

BY CHUGEY SEPULVEDA, PhD, AND SCOTT AALBERS, M.S.

MAKO SHARK (*ISURUS OXYRINCHUS*)



Circle hooks *should* allow for easier release – key word being *should*, with jaws like that.

With Southern California water temperatures on the rise, early summer brings large numbers of juvenile mako sharks to the local and offshore banks. Southern California is an extremely important place for the mako,

as it is one of the only documented rookeries for this species in the north Pacific. During this time makos can be widespread throughout the region, from as close in as a mile from the beach to the farthest offshore high spots. These sharks are here to feed, grow, and reap the benefits of our bait-rich waters.

In typical years makos remain in US waters most of the summer and fall months, giving thousands of anglers an opportunity to find them. As winter comes around and water temperatures near the low 60s, most of the juveniles depart again to the south, just as they arrived. In addition to this predominant north-south movement pattern, some individuals have moved far west, reaching the waters off Japan.

Though we are now beginning to understand some of the migratory behaviors of juvenile makos along California's coast, little information exists

for adult makos, which provide the basis for our fishery. What we do know is that large females enter the region to pup, and recent years have seen more and more of these large adults hit the scales.

Life-History

Makos are born ready for the pelagic environment at a large size of about five pounds and two and a half feet long. Newborns can readily take down trolled lures up to half of their body size and have teeth just as sharp and scary as adults. Female makos can achieve weights in excess of 1,000 pounds, although the average mako caught in California ranges in size from 30 to 50 pounds. Studies on mako age and growth have shown mixed results; however, recent data from the National Marine Fisheries Service, Highly Migratory Species Division in La Jolla show that sexual maturity ranges from

six to twelve years, with males maturing much earlier than females. These age estimates suggest that females need to be eight to nine feet long and weigh in excess of 300 pounds to reach sexual maturity.

Fishery

In Southern California makos are harvested by both commercial and recreational anglers, with the average size of landed fish only 34 pounds dressed. In California, commercial and recreational landings peaked in the mid to late 1980s with over 600,000 pounds landed. It was also during this time that the mako really caught on with the recreational fleet, with the number of angler trips targeting makos jumping tenfold to over 400,000 trips annually.

Mako fishing is still popular today and offers a great experience for everyone from marlin fisherman trolling their EALs to dedicated shark fisherman religiously dunking buckets along the canyon edges. This is a particularly important fishery for younger generations, as the intrigue of shark fishing seems to really draw their interest.



Average size mako off the South Coast is just 30-pounds.

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Regardless, the mako is usually a welcome catch that offers great excitement as well as excellent table fare.

Conservation

Most importantly, avoid taking large adult females, as these are the source of our future fishery and require an entire decade to reach sexual maturity. As with thresher sharks, harvesting males (recognizable by their finger-like

claspers located along the inside of the anal fins) may also prove to be an effective conservation strategy. Other ideas include the use of circle hooks, especially if it is the case that you might want to release the shark. Lastly, reducing the overall harvest to a few sharks per year per angler may also help sustain this fishery.

As with any fishery, the answer is *moderation*. Because we know so little about the adult population and how the stock gets utilized by other neighboring nations (Mexico), we need to proceed cautiously to ensure the longevity of this resource.

PIER is a non-profit 501(c)3 research institute dedicated to scientific research and the sustainable management of the marine environment. Special thanks are offered to Mr. Thomas Pflieger and family and Darryl Lewis and the Harris Foundation for their continued support of our mako research. We would also like to thank Captain Tommy Fullam and Vicki Wintrode. To hear more about PIER research projects, please visit us at www.pier.org. ■

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