

# MARINE REPTILES: TURTLES AND SEA SNAKES

In terms of both number of individuals and numbers of species, fishes are by far the most successful group of vertebrates in the sea. Reptiles, on the other hand, are represented by only a few species. Most of these are still tied to the land because they must lay their eggs on shore; three of the four reptiles discussed in this and the next plate share this requirement. Here two reptiles are introduced: the green sea turtle and the yellow-bellied sea snake.

**Begin by coloring the adult green sea turtles at the top of the page. Color the four illustrations of egg laying, hatching, and juveniles. Note that the broad tracks receive the same color as the forelimbs that created them.**

The green sea turtle, an endangered species of the Caribbean Sea and the Atlantic and Pacific oceans, is one of several species of turtle that spend their lives at sea. Others include such exotically-named species as the hawksbill, leatherback, and loggerhead. Turtles have roamed the seas since before the dinosaurs and were very successful until humans entered the picture. Many sea turtles feed on gelatinous marine zooplankton, jellyfish and such. The turtles mistake floating plastic bags and deflated helium balloons that have drifted out to sea for their prey. The inedible plastic and latex blocks the turtles' intestinal tracts and they starve to death. Many other sea turtles perish in the nets of shrimp fishermen, although a turtle exclusion device (TED) is available and effectively allows turtles to escape from the net.

Sea turtles nest on broad sandy beaches. Once every three years, an adult female green sea turtle undertakes a journey back to the beach where she was hatched to lay her own eggs. For some turtles, these migrations may be several hundred kilometers long. Males and females mate in the surf just offshore from the rookery. The male grasps the female with his large *forelimbs* and transfers his sperm to her, as shown in the upper drawing. After a few days, the female makes a nocturnal trip onto the beach. She pulls herself up the beach with her forelimbs, all the way to the dry sand of the upper beach. She digs a broad pit with her forelimbs and then delicately excavates a bottle-shaped *burrow* with her agile *hind limbs* (center illustration, far left). The female lays approximately 100 leathery-skinned eggs in the burrow and carefully covers them with sand. She buries the pit entirely and throws sand all about to

disguise the location of the nest. Her job completed, the female returns to the sea. Her broad *tracks* left behind indicate the difficulty this turtle has in moving on land (center illustration, second from left). The forelimbs are modified into highly effective swimming flippers, but they cannot lift her bulk off the sand. Similarly, her *carapace* is much reduced and streamlined for swimming; it does not serve as a fortresslike retreat, unlike those of many freshwater and terrestrial turtles.

Before leaving the breeding grounds, the female may return to the beach to lay eggs as many as five times at 15-day intervals. The eggs incubate in the warm sand for about 60 days, and the young hatch all at once and begin to dig to the surface (center illustration, second from right). They emerge at night and instinctively find their way to the ocean (center illustration, far right). The green turtles are most vulnerable to predation during their time in the burrow and during their scramble to the sea.

The young turtles remain at sea and do not reappear in sea grass beds until at least one year later. When four to six years old, the females will return to the exact stretch of beach where they hatched and contribute to the next generation.

**Color the light portion of the yellow-bellied sea snake golden yellow and the dark pattern black. Note that the flattened tail receives a different color.**

Most zoologists agree that snakes evolved from lizards and are the most modern of the reptile groups. Sea snakes are found in shallow tropical and subtropical waters. All are related to the cobra family. They have a potent venom that can cause severe injury to humans. The *yellow-bellied sea snake* is found in the Pacific off the coast from Panama to Mexico. It is commonly seen on the surface, often in aggregations of several hundred individuals.

Sea snakes are well adapted to a marine existence. Many give birth to the young alive at sea, and the newborn snakes can immediately swim on their own. The sea snake has a *flattened tail* used as a paddle in swimming. Sea snakes generally feed on fish, and can remain submerged for thirty minutes or longer between breaths. Most species are docile, although some attacks on divers have been reported. They are best appreciated from a distance.

