



SPECIAL
PHOTO
ISSUE

NEWSWAVE

FROM THE U.S. DEPARTMENT OF THE INTERIOR:
OCEANS, GREAT LAKES, and COASTS

Our ocean, Great Lakes and coasts—
Up close and from a distance

Summer 2019





Interior is a proud partner — from managing energy resources to conserving wildlife and supporting stakeholders.



Front cover (clockwise from top left): Small hermit crab in National Park of American Samoa. Photo credit: NPS; Pink sunset after a storm on Kwajalein Atoll, Republic of the Marshall Islands. Photo credit: Curt Storlazzi, USGS; Landsat 8 captures sediment movement in the Gulf of Mexico off the Louisiana coast. Photo credit: USGS. **This page:** (Clockwise from top left) Wounded Veteran in Parks program brings veterans into service for the NPS. Photo credit: Brett Seymour, NPS; Inspection at an offshore oil rig. Photo credit: BSEE; USGS scientist measuring tides, waves, currents, and suspended sediment off Honokawai, west Maui, Hawai'i. Photo credit: Curt Storlazzi, USGS; *Bougainvillea* sp. blooms in the foreground at an overlook of Laguna Beach in the California Coastal National Monument along the California coastline. Photo credit: Doug Herrema, BLM



Interior connects science to stewardship for vital cultural connections and healthy natural resources.

Interior shares responsibility and commitment for managing our resources wisely for future generations.



This page (top): Monitoring clams along the Kenai Fjords coast along the Gulf of Alaska. Photo credit: J. Pfeiffenberger, NPS; (bottom): Laysan albatross (*Phoebastria immutabilis*) feeds its chick on Midway Atoll, one of the largest Laysan albatross colonies in the world. Photo credit: Pete Leary, USFWS



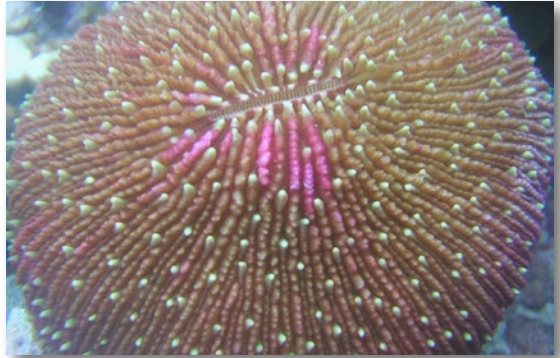
This page (top): Clouds of laze plumes rise as new lava enters the ocean on Kilauea, HI in May 2018. Photo credit: USGS;
(bottom): A Long-tailed duck (*Clangula hyemalis*) sits on the frozen waters off the coast of Lake Clark National Park and Preserve, Southwest Alaska. Photo credit: J. Mills, NPS

Opposite page (clockwise from top left): Two views from the Rainbow Falls overlook, near Hilo, Hawaii; typical base flow conditions (left) and record-breaking floodwaters (right) from Hurricane Lane in 2018. Photo credits: Left: Ryan McClymont, Right: Gordon Tribble, USGS; Close-up view of mushroom coral, *Fungia fungites*, in the National Park of American Samoa. Photo credit: NPS; A school of native cisco fish (*Coregonus arted*), once the dominant prey fish base of the Great Lakes food web are being restored in Keuka Lake, NY. Photo credit: Marc Chalupnicki, USGS; A grebe (*Family Podicipedidae*) nest with eggs floats in Tule Lake National Wildlife Refuge, Klamath watershed, CA. Photo credit: USFWS



**Coastal ecosystems:
dynamic, powerful,
productive, and sensitive**

**They provide great benefits
to all Earth systems.**



Next page: (top right) A black oystercatcher (*Haematopus bachmani*) and a nest scraped out in the rocks (top left) at the top of a sea cliff at Oregon Coast National Wildlife Refuge Complex, OR. Photo credits: Peter Pearsall, USFWS; (bottom) The bright red squat lobster *Eumunida picta* in a thicket of *Lophelia* coral. Photo credit: Brooke et al. 2005, NOAA-OER; Rocky headland off Laguna Beach in the California Coastal National Monument along the California coastline. Photo credit: Doug Herrema, BLM



Connections:

Submarine canyons connect land-based runoff to deep marine regions; coastal cliffs to deep sea coral communities.

