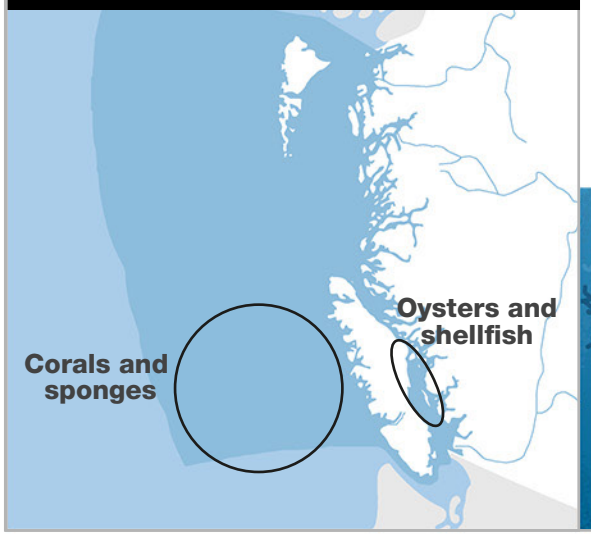
Biological impacts of acidified waters

Oceans worldwide are absorbing much of the extra carbon dioxide being released into the atmosphere

PACIFIC



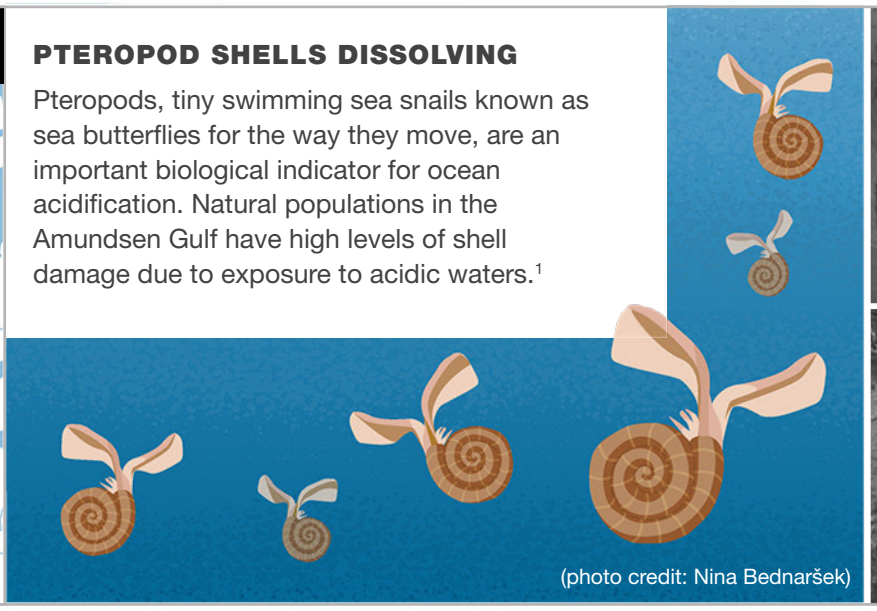
NATURALLY ACIDIC

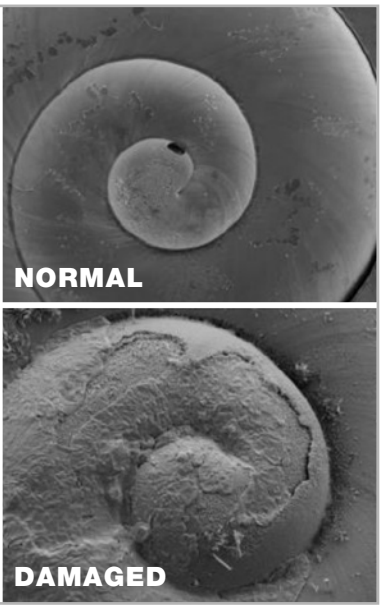
The Pacific is the most naturally acidic of Canada's three oceans, so an increase in acidity may have a stronger effect here. Rising seawater acidity makes it more difficult for the shells of oysters and other shellfish to form properly. It also impacts corals and sponges, which provide important habitat for other creatures.

