

Chapter 13 Marine Reptiles

All marine reptiles have a dry scaly skin that protects against water loss.
All reptiles live in warm or temperate climates because, as ectothermic (cold-blooded) animals

Marine reptiles share characteristics that originally evolved to suit life on land

There are four main groups of reptiles alive today:

1. sea turtles
2. sea snakes
3. marine lizards
4. saltwater crocodiles

Adaptations of Reptiles

Amniotic egg - (first seen in the reptiles) contains a large yolk to nourish the developing embryo and is enclosed in a leathery egg case to prevent water loss and drying out

Marine reptiles need to get rid of excess salt and to conserve freshwater, they have salt glands normally positioned above the animal's eyes secrete great quantities of salty tears; this enables them to live without access to freshwater

Saltwater crocodiles - are large, predatory marine reptiles found in Africa, Asia, Australia, and the Americas.

They hunt by remaining just below the water's surface with only their eyes and nostrils above the water, waiting to catch a meal by surprise

American saltwater crocodile lives only in the Florida Keys can grow up to 5 meters in length
American crocodile are endangered. There are only about 500 to 1200 individuals left.

Sea Snake there are about 60 species of sea snakes. All of them are venomous and grow 1 to 2 meters in length

Found in the tropical Atlantic, Pacific, and Indian Oceans

Special adaptations enable them to survive in the ocean. The flatter body (side-to-side) and paddle-like tail help the sea snakes swim more efficiently

Salt glands in the mouth enables the sea snake to get rid of excess salts

They have a special flap of tissue that covers the nostrils

Sea Snakes lungs can inflate to three-quarters of its body length. This enhanced lung capacity lets the sea snake stay underwater for as long as 2 hours on a single breath

Marine Lizards - there is one species, the marine Iguana

They live on the Galapagos Islands and swim and feed in the ocean on the seaweed and algae that grow on rocks in the subtidal zone

Charles Darwin described this marine lizard as a "... hideous looking creature, of a dirty black color, stupid and sluggish of movement. ..."

They have a flattened tail to aid in swimming

Sea Turtles are the most widely distributed marine reptile

They inhabit tropical and warm temperate oceans around the world

There are 16 species of marine turtles, and all are endangered

The largest marine turtle is the leatherback. An average-sized leatherback measures 2 meters in length

The smallest marine turtle is the Kemp's Ridley, which is about 60 cm in length

Some species can live as long as 200 years

They're well adapted to a marine environment their bodies are smooth and streamlined for ease of movement in the water.

The limbs (especially the forelimbs) have evolved into flippers

The leatherback can swim at speeds of up to 32 km per hour

They have fatty deposits and lightweight bones for added buoyancy.

They can stay underwater for up to 40 minutes on a single breath.

They have no teeth, but have strong jaws used for breaking open the shells of crab clam and other shelled animals, or for eating underwater vegetation

Sea turtles that eat jellyfish sometimes die when they accidentally ingest floating garbage such as plastic bags, which resemble their prey

Chapter 13: Marine Birds commonly referred to as sea birds

There are nearly 9000 species of birds

Not all birds fly

All birds have feathers which are attached to the skin

2 main types of feathers

Down feathers are the small, fluffy feathers closest to the skin. They trap warm air and hold in body heat

Contour feathers are the larger feathers that cover the wings and the body some of these are used for flight

Some aquatic birds have powder feathers which repel water to protect the underlying down feathers

Some birds also have a special gland near their tail that produces waterproof oil. They use their beak to spread this oil through their feathers when they groom or preen themselves.

Most birds have lightweight hollow bones

Diving marine birds such as the penguin have denser bones

All marine birds have to return to land to breed. All birds lay eggs which are encased in a hard calcium-rich shell

They nest in a variety of habitats: in tree branches, on cliff ledges along the coast, on patches of vegetation, among pebbles and sand on a beach, or on a few stones out on the ice

Adaptations of Marine Birds

Sea birds species that spend much of their time in and on the water have webbed feet for paddling and swimming

Seabirds have salt glands; they are special nasal glands that secrete a salty solution from the nostrils

Common Shorebirds

You can often tell what a bird eats by looking at its beak or bill.

Sandpiper has a narrow pointed bill for poking in the sand for small invertebrates, like worms and insects in the intertidal zone

Oystercatcher uses its long red knifelike beak to catch and eat various types of mollusks

Snowy egret has a long flexible neck and the pointed bill that it uses to quickly grab small fish that dart about in the shallow water.

Also, long stilt-like legs give egrets the advantage of height in being able to spot fish

Sea gull is probably the bird most identified with the ocean.

Gulls are largely scavengers that feed on dead marine animals that are carried ashore by the tides. Sea gulls also eat crabs on the beach and garbage at landfills.

Diving Shorebirds

Cormorant is a common shorebird that dives from the sky for its food.

When it spots a fish, it folds its wings, tucks in its feet, and dives into the water, where it catches the fish with its hooked beak.

Some species can also swim underwater after fish.

Common tern can hover over the water before it dives to catch a small fish.

Brown Pelican live along the Florida Gulf, and California coasts. They have large throat pouch like a net to scoop up fish. Water is squeezed out of the pouch and the fish are then swallowed head first.

Black Skimmer flies low over the water, with the tip of its lower jaw just beneath the surface. It eventually makes contact with a fish, which it swallows while still in flight.

Osprey swoops down and dives for its meal. It has strong curved claws called talons which it uses to grab and hold onto a fish.

The long, powerful wings of the hawk provide the lifting power needed to carry the bird and its prey.

Osprey which feeds only on fish lives along the Atlantic Pacific and Gulf coasts.

"Fish Hawk"

Diving Pelagic (open ocean) Birds

Some of these birds migrate thousands of kilometers each year as they follow schools of fish or drifting plankton.

The most oceanic of all the seabirds is the wandering albatross

The Albatross is the largest of all seabirds with a wingspan of about 3 meters.

It is adept at gliding effortlessly on air currents over the ocean.

It may spend 3 or 4 years at sea before returning to its birth island to breed

The bird rarely stops flying or gliding and may actually circle the entire globe

Penguins are the most aquatic of all seabirds.

There are 15 species of penguins

They vary in height from about one-third of a meter to more than 1 meter tall

They have no flight feathers but are excellent swimmers and divers

Their smaller wings are used as flippers that can propel the bird through the water at speeds of up to 24 km per hour

Penguins catch a varied diet of fish, krill, squid and shellfish

Some penguins go to sea for 2 years before returning to land or ice to nest

They survive the cold air and waters of the Antarctic because they have a thick layer of fat under their skin and density packed soft down feathers for insulation