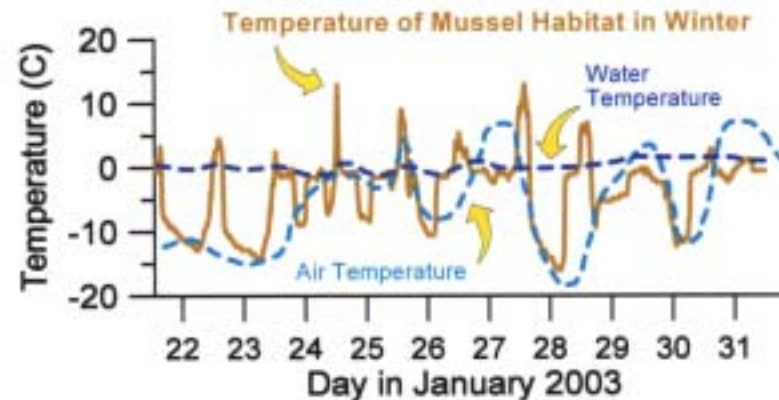


## Life Can Be Tough in a Salt Marsh

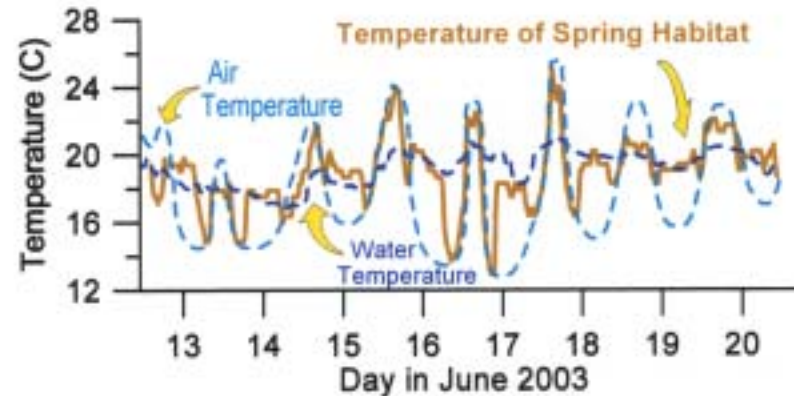


Winter

Ribbed mussels live on exposed surfaces in a salt marsh. Many live in places that are underwater only at high tide. At low tide they are exposed to the air. When the tide is high and they are underwater, their habitat is at the temperature of the water. In winter, this is often near zero degrees. At low tide, their habitat is near air temperature, unless the sun is shining on the mussels and it warms them (see graph for midday of January 27 when it reached 10+ degrees). However, at night in winter, the temperature of the mussels' environment can be near -18 degrees (see early morning hours on January 28). At this temperature, tissues in the mussel will start to freeze. Although they are protected from serious harm by an internal antifreeze, they must be very hardy animals to go from freezing temperatures to warm sunshine over and over again.



In the spring (and in the fall), air temperature is more similar to the water temperature. Unlike the wintertime, when the daily temperature change for a mussel can be 25 degrees or more, springtime temperature changes are typically 4 to 6 degrees. Temperatures are moderate – well above freezing! During this time the mussels feed on the abundance of food in the water (when they are submerged) and replace the energy they used while surviving the winter. They also restore damaged tissues, grow, and get ready for the spawning season that takes place in early summer.



Spring

