



Gender specific reproductive strategies of an arctic key species (*Boreogadus saida*) and implications of climate change.

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Abstract: The Arctic climate is changing at an unprecedented rate. What consequences this may have on the Arctic marine ecosystem depends to a large degree on how its species will respond both directly to elevated temperatures and more indirectly through ecological interactions. But despite an alarming recent warming of the Arctic with accompanying sea ice loss, reports evaluating ecological impacts of climate change in the Arctic remain sparse. Here, based upon a large-scale field study, we present basic new knowledge regarding the life history traits for one of the most important species in the entire Arctic, the polar cod (*Boreogadus saida*). Furthermore, by comparing regions of contrasting climatic influence (domains), we present evidence as to how its growth and reproductive success is impaired in the warmer of the two domains. As the future Arctic is predicted to resemble today's Atlantic domains, we forecast changes in growth and life history characteristics of polar cod that will lead to alteration of its role as an Arctic keystone species. This will in turn affect community dynamics and energy transfer in the entire Arctic food chain.

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