Name/Period/Date

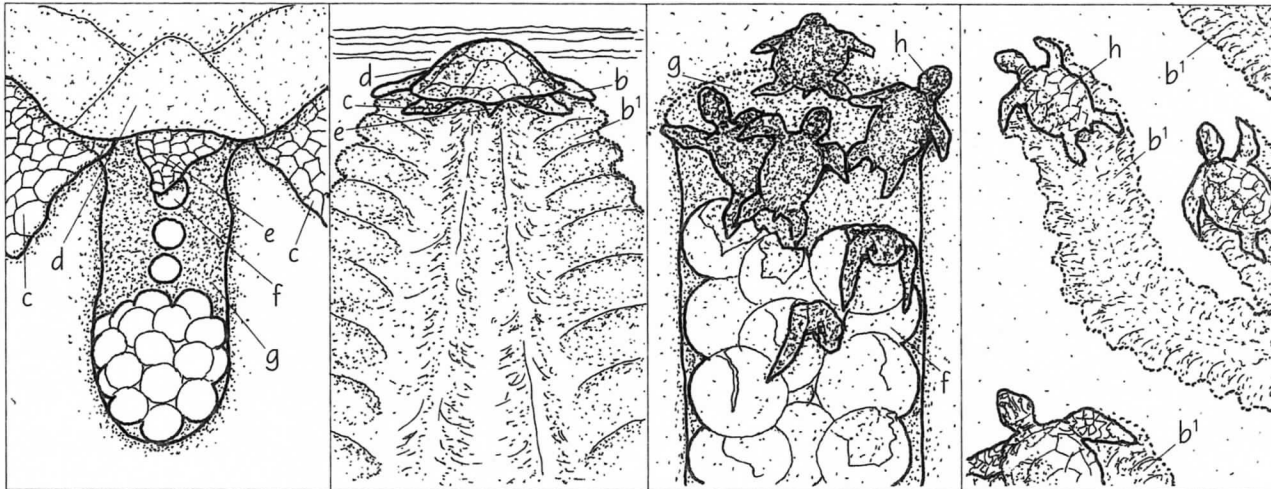
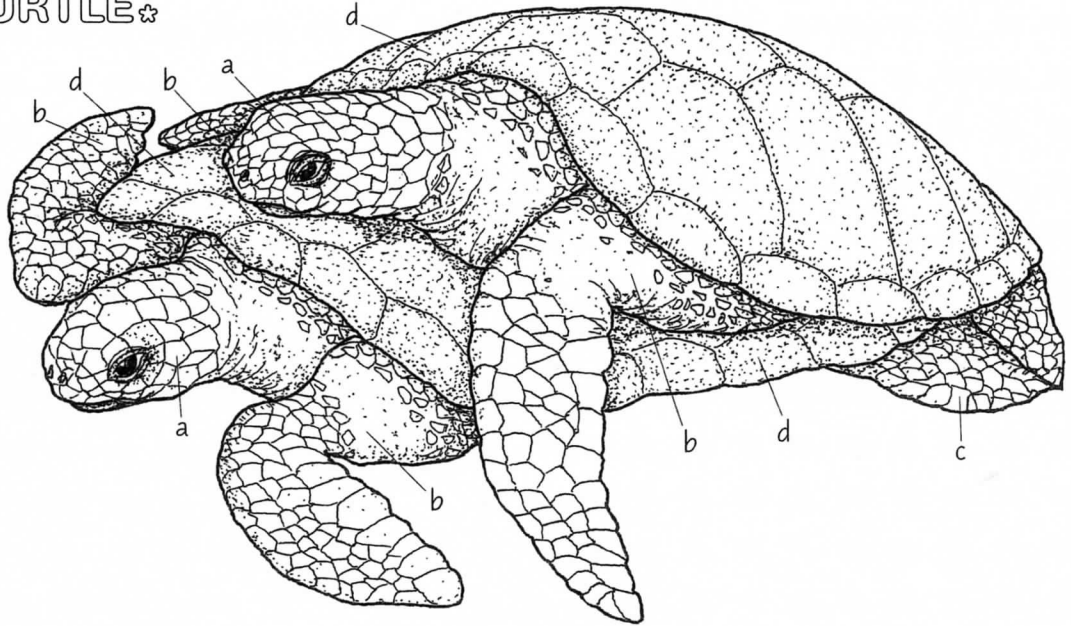
## Marine Reptiles: Turtles and Sea Snakes

1. Where do marine reptiles lay eggs?
2. What do sea turtles feed on?
3. Briefly describe sea turtle reproduction.
4. How have sea snakes adapted to the marine environment?

# TURTLES AND SEA SNAKES

## GREEN SEA TURTLE\*

- HEAD *a*
- FORELIMB *b*
- TRACK *b'*
- HIND LIMB *c*
- CARAPACE *d*
- TAIL *e*
- EGG *f*
- BURROW *g*
- JUVENILE *h*



## YELLOW-BELLIED SEA SNAKE; FLATTENED TAIL;

