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Eastern Tropical Pacific

All organisms in an ecosystem are connected and are all necessary for keeping the ecosystem healthy. Activities like overfishing, hunting top predators or causing climate change and ocean acidification can break down the connections in an ecosystem. Today you will learn that sometimes human impacts have unintended and unpredictable consequences for population dynamics.

In the Eastern Tropical Pacific, tuna is BIG money. But tuna can be hard to find in such a large open ocean habitat. Dolphins are easier to find at sea – they come to the surface to breathe and are often jumping out of the water. It turns out that dolphins and tuna often swim or “school” together in the Eastern Tropical Pacific. For many years fisherman would set huge nets around the dolphins they could see knowing there would be hundreds of tuna below the surface. When they pulled the net onboard the ship to harvest the tuna, most of the dolphins would die. This was an unpredictable consequence of fishing. The fisherman had no use for the dolphins so they would just be thrown overboard, usually dead. Species that are caught but are not meant to be and can’t be sold for \$\$ are called “bycatch”. The dolphin deaths created an uproar in the US and fisherman had to change their fishing method. This is the reason why you see “dolphin safe” labels on tuna in supermarkets today.



Exactly how much have dolphin populations declined due to this fishing? Plot the data below to see how fishing has impacted these dolphin populations and if the “dolphin safe” label has really made tuna fishing safe for dolphins.

Hint: Put “Year” along the X-axis. Put “Dolphin Abundance” on the Y-axis. Make a 2nd Y axis on the right side of the graph for “Tuna Caught”.



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Year	Dolphin Abundance (thousands)	Tuna caught (hundreds of tons)
1960	3500	1000
1965	2000	1000
1970	1000	1500
1975	900	2000
1980	800	2000
1985	600	2250
1990	600	3000
1995	600	2250
2000	600	4000

Share your findings with the class:

- 1) What happened to dolphin abundance as more tuna were caught?
- 2) What is the name for a species that gets caught in a fishing net that is not the intended catch?
- 3) Have dolphin numbers recovered?