

# AquaQuest Answers

## Grades 9-12

### Tropical Cove

1. Barbs on their tails and camouflage (counter shading)
2. Manduvi tree  
Part 2 – answer not on graphic – habitat destruction, poachers for the pet trade and nest predators (toucans and cockroaches) are some threats
3. By-catch during fishing trips, habitat destruction, poaching for medicines just to name a few threats against sharks

### Butterfly Garden

4. Proboscis, a tube-like tongue they use to drink nectar from
5. Camouflage, bright warning colors and eyespots help protect a butterfly from predators

### Penguins' Rock

6. Global warming, over-fishing, habitat loss, oil spills
7. Provides camouflage from predators. The birds' dark back blends into the dark ocean when viewed from above, while its light belly helps it blend into the surface when viewed from below. This is called counter-shading.
8. 1. Body covered with about 80 feathers per square inch. 2. Feathers are fit tightly together to keep cold water out. 3. Use beaks to spread oil on their feathers to make the feathers waterproof. 4. Layer of body fat to keep them warm.

### Boneless Beauties

9. Numbers will vary (any number); they blend in with their exhibit (gravel, rocks or background of exhibit); by being able to switch color fast, they will be able to adapt to their surroundings in case of a predator and hide, or to flash a warning color to scare off predators.
10. Their leg span can reach 12 feet. If a leg falls off they will re-grow another one.

### Boneless Beauties

11. Strobila forms by a polyp developing multiple body segments. Each separates and floats away becoming a free-swimming ephyra.
12. 95 – 98%
13. Overfishing removes competing predators. Water pollution and climate change both affect temperature, chemical make-up and levels of water which may also lead to algal blooms producing more food for jellies. Invasive species are introduced and have no natural predator; therefore, they out compete jellies for food and space.

### Secret Reef

14. Sand Tigers always shows its teeth, mouth more in front of head, is more brown in color, has small beady eyes, shorter dorsal fin, swims slower, etc...  
Sand Bar do not see teeth, mouth more on bottom, gray in color, big eyes, tall dorsal fin, swims faster, etc...
15. Answers will vary—Example: all Jacks, Lookdowns, Spadefish; advantages of schooling are finding food more easily and confusing predators.
16. Animals. Corals are made up of thousands of tiny animals called polyps.
17. Corals provide the algae a protected environment in which to live and the elements necessary for the algae to carry out photosynthesis. In return, 90% of the corals food source comes from the sugars and other compounds made by zooxanthellae.

### Seahorse Gallery

18. Answers may vary and may include: Camouflage, prehensile tails, maneuver eyes to see 360 degrees, bony plates, etc...

19. Seahorses are collected from the wild for medicinal purposes and sold to hobbyists for home aquariums. They are also crafted into souvenirs such as jewelry, paperweights, and ornaments. Development destroys vital habitat such as seagrass beds. Pollution can affect water quality.

### **Cove Forest**

20. The resemblance might fool predators into thinking the corn snake is a venomous copperhead, causing them to leave the corn snake alone rather than to risk being bitten and injected with venom.

21. Even though all snakes are beneficial, often corn snakes are confused with copperheads by humans. In fear, humans kill the non-venomous corn snake. Corn snakes feed on mice and are no threat to humans if unprovoked.

### **Discovery Hall**

22. A flattened head and body help it hold its place among the rocks of the streams it inhabits. The hellbender breathes through its skin in the water. Wrinkles and flaps increase the surface area of skin through which gas exchange can take place.

23. Over-fishing, water pollution, habitat loss, and changes in spawning routes due to dam construction.

24. Most immediate threat is a parasitic fungus called 'amphibian chytrid', which is deadly to amphibians and responsible for the extinction of dozens of frog species over past decades.

### **Delta Country**

25. Provide nurseries for young, habitat for migratory birds and homes for a wide diversity of wildlife. Remove sediments, toxic chemicals and other pollutants thus improving water quality.

26. The "buttressed" bases provide stability, helping the tree withstand high winds and heavy flooding.

27. Alligator Snapping Turtles use lures that look like worms on their tongues to attract fish.

### **River Giants**

28. Arapaima: Top of the water column. Have upturned mouths, therefore feed from the surface. Spend most of their time at the surface.

Sturgeon: Near the bottom. Barbels help to find food in and its mouth unfolds to allow it to pull-up its food.

29. North America: alligator gar, lake sturgeon, blue catfish

South America: arapaima, redbelly catfish, ripsaw catfish

Australia: striped catfish, giant whiptail ray, barramundi, marbled eel

Europe: beluga sturgeon

Asia: beluga sturgeon, giant pangasius catfish, wallago catfish, barramundi, striped catfish, giant gouramis, mustajuovamanni

30. overfishing, dams, pollution, habitat destruction

### **Rivers of the World**

31. Aggressive behavior in feeding groups (dry season)

Native people in South America often swim with piranhas (rainy season)

32. 1) human population

2) much of the land has been converted to agriculture

3) rely on wild animals for food and medicines

33. The fish have a similar body shape to sharks.

They have a bony skeleton and no gill slits.

34. Nishikigoi (nee she kee goy) - 1938

## **Turtle Gallery**

35. Pancake tortoise - flat and flexible soft shell. They have thin bones and wide gaps between the carapace bones

36. Flatten their head to the side of their body. Advantage: Provides some protection. Disadvantage: Can still be attacked in the head/neck region.

37. Become disoriented and wander, become prey to wild and domestic carnivores, killed on roads, become victim to lawnmowers, and picked up for pets.

## **Tennessee River Gallery**

38. This question might need some research and discussion. When water is released suddenly, water depth and temperature can drastically change. In many cases, these drastic water changes can kill fish. Sudden swift flowing water can sweep fish into the dam or away from vital habitat.

Such changes can also affect breeding grounds of fish – depth is an important factor in determining the spawning location of fish.

## **Lake Nicaragua**

39. The male fish protect the nests and the babies (fry). Most fish species do not protect their young once they have hatched.

## **Flooded Amazon Rainforest Exhibit**

40. Feeding on fruits and seeds the pirapatinga aides in seed dispersal. After ingesting the fruit, the seeds will be carried down the river and excreted along with nutrient-rich urea.

40. Building dams greatly affects this species' ability to successfully reproduce because the wet/dry cycle is interrupted.