Cultural connections tie us to distinct places.

These diverse treasures are entrusted to the Department of the Interior.





This page: (top): Assorted succulents (*Agave spp*) thrive in the rocky arid conditions at Laguna Beach in the California Coastal National Monument along the California coastline. Photo credit: Doug Herrema, BLM; (bottom) Removal of an invasive plant has allowed Laysan albatrosses to return to Eastern Island, Midway Atoll. Photo credit: Pete Leary, USFWS



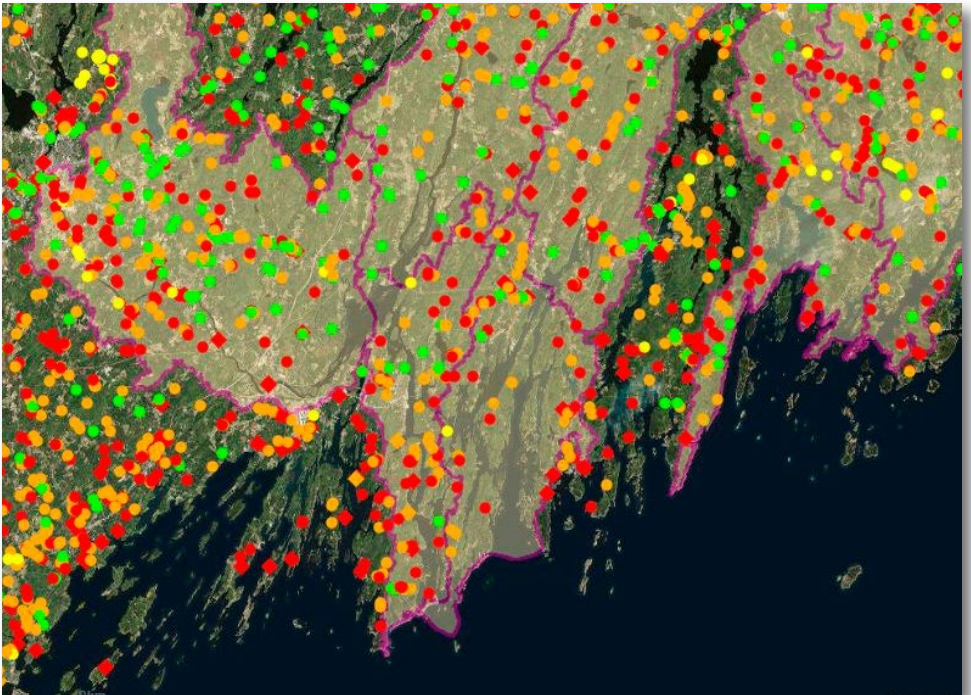
This page (top): Seven-day-old osprey, *Pandion haliaetus*, chicks in nest in Chesapeake Bay. Photo credit: Craig Koppie, USFWS; **Bottom:** A close look at the marsh plant, *Salicornia* spp., at San Pablo Bay National Wildlife Refuge, CA. The salt tolerant succulent is generally green but turns bright pink to red in autumn. The refuge protects migratory birds, wetland habitat, and endangered species, many of which rely on salt marsh vegetation. Photo credit: USFWS



This page (top): This bright colored sea snail known as the flamingo tongue (*Cyphoma gibbosum*) feeds on soft corals in tropical waters of Biscayne National Park, FL. Photo credit: Shannon Brown, Our World Underwater Scholarship Society's NPS 2018 summer intern; Bottom: Close up of the Red-Footed Booby (*Sula sula*) on Midway Atoll. Photo credit: Pete Leary, USFWS



Top: Lava from Kilauea's fissure 8 entering the Pacific Ocean where it generates multiple laze plumes in Hawaii, June 2018. Photo credit: USGS; **Bottom:** A Great frigatebird, *Fregata minor*, displaying the inflated throat skin (gular sac) on Midway Atoll. Photo credit: Pete Leary, USFWS



