

FEEDING ECOLOGY OF THE BASKING SHARK
(*CETORHINUS MAXIMUS*) RELATIVE TO
DISTRIBUTION AND ABUNDANCE
OF PREY

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ABSTRACT

FEEDING ECOLOGY OF THE BASKING SHARK (*CETORHINUS MAXIMUS*) RELATIVE TO DISTRIBUTION AND ABUNDANCE OF PREY

The relationship between prey availability and presence of basking sharks feeding at the surface was determined by collecting zooplankton near and away from feeding basking sharks. Zooplankton density in basking shark feeding areas was significantly greater (4-42 times) than away from feeding areas in Monterey Bay (one-tailed paired t-test, $n=5$, $p=0.016$) and Santa Barbara Channel Islands ($n=1$). There were no differences in zooplankton density near and away from basking sharks sighted at the surface in Clayoquot Sound, B.C. (power=97%) and the Gulf of Maine (power=63%). A calanoid copepod, *Calanus pacificus*, was the most important prey item in Monterey Bay, British Columbia, and the Santa Barbara Channel Islands. *Calanus finmarchicus*, was the most important taxon found in feeding areas in the Gulf of Maine. Calanoid copepods *Metridia longa*, *Calanus hyperboreus*, and *C. finmarchicus* were the most important prey items identified from nine basking shark stomach contents collected off Saint John's, Newfoundland. In Monterey Bay, peak basking shark abundance corresponded with greater zooplankton abundance in May, August, and November. Increased basking shark sightings in nearshore regions relative to offshore regions corresponded with greater zooplankton abundance nearshore than offshore between 1991 and 1992. Therefore, basking sharks may move into surface waters for feeding and possibly for other purposes.