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EDITORIAL

A comprehensive view of the early life of the great barracuda: editorial comment on the feature article by D'Alessandro et al.

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Most organisms that live in close association with coral reefs as juveniles and adults have complex early life histories with larvae often spending days to weeks in the open ocean before they metamorphose into juveniles and undergo settlement back to reefs (Cowen and Sponaugle 2009). For fishes on coral reefs and in other habitats, the pelagic larval period is a critical phase in the life cycle during which instantaneous rates of individual growth (G: $\sim$0.05–0.35 d^{-1}) and population-level mortality (M: $\sim$0.1–0.5 d^{-1}) are at their highest levels (see Houde 1989). During the larval period, G and M are negatively correlated and subtle changes in the former can lead to large changes in the latter. Moreover, although M rapidly declines with increasing body size, the rate of decline can be influenced by the spatial distribution (patchiness) of fish larvae (McGurk 1986). Hence, understanding the vital rates and spatial distribution of early life stages is paramount to understanding processes impacting the population dynamics (year class success) of key players within upper levels of marine food webs (Houde 2008).

In their new article, D'Alessandro et al. (2011) provide a unique view of the ecology of early life stages of sphyraenids (great barracuda and the closely related sennets), important apex predators on reefs and in nearshore habitats in most tropical seas (Fig. 1). Their study was part of a larger, 2-year field sampling program examining monthly changes in the abundance, distribution, and diets of ichthyoplankton along a transect spanning the Gulf Stream in the Straits of Florida (Western Atlantic) (Richardson et al. 2010; Sponaugle et al. 2010). What makes the present study stand apart from many others dealing with ichthyoplankton ecology is the broad scope of information that it provides including seasonal changes in horizontal and vertical distribution, ontogenetic changes in diets, and rates of growth and mortality of larvae. Their results highlight (1) a seasonal switch in abundance between great barracuda and sennets, in agreement with adult ecology, (2) the potential importance of diet (e.g., switching to piscivory) for growth in both groups, and (3) the potential importance

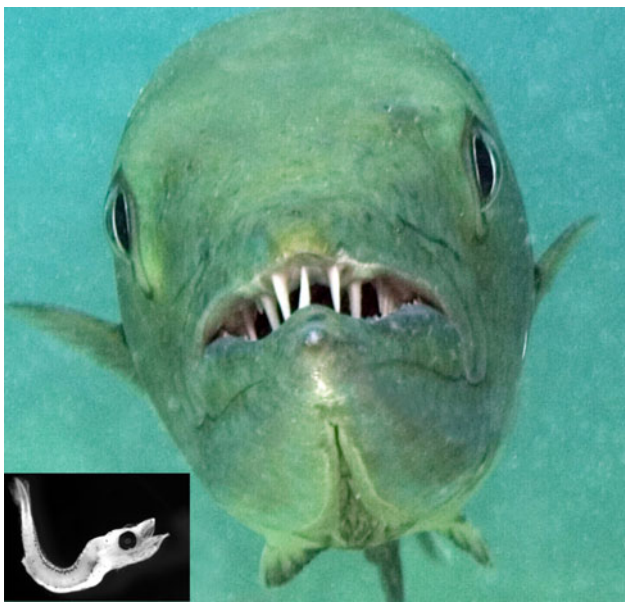

Fig. 1 A "*comprehensive view*" of an adult great barracuda (*Sphyraena barracuda*) and of a very young, $\sim$4-mm larva of this species (*Insert*). (Photographs by Evan D'Alessandro)

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of rapid growth (and large size at hatching) for the survival of great barracuda larvae.

Studies such as D'Alessandro et al. in this issue give us comprehensive views of the early-life-stage dynamics of marine fish species and shed light on the potential factors affecting growth and survival during this critical period. Moreover, such studies provide invaluable knowledge required for the better stewardship of marine fish stocks, 85% of which are currently fully or over-exploited (FAO 2010).

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