Top: Aqua waters off Laguna Beach in the California Coastal National Monument along the California coastline. Photo credit: Doug Herrema, BLM; Bottom: GIS coverages overlay a satellite image of the southern coast of Maine coastline in the 'stream habitat viewer' which was designed to help stakeholders in coastal Maine evaluate stream conditions for various fish species. Image credit: USFWS



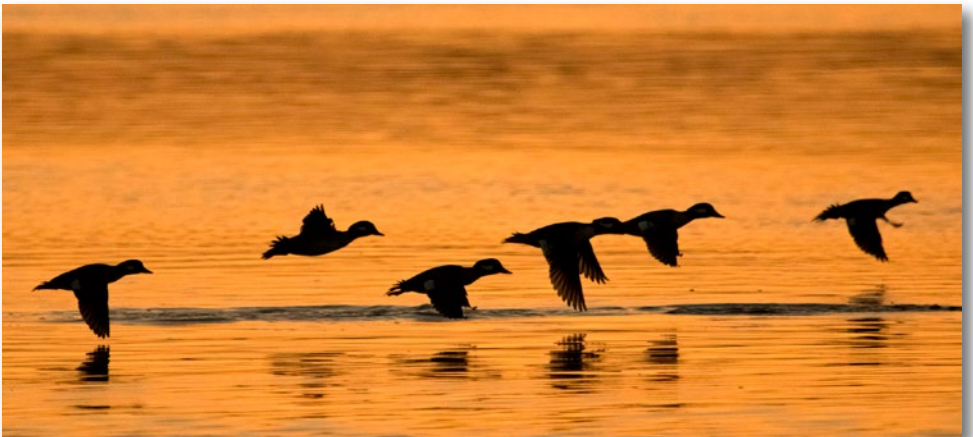
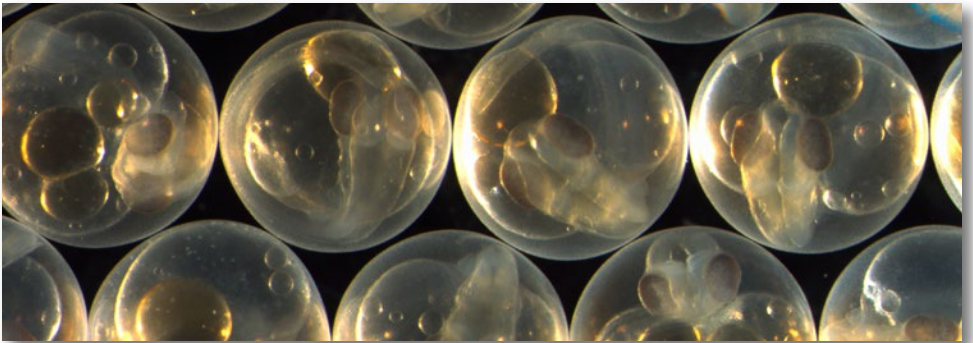
Top: Double rainbows along the Kipahulu area of Haleakala National Park, HI. Photo credit: Chris Archer (DOI-Instagram); Bottom: A bufflehead (*Bucephala albeola*) in Oregon Coast National Wildlife Refuge Complex. Photo credit: Peter Pearsall



