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OCEAN'S EDGE PRESS KIT
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NEWS RELEASE **FOR IMMEDIATE RELEASE**

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MONTEREY BAY AQUARIUM TRANSFORMS ORIGINAL GALLERIES INTO "THE OCEAN'S EDGE"

Visit an octopus's den, walk beneath crashing waves, stroll amid shorebirds and gliding bat rays and much more in Monterey Bay Aquarium's newly revitalized galleries, "The Ocean's Edge: Coastal Habitats of Monterey Bay."

"Ocean's Edge" is a dramatic transformation of the aquarium's original exhibit galleries that will reintroduce visitors to the coastal habitats of California's central coast. While favorite exhibits remain, new exhibits and experiences incorporate hands-on approaches and important conservation themes in engaging and exciting ways.

"The 'Ocean's Edge' exhibits will connect visitors to ocean life and protection of the world's oceans as never before," said aquarium Executive Director Julie Packard. "They build on our best exhibits from the original aquarium, adding new stories and engaging activities to keep them fresh for a new generation."

Signature exhibits like the three-story living Kelp Forest are the gateway to the new "Ocean's Edge" galleries, which opened to the public on May 27, 2005. The Monterey Bay Habitats exhibit remains home to an impressive variety of sharks and schooling fishes. Touch pools, a walk-through aviary and intimate "jewel case" exhibits continue to invite a closer look at marine life found along the central coast.

But visitors to "Ocean's Edge" will find significant and exciting changes, including a walk-through wave crash experience, a much-expanded aviary, a more immersive touch pool and bat ray pool, and more hands-on activities than ever before. The changes reflect 20 years of experience in developing innovative and effective marine life exhibits – exhibits that earned the aquarium recognition as the best in the nation in the inaugural Zagat Survey® U.S. Family Travel Guide.

Hispanic visitors will find bilingual signage throughout "Ocean's Edge" that identifies each habitat and key creatures. Video displays feature bilingual captions, and hands on exhibits – many of which encourage family participation and sharing – include bilingual instructions.

High-definition video introduces each living habitat area in "Ocean's Edge." Every gallery celebrates not just marine life but the human connection with nature and the solutions people are finding

-more-

to preserve the marine environment. Throughout “Ocean’s Edge,” visitors will discover ways to get personally involved in protecting the oceans for the future.

Visitors can stay connected to “Ocean’s Edge” when they leave the aquarium through a new web cam streaming from the “shoreline” in the aviary exhibit in the Rocky Shore gallery. This brings to seven the number of live web cams available at www.montereybayaquarium.org.

“Ocean’s Edge” highlights include a new and larger gallery devoted to the giant octopus; aviary and wetlands exhibits integrated into an expanded Coastal Wetland to Sandy Shore gallery; new displays for Sandy Seafloor and Shale Reef animals; and a Wharf gallery that tells the story of the seafood we eat – especially how individual seafood choices can preserve both ocean wildlife and healthy fishing communities.

The giant octopus is an amazing animal that is nothing like its menacing legend. It is shy and gentle, highly intelligent, and has an amazing repertoire of abilities and behaviors. Visitors can explore those characteristics in a new “Ocean’s Edge” gallery devoted to these fascinating animals, among the most popular at the aquarium. Two giant octopuses are on display in a new exhibit that is 30 feet wide – comparable to the 31-foot expanse of the nearby Kelp Forest exhibit. Elaborate rockwork extends up and over visitors’ heads from the center of the double exhibit, creating an illusion of being at the mouth of an octopus’s den.

Opposite the exhibit an interactive video display tells fascinating stories about the octopus, including how it changes its color, pattern, shape or texture as self-defense or to match its mood. Other stories explore octopus biology and the advanced intelligence of these mysterious animals.

Visitors can take a “nature walk” and see the aquarium’s shorebirds and bat rays differently in the revitalized Coastal Wetland to Sandy Shore gallery in “Ocean’s Edge”. The gallery integrates the former slough, aviary and bat ray exhibits to emphasize the links between the habitats and the many ways people connect with these natural systems.

