

In addition to the NOAA Galveston Laboratory, which rescues and rehabilitates sea turtles, there are a number of sea turtle rehabilitation facilities on the Gulf and along the East Coast.

These permanent facilities are supplemented by various mobile units in many parts of the country which have capacity for different species.

### **Current processes**

The Deepwater Horizon Natural Resource Damage Assessment and Restoration (NRDR) includes ongoing monitoring of impacted species and beaches. As with the Exxon Valdez, this process will continue for a number of years, providing data on the initial and ongoing impacts of the spill. This process includes a Bird Technical Working Group, which will include surveys of the affected areas and specific studies on secretive marsh birds and the federally endangered piping plover, and a Marine Mammals and Sea Turtles Technical Working Group which will also conduct offshore surveys of these species, with particular attention being given to potential impacts on manatees and injuries to turtles both onshore and in the water with a focus on loggerhead and Kemp's Ridley turtles.

### **Documentation and references**

General references

IOPF Country Profile (2012)

Birdlife International Country Profile

Oil Pollution Act of 1990

NOAA Sea Turtle Stranding and Salvage Network website

NOAA Marine Mammal Health and Stranding Response Program website

USFWS Oil Spill Response website.

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