

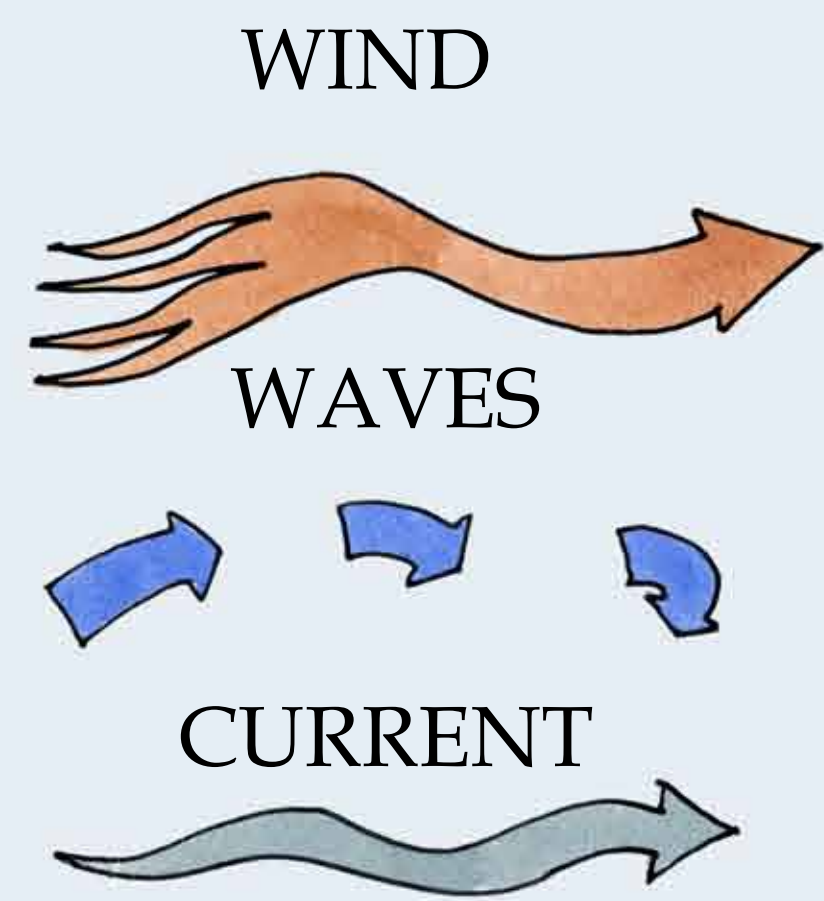
DUNE FORMATION

HOW TO MAKE AND BREAK A DUNE

IT TAKES 3 THINGS TO MAKE A DUNE

1 MOVING FORCE

Since glacial melting, prevailing westerly winds, waves, and currents have moved glacial sediments to the eastern end of Lake Ontario.