A simulated nature center with a video “interpreter” greets visitors as they approach, and will prepare them to take a “nature walk” through the rest of the gallery. The aquarium has expanded its popular and peaceful aviary exhibit to include coastal wetland habitat pools on either side of the visitor with new vantage points to see shorebirds, ducks, rays and fishes. Exhibit modifications also include improved wheelchair access for visitors with disabilities.

The exhibit also offers an underwater look at bat rays through new periscopes and a viewing window. Bat rays can swim from a new pool inside the aviary (where no touching is allowed) to the second half of the pool, where visitors can gently touch bat rays as they swim by.

The revitalized Rocky Shore gallery debuted with a splash – literally. The focal point is a walk-through acrylic tunnel in which people can see and feel the power of waves as they crash overhead and into a series of tide pools. Children can experience the tide pools from inside a bubble window, too. In many ways, the redesigned gallery will offer a closer look at marine life along the rugged rocky shore.

Classic exhibits like the surge channel remain, allowing visitors to watch how animals respond

when they create currents that rush through rocky passageways. A larger macro-video display features a new zoom camera with above-water as well as underwater views. There is also a larger, more naturalistic touch pool with a rockwork pinnacle and curved walls designed to encourage exploration by families and groups. The exhibit has pools set at different heights to allow easier access for young children and people with disabilities.

The updated Rocky Shore exhibits includes new displays, including natural history video stories, a multimedia tide pool game, and an up-close view of life in a tide pool and in a wave crash zone.

Hands-on activities are integral to "Ocean's Edge" and can be found throughout the revitalized galleries. Visitors can help hide a flatfish model in the sand and discover just how deep tube anemones burrow. They can also learn the impact of choosing seafood that's not sustainable by "ordering" a meal in the "Real-Cost Cafe." The cafe is part of a new Wharf gallery that immerses visitors in the sights, sounds and smells of Fisherman's Wharf in Monterey.

In addition to hundreds of living species already on exhibit, new animals featured in "Ocean's Edge" include the sheep crab, which has pincers on all eight legs and both claw-arms; the small and ubiquitous sand crab, which lives where water and sand meet and is an important source of food for fishes and birds; and the skeleton shrimp, a tiny and fascinating amphipod that bows and sways in the water as it gathers food with its huge flat claws.

The "Ocean's Edge" galleries complete a two-year re-creation of the original aquarium, which opened in 1984. The new exhibits debuts a year after major renovations to the aquarium's main entry and ticketing lobby, and completion of exhibits interpreting the historic Hovden Cannery that once occupied the site.

"Ocean's Edge" exhibits and activities are included with aquarium admission of $24.95 adult; $22.95 senior (65+) and student (13-17 or college ID); and $15.95 child (3-12) and disabled. **(Rates effective January 1, 2007.)** The aquarium is located on historic Cannery Row in Monterey. It is open daily from 10 a.m. to 6 p.m., and in summer and major holiday periods from 9:30 a.m. to 6 p.m. (closed Christmas Day). From May 26 through September 3 it offers extended weekend hours on Saturdays and Sundays, from 9:30 a.m. to 8 p.m.

Seasonal specials, details about special events and programs, family activities and live web cams can all be found online at www.montereybayaquarium.org. More information is available online or by calling (831) 648-4888. Advance tickets can be purchased online; by phone from the aquarium at 1-800-756-3737; and all Northern California Tickets.com outlets or by phone at (408) 998-2277.

The mission of the Monterey Bay Aquarium is to inspire conservation of the oceans.

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Editors: Visit our online pressroom at www.montereybayaquarium.org/aa/pressroom.asp for samples of "Ocean's Edge" images available from Public Relations.

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MONTEREY BAY AQUARIUM®

The Ocean's Edge: Coastal Habitats of Monterey Bay

Gallery Tour

"Ocean's Edge" is a dramatic transformation of the aquarium's original exhibit galleries that reintroduces visitors to the coastal habitats of California's central coast. Favorite exhibits remain the centerpiece, and new exhibits and experiences incorporate hands-on approaches and important conservation themes. Each gallery highlights not just marine life, but also the human connection with nature and the solutions people are finding to preserve the marine environment.

