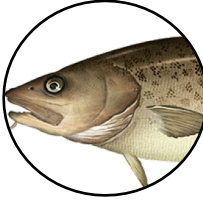


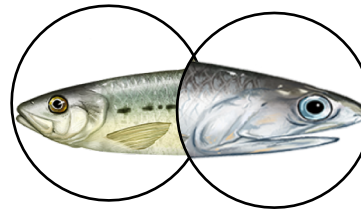
Kelp, urchin, abalone
Population declines and fishery closures due to loss of kelp beds.



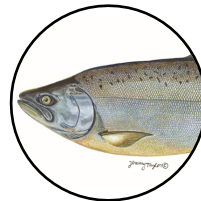
Pacific cod
Population declines due to reduced prey availability and increased metabolic demands.



Dungeness crab
Fishery closures due to harmful algal blooms and whale entanglements.

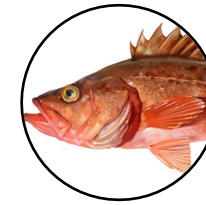


Sardine and anchovy
Low sardine productivity and high anchovy productivity reversed expectations for warm years.

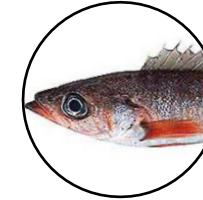
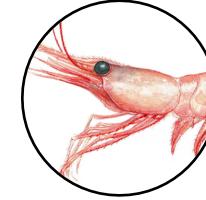


Chinook salmon
Overfished due to reduced productivity and model failure.

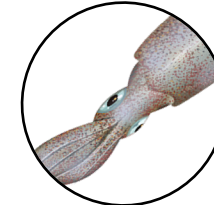
Bocaccio rockfish
Enormously high recruitment rebuilt this previously threatened fish stock.



Shrimp species
Revenues spiked mid-heatwave due to record high prices and strong recruitment before the heatwave.

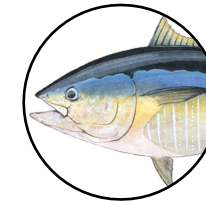


Shortbelly rockfish
Increases in abundance approached bycatch limits in Pacific hake fishery.



California market squid
Increases in distribution created an unregulated emerging fishery.

Pacific bluefin tuna
Increased abundance was a boon for the recreational fishing industry but caused early closures in commercial fishery.



Direct
negative
impacts

Indirect
negative
impacts

Neutral
impacts

Positive impacts,
w/ higher mgmt.
challenges

Positive impacts,
w/ lower mgmt.
challenges

Social-ecological impact of the heatwave