# Ocean Habitat & Community ecology: Pacific Ocean's Perilous Turn

This activity is modified from an InTeGrate module in the Ocean Sustainability module
https://serc.carleton.edu/integrate/teaching_materials/sustain_ocean/activity3.html

The Seattle Times, "Sea Change: The Pacific's Perilous Turn"


http://apps.seattletimes.com/reports/sea-change/2013/sep/11/pacific-ocean-perilous-turn-overview/
Address current concerns around ocean acidification and the measured impacts on the biology of individual species, food webs, and ecosystem productivity. Approximately 1 billion people get the majority of their protein from the sea!

**Video questions:**

1. Name three commercially important organisms that already have been impacted by ocean acidification. (0–4:10 min)

2. Scientists are using carbon dioxide seeps as "natural laboratories" to study the potential impacts of ocean acidification on coral ecosystems 50 to 100 years into the future (i.e. Papua New Guinea).

   Explain how coral communities compare at a "normal" versus CO2 seep site in regard to: (4:10–6:20 min)

   How does coral diversity differ?

   Where are corals dominating?

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Where are algae dominating?

Where do you find a higher number and diversity of associated reef organisms (i.e. fish)?

3. Ocean acidification and fish. Give three specific examples of how fish species (i.e. clown fish, pollock) may be directly (e.g. physiologically) or indirectly (food web shifts) affected by ocean acidification. Explain. (6:20–7:30 min)