High-definition video on LCD screens introduces visitors to each habitat gallery. Touchable models of marine life are abundant throughout "Ocean's Edge", and realistic sounds and smells further immerse visitors into each habitat they'll explore.

Kelp Forest
The aquarium's signature Kelp Forest exhibit is the gateway to the new "Ocean's Edge" galleries. The three-story exhibit is the first, largest and most successful living kelp forest exhibit at any aquarium in the world. Hundreds of species of fishes, invertebrates and algae – many of which arrive via seawater pumped directly from Monterey Bay – share this rich habitat with the golden fronds of giant kelp. Millions of visitors have found themselves mesmerized while watching the towering marine algae sway gently back and forth as sunlight dances through the water.

Deep Reef
A new gallery devoted to the giant octopus introduces visitors to the shadowy habitats of the deep reef. Two giant octopuses reside in a new, 30-foot-wide double exhibit that is designed to look like a single continuous habitat. Together, the exhibits contain over 5,000 gallons of seawater, and are separated by rockwork that rises up and over visitors' heads. A video display tells stories about this mysterious creature's amazing abilities and behaviors.

Elsewhere in the gallery, new rockwork surrounds a live sheep crab exhibit as well as returning exhibits featuring deep-reef predators like the wolf-eel and lingcod, crevice dwellers, bottom-dwelling fishes and rockfishes. A video display featuring artwork by Ray Troll tells the story of the disappearing rockfish – long-lived species that have fallen prey to overfishing.

Sandy Seafloor
Visitors will find significant changes to this intimate gallery. Delicate tube anemones and feathery sea pens are housed together in a new freestanding domed display. Developing embryos in skate egg cases are on view in their own bubble display that mirrors the live sand dollar exhibit in this gallery, and brittle stars and crabs are housed in larger exhibits. New interactive displays allow visitors help a tube anemone escape a hungry barber slug and help a flatfish hide itself. There are also live exhibits of small and large flatfishes.

Shale Reef
Visitors will discover how the nooks and holes in this rocky habitat provide homes for hundreds of species. A new hands-on display shows what's tucked away where – whether in tangled plants on the reef, or in the crevices, clam holes and ledges in the shale. A new live exhibit features the tiny yet fascinating skeleton shrimp. Through a magnifier and video images, visitors will get a close-up look at this abundant amphipod as it bows and sways in the water to gather food with its oversized flat claws. Another live exhibit puts the focus on fringeheads, small but territorial fishes with large mouths and big attitudes. The popular shale reef lookdown exhibit – and its floating magnifiers – returns, along with live exhibits of clams, chitons and snapping shrimp.

Wharf
Visitors will find big changes here, plus a fun new addition. Real wharf pilings and an overhead pier (salvaged from a Portland, Oregon waterfront) lead visitors to explore "below the wharf." A new interactive display shows visitors how life on a wharf piling stacks up – literally. Other new interactive displays show why some marine animals live where they do, and let visitors "feed" like a barnacle. The surfperch exhibit returns, but the "junk" exhibit featuring trash colonized by sea creatures is three times larger – over 700 gallons – and presented in a way that emphasizes the negative effect human refuse has on the marine environment.

"Above the wharf," visitors can take a seat in the simulated "Real-Cost Cafe" and choose from a variety of seafood dishes on an interactive menu. Each choice prompts a different reaction – via large video screens – from a waiter, waitress and chef depending on whether the seafood "ordered" is sustainable or not. The "Real-Cost Cafe" complements the aquarium's *Seafood Watch* program, and is part of its effort to deliver effective conservation messages throughout "Ocean's Edge" by showing that people are part of the solution, and not just the problem.

