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| **How is the salt produced?**  The salt producing companies that use wetland areas to produce their salt have used processes that has destroyed the land and forced the native species to adapt to a significantly reduced habitat (USGS). Over the past century the amount of salt that is produced has increased from ten million tons annually to over two hundred million tons today (USGS). This high rate of salt loss will drastically change the conditions in the salt marshes and eventually force many of the native organisms to die off if nothing is done about it. North America alone produces over one fourth of the world�s salt (www.saltin). The facilities that are used range from primitive evaporation methods to multi-stage salt refineries. In California, specifically the San Francisco bay, a combination of the evaporation and the refinery methods are used.  It takes five years to produce the salt that you will use on your kitchen table (Don Edwards Interpretation center). The first step in the process is to damn a portion of the bay into a small pond. These small ponds are called intake ponds and are the first in a chain of successively more concentrated ponds. The intake ponds are filled with the bay water, which can be characterized by the green tint in the water and the presence of small fish, worms, and other bacteria.  The next few ponds are called intermediate ponds. As the water is pumped from the intake pond into the intermediate the concentration of salt in the ponds becomes higher. During this process the water in the pond sits in the sun causing the water to evaporate and leave the salt behind. Also, as the water progresses from pond to pond the water is less and less referred to as saltwater and more so as brine. The concentrations in each progressive pond are higher than the one prior to it. Because the concentration of salt in these ponds is higher small fishes and worms can no longer live in the ponds. The main organisms that are found in these ponds are the brine shrimp. Also the green tint from the algae is replaced by a red tint due to red-colored algae that can withstand the high salt concentration: the redder the pond, the higher the salt concentration.  Eventually the water in the ponds will become so concentrated that even the brine shrimp can no longer survive within the ponds. When the salt concentrations reach approximately 25.8% salt crystals begin to form. The deep red color of the water now can be attributed more to bacteria than to the algae. At this point there is very little water left in comparison to the concentration of salt and a layer of salt crystals would be found along the bottom of the ponds. It is in these ponds, the crystallizing ponds, that the final steps in the solar-evaporation method are completed. The layer of salt on floors of these ponds will build up to a level of salt between 10-25 cm. It this layer of salt on the pond floors that is harvested yearly.  **How does the production of salt affect the environment?**  In a healthy salt marsh environment there is an abundance of plant life and animal life. The salt marshes and the tidal mud flats, "contain the densest, richest growth area for animals of any natural community in the world."(Conradson, p6) This diversity creates stability within the ecosystem. Each species has its own niche within the community and provides essential resources for the rest of the species in the community. When an environment is altered so that portions of species niches are eliminated, the species are forced into a smaller environment where they will be less productive and Darwin�s Law will set in forcing many of the organisms to die off. Eventually most of these transplanted species will force into extinction or will force other species into extinction. "The marshes of a hundred years ago formed a vast community of mud flats, slat marshes, and shallow waters," (Conradson, p6) but today this extensive community has been drastically reduced.  [<--- Back](http://docs.google.com/introduction1.html) [Next --->](http://docs.google.com/introduction3.html)  [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/Procedure.html)][[Data](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Bilio/Links](http://docs.google.com/biblio.html)]  [[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |