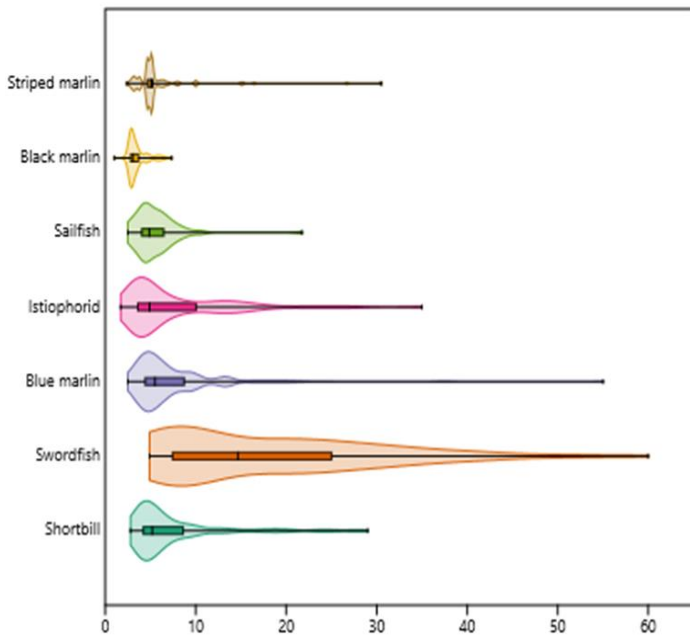


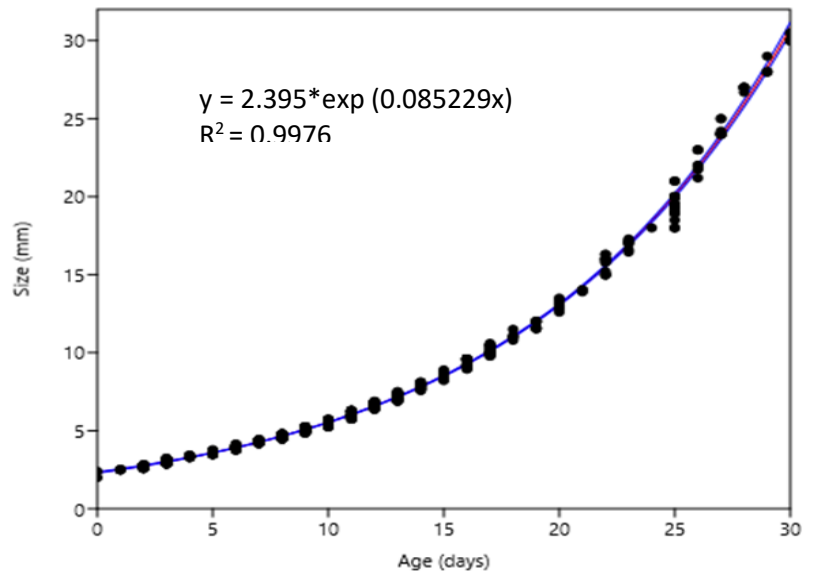
Kona Project Phase I-Interim Report #2

Research:

Phase 1 of the *Wild Oceans Kona Project* continues to progress. Over the last few months additional larval capture data have been discovered and added to our comprehensive data base. Additionally, lead scientist Dr. Mike Musyl and colleagues are actively trialing species-specific growth models. Preliminary models (below) suggest a good fit to the data ($R^2 = 0.9976$). The age and growth of the larvae is important as it will inform how far larvae could move (or be advected) and where they were potentially hatched. Knowing this, the presence of larvae at different sizes (ages) can be used to estimate spawning areas using common sense bounds and movement scenarios.

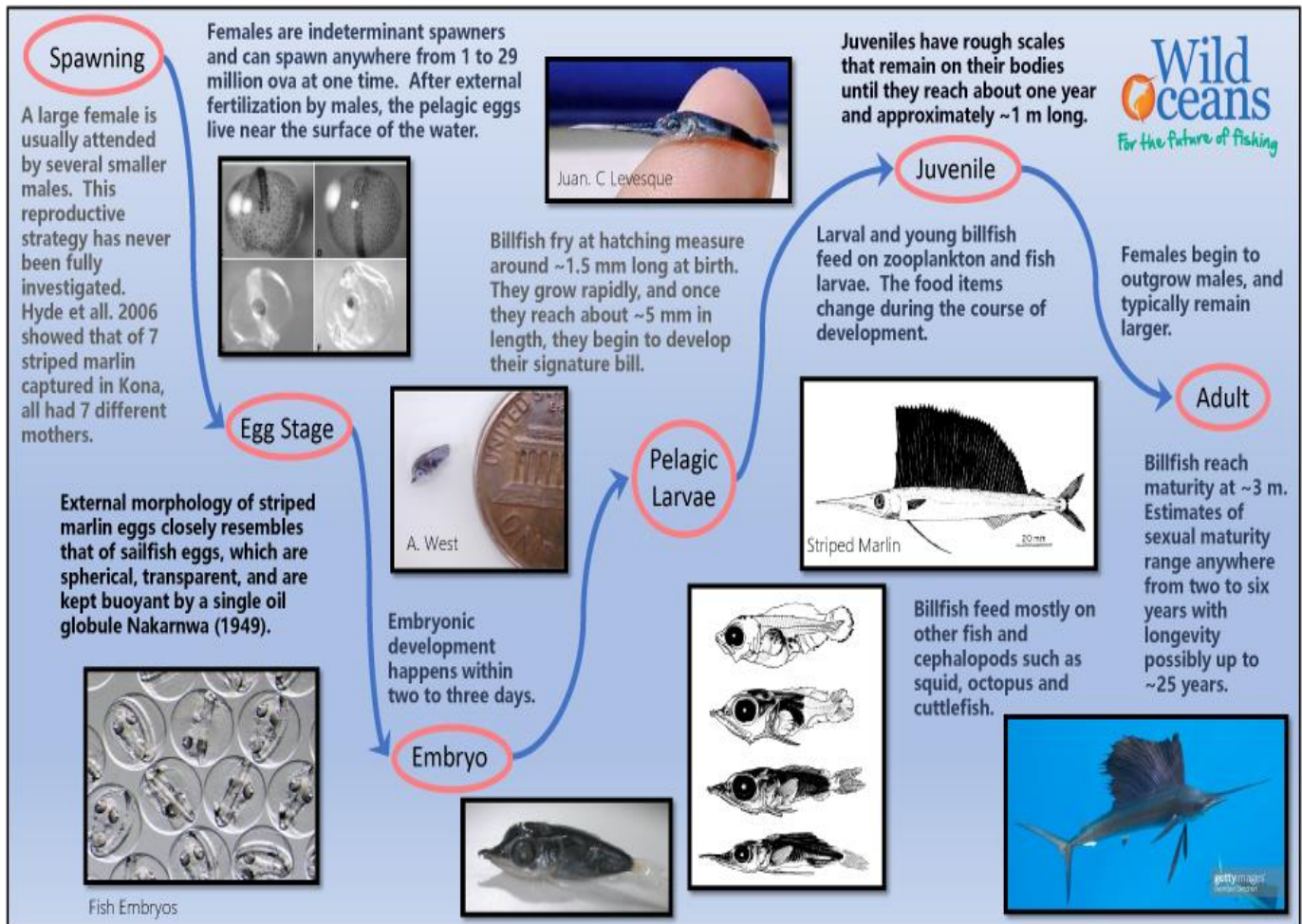


Standard Length at capture (mm)



Phase 2 of the *Wild Oceans Kona Project* will be informed by information provided from Phase 1. Specifically, based on the meta-data compiled from the literature review, Phase 1 will provide information on likely dispersal routes and connectivity of larval *istiophorids* (billfish) from known and unknown spawning locations or origins. Phase 1 will also examine features and attributes common across known *istiophorid* spawning areas (e.g., shallow seamounts, atolls, lee sides of volcanic islands, areas adjacent to eddy fields/convergence) and compare this information to the areas identified as putative spawning locations to define key attributes of the spawning habitat. It is possible that some of the spawning habitat may need protection but identifying suitable habitat is fundamental.

Phase 2 can be used to independently verify results and conclusions from Phase 1 and perhaps identify other suitable spawning habitat using ensemble models. Project personnel have been in discussions with several individuals and groups capable of performing this type of oceanographic modelling but spatial resolution could be an issue in some areas. From a cost: benefit perspective, a pilot study is being discussed before a full-scale modelling exercise is initiated. The next couple months will be devoted to data analysis and manuscript preparation. The culmination of Phase 1 will be a peer-reviewed submission detailing the study and the possibility of re-discovering new spawning sites in the Pacific.



Management:

We met with colleagues from IGFA, Monterey Bay Aquarium and Ocean Foundation to discuss the 2022 North Pacific striped marlin stock modeling presented to the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC). We identified concerns with the choice of a new growth curve.

We attended the ISC from July 12-18 where international scientists also identified a significant issue with the choice of growth curve in the striped marlin stock assessment that affects the perception of stock status. The ISC agreed that the best available science shows evidence of substantial depletion of spawning potential and they continue to recommend a catch reduction of 60%, to 1,359 tons in order to rebuild the stock.

We participated in the 18th Regular Session of the Scientific Committee (SC) for the Western and Central Pacific Fisheries Commission from August 10-18. Scientists concurred with the advice of the ISC. The SC also identified a need for additional work to identify and recommend appropriate limit reference points for striped marlin and other billfish in the Western Pacific.

We met with the National Marine Fisheries Service (NMFS) to discuss progress and a timeline for a proposed rule to establish catch limits for striped marlin in the Western Pacific. The catch limits would apply to US longline vessels. The Western Pacific Fishery Management Council made a recommendation to NMFS in early 2021, but NMFS has not yet published the implementing regulations.