Coastal Wetland to Sandy Shore
This gallery integrates the original slough, aviary and bat ray exhibits to emphasize the links among the habitats and the ways people connect with these natural systems. A simulated nature center with a video "interpreter" greets visitors as they approach. New interactive displays illustrate the rich life that coastal wetlands support, the human connection to wetlands and their importance in our lives. An expanded wetland channel exhibit houses sea hares, surfperches and bay pipefish, a local cousin of the seahorse.

The popular and peaceful aviary exhibit is dramatically larger, with habitat pools on either side of the visitor pathway that offer new vantage points to see shorebirds and ducks. Periscopes and a viewing window into a new, 9,275-gallon pool gives visitors an underwater look at bat rays as they glide by. Other new exhibits show what lives inside a mud bank, and address the impact of invasive species on marine ecosystems by looking at one local invader – a horn snail from Asia.

The new bat ray pool extends from inside the aviary – where no touching is allowed – to outside, where visitors can gently touch these popular animals. Nearby, a new exhibit explores the fascinating lives of sand crabs that burrow on the beach where wave meets shore.

Rocky Shore
The most dramatic element of this gallery is a walk-through acrylic tunnel in which people can see and feel the power of waves as they crash overhead. Each wave empties into a large “tide pool” where visitors can observe how marine life behaves at low, medium and high tides. Children can also experience the tide pool exhibit from inside a bubble window.

A larger, more accessible touch pool exhibit with a curving shape makes it easier for families and groups to gather together for hands-on encounters with sea creatures. The display is 20 feet longer than the original touch pool, and consists of several smaller pools set at different heights for easier access by children and people with disabilities.
In the “Waves and Tides” area of the Rocky Shore gallery, new displays include natural history videos, a multimedia tide pool game, a sea star and mussel interactive display, a tide cycle video, and an up-close look at how marine creatures and algae adapt to life in tide pools or underneath waves. Original hands-on displays like the surge channel and macro-video exhibits remain; the latter offers a larger variety of living species and a much larger camera that visitors can maneuver to explore this rich marine environment.

Coastal Stream
An interactive display about the life cycle of native steelhead is new to this gallery where visitors explore an important connection between land and sea. Coastal streams are breeding grounds for steelhead trout and salmon, and both are found in the smooth, simulated granite pools of an indoor/outdoor exhibit complete with a small waterfall and turtles, frogs and wildflowers.

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MONTEREY BAY AQUARIUM

The Ocean's Edge: Coastal Habitats of Monterey Bay

Fact Sheet

What: A dramatic transformation of the aquarium's original exhibit galleries, featuring new exhibits and experiences in addition to visitor favorites.

Where: Monterey Bay Aquarium, 886 Cannery Row, Monterey, California.

When: Opened May 27, 2005

The original galleries: The Monterey Bay Aquarium changed the face of aquarium design when it opened its galleries in 1984. Twenty years later, it does so again with the debut of "The Ocean's Edge: Coastal Habitats of Monterey Bay" (formerly the Nearshore galleries). Signature exhibits remain, such as the three-story living Kelp Forest exhibit that stands as the gateway to the revitalized galleries. But visitors will also find significant and exciting changes in the 14,810-square-foot galleries, including a dramatic walk-through wave crash experience in the Rocky Shore gallery, an expanded Coastal Wetland to Sandy Shore gallery, a new and improved touch pool and bat ray pool, an interactive "Real-Cost Cafe" exhibit serving up sustainable seafood information, and more hands-on activities than ever before. Highlights include a new and larger gallery devoted to the giant octopus; new and larger exhibits for several other animals; and a Wharf gallery that will tell the story of the seafood we eat – especially how individual seafood choices can preserve both ocean wildlife and healthy fishing communities. Cost is $11 million; paid for by donors to the *20th Anniversary Fund for the Monterey Bay Aquarium.*

What's unique: High-definition video introduces each living habitat area in "Ocean's Edge"; video clips and other multimedia experiences celebrate not only marine life but also the human connection with nature and the solutions people are finding to preserve the marine environment.

Admission: Included with aquarium admission (**rates effective January 1, 2007**): $24.95 adult; $22.95 senior (over 65) and student (13-17 or college ID); $15.95 child (3-12) and the disabled. Children under 3 admitted free. Discounted tickets for members of the military and their families can be purchased in advance at many California and Nevada installations. Group rates available with advance booking for parties of 20 or more.

