



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Marat Mustafaev; Daniel Rostamloo</b>	<b>Project Number</b> <b>S1517</b>
<b>Project Title</b> <b>Sustainability of Katsuwonus pelamis in California Pelagic Fisheries: Analysis of Natural and Fishing Mortality Data</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The Skipjack Tuna (Katsuwonus Pelamis) is a pelagic species which is currently farmed in California by numerous fisheries. The objective of the project was to determine whether the continued harvest of the species was sustainable.</p> <p><b>Methods/Materials</b> Used data from the National Marine Fisheries Service to represent annual landing and pricing data of the Skipjack Tuna. Microsoft Excel graphing software was used in graphing the data. Mortality data -- both fishing and natural -- were obtained from research papers published by Mark Maunder. A mathematical model which requires the recruitment into adulthood to be greater than or equal to the deaths of the adult population ultimately determined the sustainability.</p> <p><b>Results</b> The mathematical model reflects that the Skipjack Tuna is sustainable. This result is congruent with our earlier hypothesis conjectured using information on fishery restriction in the twentieth century.</p> <p><b>Conclusions/Discussion</b> The model is a highly transferrable utility in measuring the sustainability of other farmed species, fish or otherwise. This is due to the formula's use of simple, easily obtained data sets regarding a harvested species.</p>	
<b>Summary Statement</b> A mathematical model was developed in order to understand and determine the sustainability of farmed species and the Skipjack Tuna in particular.	
<b>Help Received</b> Mark Maunder and the National Marine Fisheries Service for their data on Katsuwonus Pelamis mortality and annual landings, respectively.	