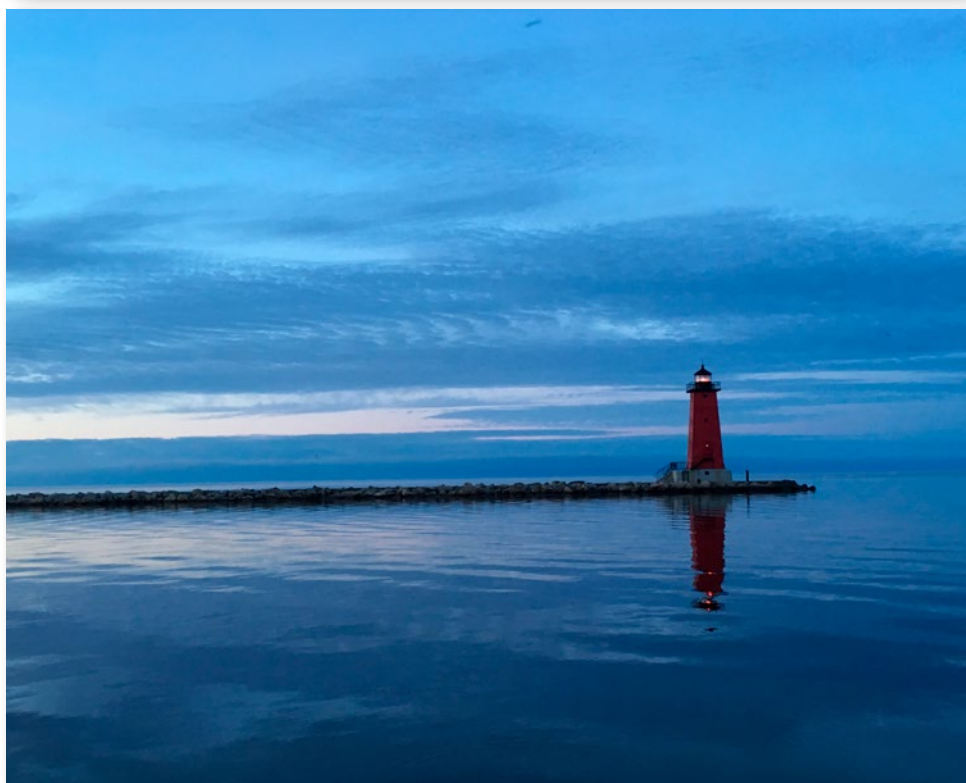
From the Arctic to the tropics, from watersheds to ocean depths, we are stewards of priceless resources.



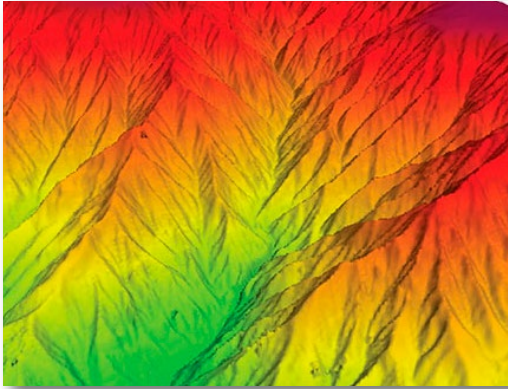
This page (clockwise from top): Researchers conduct a marine bird and mammal survey along the Kenai Fjords, AK. Photo credit: J. Pfeifferberger, NPS; Soft and hard coral species in the submarine part of the War-in-the-Pacific National Historical Park's Agat Unit on west-central Guam. Photo credit: Curt Storlazzi, USGS; The Pacific madrone (*Arbutus menziesii*) is a native Northwest evergreen tree with glossy green leaves and clusters of creamy white blooms that develop into bright red fruits. Photo credit: Peter Pearsall



Top: Great Lakes coastal sand dune habitat at Nordhouse Dunes Wilderness Area in northern Michigan. Photo credit: Johanna Nifosi, USGS; **Middle:** Great Lakes cisco eggs at the USGS Ann Arbor Aquatic Research Lab, MI. Photo credit: Wendylee Stott, USGS; **Bottom:** Buffleheads flying at sunset in Siletz Bay, OR. Photo credit: Peter Pearsall, USFWS



Top: Volunteers reseed wild rice (*Zizania palustris*) in Wisconsin Great Lakes region. Photo credit: Wisconsin Waterfowl Association; **Bottom:** The East Breakwater Lighthouse off Manistique in northern Lake Michigan. Photo credit: Patricia Armenio, USGS



Whether nearby or far away, these resources support all of us.

As we work together, our local actions can have far-reaching influence.

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Clockwise from top left: Two young anglers show off their sunfish (*Lepomis spp*) caught in the Great Lakes. Photo credit: Minnesota DNR; The shade of the distinctive Pacific Madrone (*Arbutus menziesii*) is a great place to enjoy the Pacific coast. Photo credit: Lynn Kesling, NPS; North Atlantic Humpback (*Megaptera novaeangliae*) whales feed in the Northeast Canyons and Seamounts Marine National Monument off the coast of Cape Cod, MA. Photo credit: Zack Kylver; Three-dimensional view of Keller Canyon located offshore of North Carolina where steep walls, rocky outcrops, and ledges create deep sea habitats. Image credit: Jason Chaytor, USGS