Parking/ shuttle service: Parking in Cannery Row parking garage three blocks away. The free MST Trolley links the aquarium with downtown Monterey and waterfront destinations daily during peak summer season (Memorial Day to Labor Day) and during major holiday periods.

Information/ advance tickets: General information, (831) 648-4888, or online at www.montereybayaquarium.org. For advance tickets inside California, call the aquarium at 1-800-757-3737; outside California call (831) 648-4888. Order tickets online at www.montereybayaquarium.org or at all Northern California Tickets.com outlets or by phone at 408-998-2277 (Central Valley & outside California, (1-800-225-2277). Local hotels also sell advance tickets to their guests.

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MONTEREY BAY AQUARIUM

‘The Ocean’s Edge: Coastal Habitats of Monterey Bay’
Species Highlights

In addition to exhibits of marine life from Monterey Bay that were part of the original galleries, “The Ocean’s Edge: Coastal Habitats of Monterey Bay” features several new live exhibits that focus on both familiar and not-so-familiar species. Here are highlights of the new exhibits and species.

Deep Reef Gallery

Giant octopus
Enteroctopus dofleini
The octopus, like the shark, evokes both fear and fascination in humans. People once called it a “devilfish” and thought it was a bloodthirsty creature strong enough to sink ships. The reality is much different. The giant octopus is an amazing animal, shy and gentle and highly intelligent – probably the most intelligent of any invertebrate.

The octopus has an amazing repertoire of abilities and behaviors. It can change its color, pattern, shape or texture in self-defense or to match its mood. Its eight arms are covered with thousands of suckers, each of which can taste the difference between sweet and sour and can feel the difference between rough and smooth. Octopuses also have incredible gripping power. It takes a 40-pound pull to release the grip of a three-pound octopus. Like humans, octopuses have both long- and short-term memory. They solve problems by trial and error, and remember successful results; octopuses at the aquarium learn and remember how to open containers with food inside.

The giant octopus is the second-largest species of octopus in the world, and can grow to nearly 30 feet long and weigh nearly 100 pounds. Most weigh between 40 and 90 pounds; the record is nearly 600 pounds. The giant octopus is found in waters down to 2,400 feet along the Pacific coast, north to the Aleutian Islands, and south to Japan.

Octopuses have intimate and delicate encounters when mating. Because an octopus sees most anything that moves as food, the male must signal to the female that’s he’s a mate, not a meal. Some males flash colors or stripes; others curl back their tentacles to reveal suckers. Adult females can “store” sperm packets for months after accepting them from a male via a modified tip on one of his tentacles. Females lay between 20,000 and 100,000 eggs, then stop eating as they brood the clutch. The mother dies shortly after most of the eggs hatch. Newborn octopuses are about the size of a grain of rice, yet are fully formed, on their own and ready to go.

Sheep crab
Loxorhynchus grandis
This large (up to 18 inches in diameter) member of the spider crab family gets its name from the algae growing on its shell, giving it the appearance of a wooly sheep. Young sheep crabs usually camouflage themselves by attaching algae, sponges or other materials to their carapace. This “decorating” behavior ends as they get older and larger, probably because big crabs have few predators.

Unlike other crabs, sheep crabs are believed to stop molting when they mature, a process called “terminal molt.” They do not grow or have the ability to regenerate limbs after their final molt. They have powerful crushing and cutting pincers on their claws that can inflict serious injury, but sheep crabs are not considered aggressive toward humans. Male sheep crabs usually have much larger claws than females.

Sheep crabs are often seen walking around on the seafloor underneath the kelp forest canopy. They are usually found in waters between 10 and 500 feet deep from Alaska south to Baja California; they are one of the most abundant and largest crabs found off Southern California. This species feeds on a variety of organisms, both plant and animal, and often scavenges the remains of dead fishes and other creatures. Despite its lumbering appearance, the sheep crab is very agile – parachuting from pilings, or moving quickly while foraging or when disturbed.

