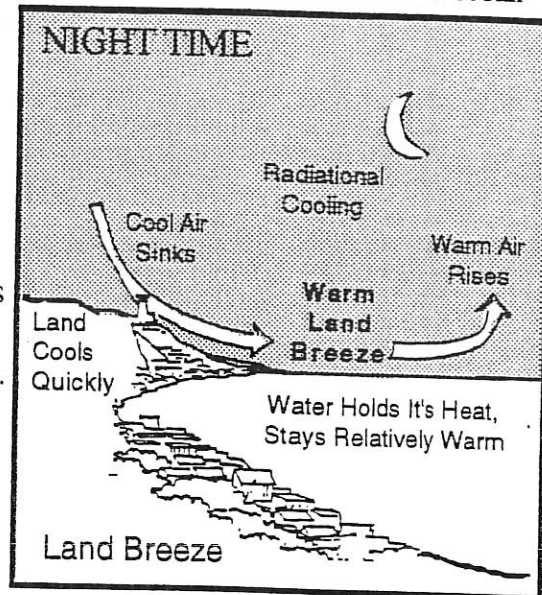


Why is the shore so popular in hot summer weather? During the day, when the sun shines, the land heats up more than water. You may recall that when air is heated, it expands and becomes less dense. A local wind result when the warm, light air over the land rises, and the cooler air from the ocean blows in to replace it.

Not only does this temperature differential make a breeze, but the wind is relatively cool. Continued heating of the land sustains these winds until the sun sets and the land begins to cool off. Then the breeze reverses.



The night breezes blow from the land back out to sea. This is because at night, the land cools off rapidly, but the water holds more of its warmth. Now the ocean is warmer than the land, and the warm ocean air rises, causing the air from over the land to blow out to sea.

These localized winds make the shore a popular place in hot summer weather. As long as there are no large scale weather systems to overpower these land and sea breezes, these localized winds moderate the summer temperatures at the shore. Heat flow caused by differences in the density of a fluid is known as convection.

Many of these answers can be found in, *Air Pressure and Winds* and in the *Earth Science Reference Tables*.

1. Winds *always* blow from _____ pressure to _____ pressure.
2. What causes low pressure over the land during the day? _____
3. What are the U.S. *and* Metric units of air pressure?(*Ref.Tables*) _____
4. What name is applied to the circulation of energy by density currents in a fluid? _____
5. Wind is a vector quantity because it has both _____ and _____.
6. What is a sea breeze? _____
7. On each of the diagrams above, write an "H" and an "L" to show where the surface atmospheric pressure is relatively high and relatively low. (Show an "H" and an "L" on both diagrams.)
8. Why does the water temperature change less than the land temperature? _____
9. According to the Reference Tables (page 14),
 29.5 inches of mercury = _____ mb, 999 mb = _____ inches of mercury
 30.22 inches of mercury = _____ mb, 1016 mb = _____ inches of mercury