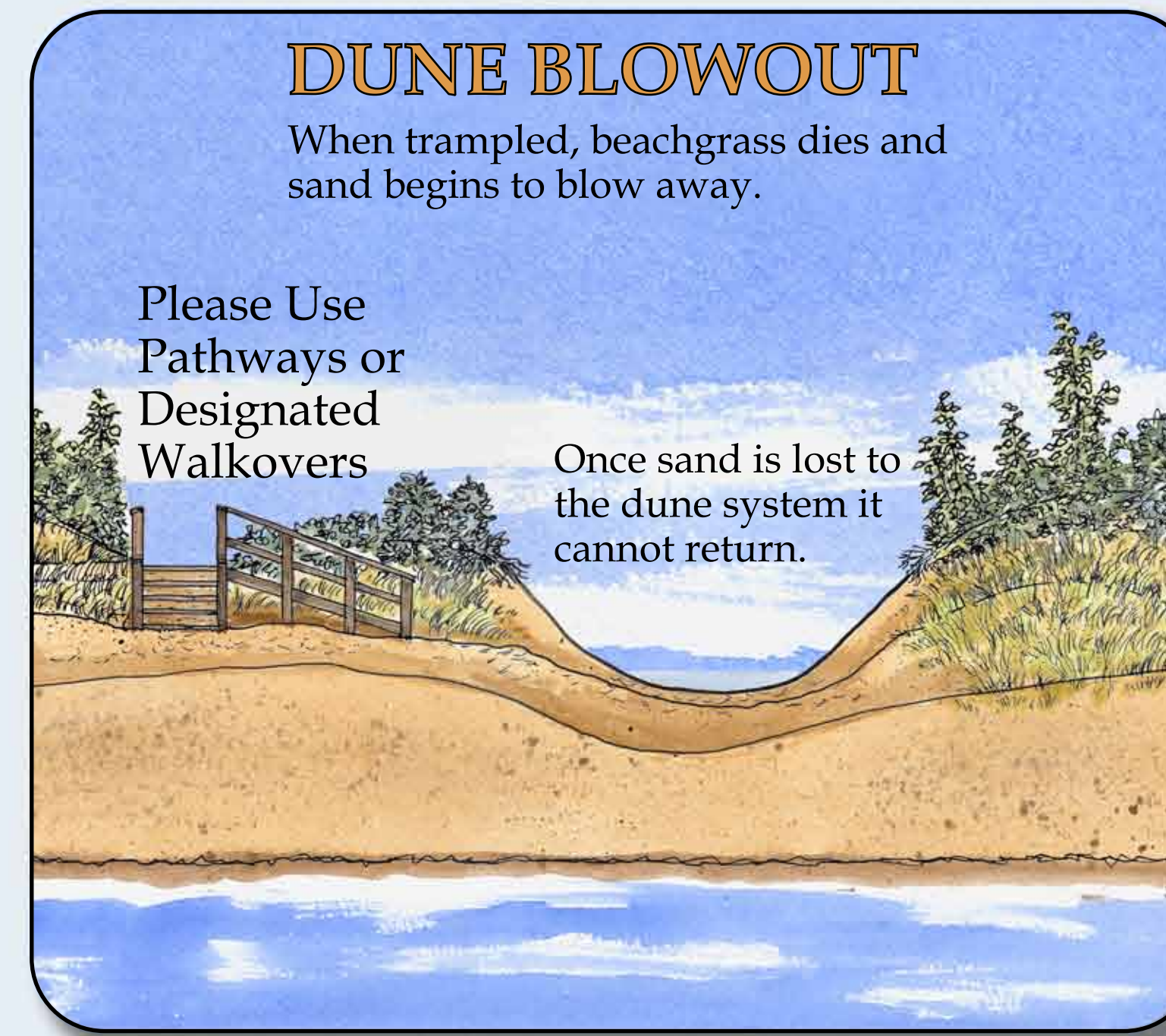
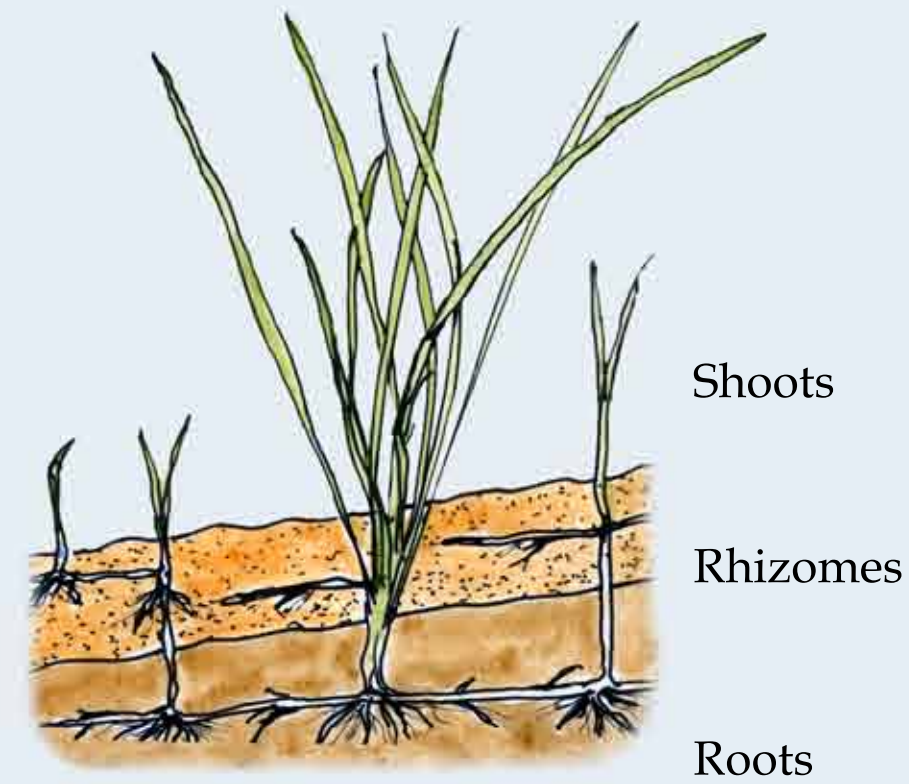
2 SAND SOURCE

Today, these sediments that originated from glaciers are being moved around but no new sand is being added to the supply.