Sandy Seafloor Gallery

Tube anemone
Pachycerianthus fimbriatus
This beautiful yet common anemone creates its own parchment-like mucus tube in which to live. Most of this tube is unseen, buried in the mud or sand where it can extend two feet or more below the surface. Sea slugs (nudibranchs) prey on the tube anemone's trailing tentacles and can attack with surprising speed, but they often get pulled into the tube when the anemone retracts in self-defense. Sea slug attacks are seldom fatal to the anemone, and its tentacles usually grow back.

Tube anemones are abundant from Alaska to Baja California in waters ranging from a few feet to about 100 feet deep. They are often found in large fields, where they can reproduce rapidly to colonize favorable territory. They can grow to be about a foot tall, and their semi-translucent tentacles can be white, brown, black or orange.

Sea pen
Ptilosarcus gurneyi
This distinctive cnidarian (a stinging animal like corals, sea anemones and jellies) looks like an old-fashioned quill pen, hence its name. Each sea pen is actually a colony of polyps (small anemone-like individuals) working together for the survival of the whole.

The primary polyp loses its tentacles and becomes the stalk, which has a bulb at its base that anchors the sea pen in the sand or mud. Secondary polyps form the "branches" of the sea pen and each has a specialized function. Some feed on plankton using nematocysts (stinging cells), some reproduce, and some force water in and out of canals that ventilate the colony. Each tiny polyp is an octocoral, having a mouth and eight feathery tentacles. The older the sea pen, the higher the number of branches.

But the entire colony can also act as one – when touched, the sea pen flashes a bright greenish light, and when annoyed, it collapses by expelling water, vanishing into the sand and into its bulbous foot. It may take a while before it reinflates.

Sea pens are found in shallow to moderately deep water on the Pacific and Atlantic coasts. Their colors range from dark orange to yellow or white, and they can grow to a height of two feet or more. Sea pens are food for some of the larger species of nudibranchs and sea stars.

Once plentiful in parts of Puget Sound, sea pen populations have recently declined in those areas. Large numbers of their predators have also disappeared, leaving some sandy bottom areas vacant. This affects populations of creatures at the top of the food web, too. Scientists haven't determined why the sea pens are disappearing, but their absence could indicate an ecosystem in trouble.

Shale Gallery

Onespot fringehead **Yellowfin fringehead**
Neoclinus uninotatus *Neoclinus stephensae*
Fringeheads are small fishes with large mouths and big attitudes. They have fringe-like tissue, called cirri, on their heads and clown-like lips that extend well beyond their eyes. But don't be fooled by their comical looks – divers and fishermen avoid these fishes, which are known to lunge and bite to defend themselves or their homes.

Fringeheads can grow to about nine inches in length, and are found in Pacific waters ranging from Bodega Bay to northern Baja California. They spend most of their time in their shelters – which range from empty clamshells to cracks in the mud or shale to discarded bottles or cans – peering out with only their heads visible. They back themselves into their homes rather than entering headfirst. The bigger the opening, the bigger the occupant.

After the female deposits fertilized eggs (from several hundred to several thousand) inside a shelter, the male broods and guards them until they hatch. Unlike other fishes, fringeheads are not known for long periods of sustained swimming. Instead, they move about using short, rapid, darting movements, often with quick changes in direction.

Skeleton shrimp
Caprella spp.
This tiny (1.5 inches maximum height) crustacean is named for its long, thin, jointed body, which resembles a skeleton. It also resembles and sometimes is called the "praying mantis of the sea."

Skeleton shrimp have two pairs of legs attached to the front end of their bodies, and three pairs of legs at the back. The front legs form powerful "claws" for defense, grooming and capturing food. The rear legs grasp and hold on to algae or other surfaces. Once attached, skeleton shrimp feed by facing into the current, bowing and swaying with front claws outstretched, waiting to capture whatever drifts by. They can also move around like inchworms, and swim with a thrashing motion if dislodged. The females of some species of skeleton shrimp apparently kill the males after mating by using a poisonous claw.

