

# WINDS AND WATERS

# ACTIVITY 2

As you saw in the film *Galapagos: Nature's Wonderland*, scientists believe that life arrived on these remote islands millions of years ago, carried by winds and waters. Today, winds and waters still sustain life on the Galapagos by bringing food and rainfall to the islands.

When the wind blows steadily across the surface of the ocean, it pushes the water along with it, creating what is called a *current*. These currents are almost like rivers flowing through the ocean and can carry water long distances from one region to another. The Galapagos Islands happen to be located at a spot where several currents come together from different directions. Draw and label these currents on the map below as you read about how they sustain life on the islands.

- **Humboldt Current:** Created by steady winds blowing toward the north along the western coast of South America, the Humboldt Current carries cold water up from Antarctica, then turns west at the Equator toward the Galapagos Islands. The cold waters and cool winds of the Humboldt Current create a milder climate on the islands than one would expect



at the Equator, and they carry nutrients that feed algae and plankton, which draws fish and other sea life to the islands' coastlines. In addition, the winds that push the Humboldt Current bring moisture to the islands, spreading a cloudy mist over the slopes of the volcanoes from May through December.

- **Panama Current:** Created by steady winds blowing toward the south along the western coast of Central America, the Panama Current flows along the curve of the coastline to the Equator, where it turns west toward the Galapagos Islands. This current brings warm water to the islands, which does not contain many nutrients for sea life. But the humid winds that push this current brings rainfall from December through May, providing the islands with a rainy season that supplies the land-dwelling plants and animals with fresh water.

- **Cromwell Current:** The third current flowing toward the Galapagos Islands is not caused by winds. Instead, the Cromwell Current flows below the surface of the ocean, like an underground river, carrying water from Asia across the whole width of the Pacific Ocean as it travels eastward along the Equator. Because it flows deep, the Cromwell Current's waters are cold and rich with nutrients, including nutrients washed into the sea by rivers on the islands of southeast Asia. When it reaches the Galapagos, this current is forced upward along the coastline of the western islands, which chills the water there and fills it with nutrients, creating an ideal environment for sea life.

**Draw and label these three currents on the map at left.**

Now use your map and what you have learned about the currents of the Galapagos Islands to discuss these questions in class.

- Which current is most important to the land animals and plants that live on the islands? Why?
- Which currents are most important to the sea life that lives along the coastlines of the islands? Why?
- Which current is most important to the climate of the Galapagos Islands? How would a change of climate affect the plants and animals that live on the islands and in its waters?