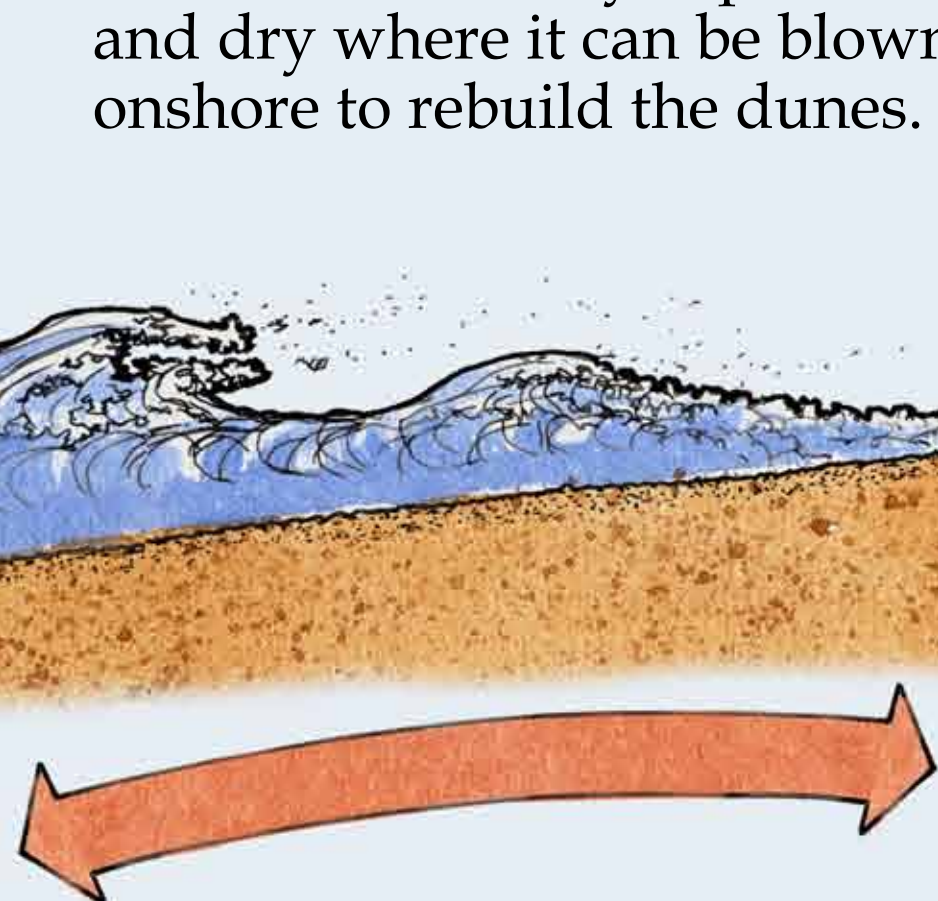
3 STOPPING AND HOLDING STRUCTURE

Sand moves whenever wind speed is at least 12 mph. Specialized pioneer plants, particularly beachgrass shoots, slow the wind so sand drops, then hold it with a network of roots and underground rhizomes.



SAND CYCLE

When the water level of Lake Ontario is high, sand is eroded from the beach and dunes, and accumulates nearshore. When the water level of Lake Ontario is low, the beach becomes broad. While some sand moves further offshore, the newly exposed sand is left high and dry where it can be blown further onshore to rebuild the dunes.



NEAR SHORE SAND
Sand that is underwater to a water depth of about 30 feet.

BEACH

FOREDUNE

Extremes of temperature, moisture, wind, and sand abrasion allow growth of just a few pioneer plants on the dunes, especially beachgrass, wormwood, and eastern cottonwood seedlings.

SWALE

Low area between the dunes shelters dune willow, poison ivy and wild grape.

INTERIOR DUNE

The interior dunes support maturing cottonwoods, various shrubs, grasses, and wildflowers.

DUNE SUCCESSION

Pioneer plants trap sand to build the foredunes. Then the foredunes block the wind, and conditions ease, allowing larger shrubs and trees to thrive.

BACKDUNE

In some areas, back dunes have grown and been stable for more than 100 years and support a forest, including red oak and sugar maple.



Eastern Cottonwood

Dune Cherry

Dune Willow

Red Oak

Poison Ivy

Wormwood

CHAMPLAIN BEACHGRASS



Other Interpretive Panels in this Series.