



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Nicholas J. Hennrikus	Project Number J0810
Project Title An Efficient, Inexpensive, Space Sparing, Water Desalination Proposal for Residential Communities	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to build a model of a desalination chamber and to extrapolate my findings to propose a desalination system feasible for residential communities.</p> <p>Methods/Materials Plans for a desalination chamber were drawn, then the chamber was built out of acrylic. Sea water was boiled and fresh water collected. All water was tested for salt, nitrite, ammonia and pH. I measured the time required to boil the water and the amount of water collected and calculated the surface area of my desalination chamber and the cost of the needed electricity. I then used these results to calculate the size of a desalination chamber and the heating price required to produce daily water for family household use.</p> <p>Results My desalination model can make 2 gallons of fresh water in a day. Therefore, to make 100 gallons of water per day (the amount allotted to U.S. citizens) an 8ft X 8ft X 8ft chamber would be necessary. A family of 3 would require a 13.7ft X 13.7ft by 13.7ft chamber.</p> <p>Conclusions/Discussion My conclusion is that it is feasible to use desalination as a major fresh water source for residential populations. The chamber size that I calculated would fit very easily on the roof of a flat topped portion of a house. Every house could be fitted with a roof desalination chamber that is efficient, inexpensive and of a manageable size. Not only would this proposal solve many of our water issues, it would have far reaching effects on saving our rivers and the vegetation and wildlife that flourish in that environment.</p>	
Summary Statement My project is about efficiently making fresh water from sea water for daily use in residential communities.	
Help Received My parents helped with the calculations, Precision Plastics helped make my desalination chamber, PG&E gave me information on electrical costs.	