Skeleton shrimp are abundant and live in many ocean habitats, including the deep sea. They play an important role in the ecosystem by eating detritus and other food particles, but are also omnivorous feeders that eat diatoms and small planktonic invertebrates. In turn, they are plentiful prey for fishes, other shrimp and anemones.

Coastal Wetland to Sandy Shore Gallery

Ruddy duck
Oxyura jamaicensis
This small (about 11 inches in length), chunky diving duck with a stiff, fan-shaped tail lives in coastal wetlands from North America south into Mexico. It prefers areas with good nesting material and protection, such as reeds and other tall grasses. It is one of the most aquatic of ducks, and quite clumsy on land. It feeds mostly on aquatic plants but will also eat larvae, small insects and crustaceans.

Male ruddy ducks have striking blue bills during spring and summer breeding season in addition to a bright chestnut body, black crown and white cheeks. In winter, males resemble females – brown/gray coloring with white breasts and bellies. Males court females (and establish territory over other males) with an elaborate display known as "bubbling." The male first circles the female several times with his tail upright, then slaps his bill against his chest to produce both a drumming sound and create bubbles from beneath his chest. Ruddy ducks are known as brood parasites, often laying their eggs (from 5 to 15) in the nests of ducks of the same or different species.

Bufflehead duck
Bucephala albeola
This beautiful bird is the smallest of diving ducks; males weigh about one pound, females about 11 ounces. Male buffleheads display striking black and white breeding plumage, with hues of purple and green visible in the black feathers on their head. Females are dark brown with pale grey underneath and a less distinct white head patch.

Buffleheads – named for their large-headed appearance – take flight by running on water, and walk on land only when leading their young to water. They are found in lakes, rivers and bays across the United States and into Canada and Alaska. In summer, their diet consists mostly of insects and larvae along with grass seeds and aquatic vegetation. In the winter, they eat mollusks and crustaceans.

They display interesting diving behavior – they pull their plumage tightly into their body before leaping up and plunging downward. They also appear to bob up like a cork back to the surface. When feeding as a group, they will often simultaneously dive together, leaving a "lookout" or two to watch for danger.

Unlike most ducks, buffleheads form long-term monogamous pair bonds. The male's courtship display can include a "water-skiing" posture in which he shows off his pink feet as well as his beautiful plumage. Buffleheads are small enough to use nests abandoned by flickers or other members of the woodpecker family, which are usually located in trees from three to 20 feet above the ground or water. Males are very territorial and aggressive toward rivals.

Sand crab
Emerita analoga
There's a lot of activity happening beneath people's feet as they walk on a beach. Often ignored is the sand crab, one of the most important animals of this environment. It's a major part of the food web for many sandy intertidal creatures, serving as prey for several species of fishes and shorebirds. Dead sand crabs are the bulk of the diet for the spiny sand crab and the voracious isopod *Excirolana*. People also use sand crabs as bait when fishing.

This tiny (about 1 ¾ inches maximum length) bulldog of a crustacean lives in the "swash zone" where wave meets shore. It's a harsh environment in which it must constantly rebury itself to stay put and not get washed away. The sand crab is a filter feeder, facing out to sea with only its eyes and its small first antennae exposed as a wave comes in, then filtering the receding wave through its feathery second antennae, which it passes through its mouth to remove food particles.

Sand crabs often form dense aggregations on beaches. These aggregations can move up and down and along the beach in response to tidal changes. It may help them to increase feeding efficiency or reduce predation. Sand crabs are found on beaches as far north as Alaska, and south to Peru and Chile.

Increasingly, researchers are using the sand crab as an indicator species to help assess the health of coastal environments. Like other crustaceans, sand crabs accumulate toxins in their tissue, especially pesticides, metals and hydrocarbons. When other animals eat sand crabs, those toxins are transferred higher up the food web. Since sand crabs are a brooding species – they carry their eggs on their bodies until they hatch – researchers can also assess the effects of exposure to toxins on reproductive success.

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