

Cross-Curricular Argumentation Guide A

Name:	Date:	Class:	Topic: Changes to an Ecosystem – based on the California Sea Otter
<p>1. Clarify the claim with any qualifier and define key terms. The California sea otter is a good example of how changes to one biological component of a balanced ecosystem affects other populations.</p> <ul style="list-style-type: none"> • Balanced ecosystem - a biological community in which plants and animals coexist with other species and their environment 			
<p>2. List the evidence.</p> <ol style="list-style-type: none"> 1. Off the coast of California, sea otters eat sea urchins, which eat kelp plants, among which fish lay eggs and raise young. 2. Between 1700 and 1800, the sea otter was hunted almost to extinction for its fur. 3. Following the decrease in the sea otter population, the sea urchin population grew quickly. 4. With an increase in sea urchins, the kelp beds got smaller. 5. Within a few years, the fishermen noticed that fish were disappearing. 6. In 1911, the International Fur Seal Treaty was passed to protect the sea otters from being hunted. The sea otter population increased. 			
<p>3. Analyze the reasoning.</p> <ol style="list-style-type: none"> 1. Sea otters, urchins, kelp, and fish are populations that make up a balanced ecosystem. 2. Humans caused a change in a biological component of the ecosystem by hunting and significantly decreasing the sea otter population. 3. With fewer sea otters to eat them, more sea urchins survived, and their population increased. 4. Since there were more sea urchins, they ate more kelp plants. 5. Since the kelp population had decreased, the fish had no place to lay eggs and raise their young. 6. With more sea otters there were fewer sea urchins, larger kelp beds, and more fish appeared i.e., a balanced ecosystem returned. 			
<p>4. Identify other arguments for or against the claim. According to seaotters.com, the sea otter species is considered a keystone species because of their critical importance to the health and stability of the nearshore marine ecosystem. Their health reflects that of California's coastal oceans.</p>			
<p>5. Make judgments about the quality of evidence, reasoning, and other arguments. The quality of the evidence is good because it gives a factual timeline for changes in the ecosystem of the California sea otter. The reasoning ties the claim to the changes in a logical way showing causes and effects. The information from seaotters.com adds support from an authority.</p>			
<p>6. State why you accept or reject the claim. I accept the claim based on the evidence, reasoning, and authority that supports the claim.</p>			