ARCTIC

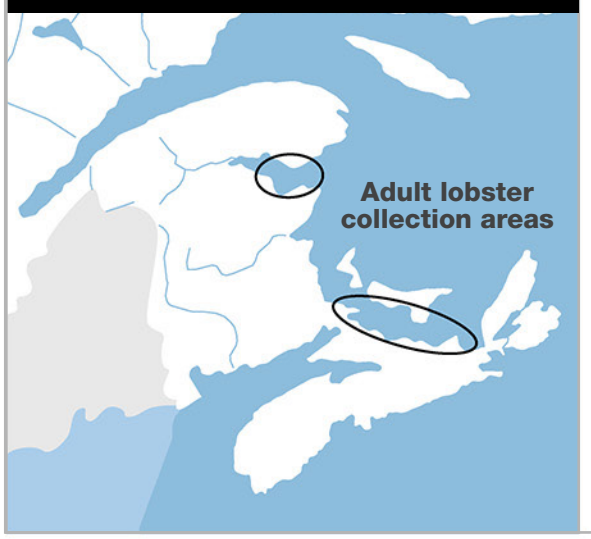
PTEROPOD SHELLS DISSOLVING

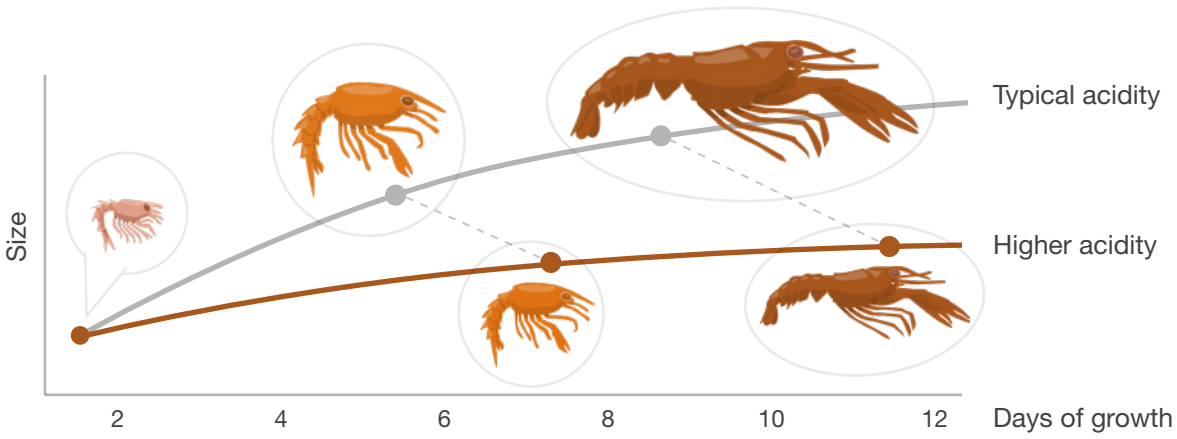
Pteropods, tiny swimming sea snails known as sea butterflies for the way they move, are an important biological indicator for ocean acidification. Natural populations in the Amundsen Gulf have high levels of shell damage due to exposure to acidic waters.[1]





ATLANTIC





JUVENILE LOBSTER GROWTH

Lab experiments indicate that ocean acidification may impact the growth and development of larval American lobsters as well as increase death rate and slow the development of adult lobsters.[2,3]

1. Niemi, A., Bednaršek, N., Michel, C., Feely, R.A., Williams, W., Azetsu-Scott, K., Walkusz, W., Reist, J.D., 2021. Biological impact of ocean acidification in the Canadian Arctic: widespread severe pteropod shell dissolution in Amundsen Gulf. Frontiers in Marine Science. 8:600184.
2. Menu-Courey, K., Noisette, F., Piedalue, S., Daoud, D., Blair, T., Blier, P.U., Azetsu-Scott, K., and Calosi, P., 2019. Energy metabolism and survival of the juvenile recruits of the American lobster (*Homarus americanus*) exposed to a gradient of elevated seawater pCO2. Marine Environmental Research, 143, pp. 111-123.
3. Keppel, E.A., Scrosati, R.A., and Courtenay, S.C., 2012. Ocean acidification decreases growth and development in American lobster (*Homarus americanus*) larvae. Journal of Northwest Atlantic Fishery Science, 44, pp. 61-66.

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