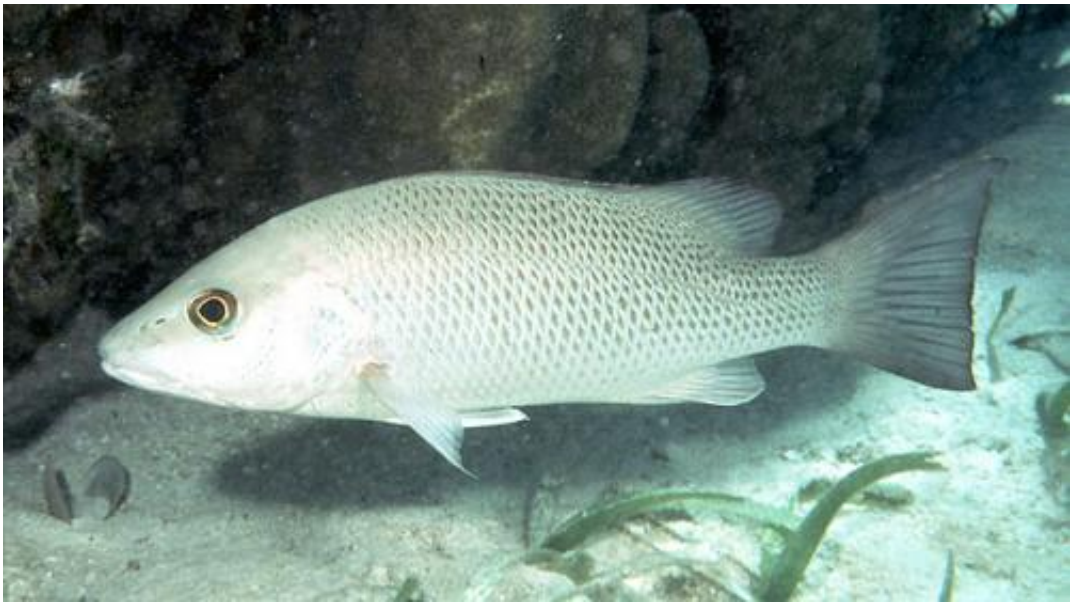
Researchers find first instance of fish larvae making sounds

October 1 2014, by Bob Yirka



Lutjanus griseus. Credit: Randall, J.E/fishbase.org

(Phys.org) —A trio of researchers with the University of Miami has recorded sounds made by fish larvae in both the open ocean and in their lab. In their paper published in the journal *Biology Letters*, Erica Staaterman, Claire Paris and Andrew Kough describe how they captured the larvae sounds and offer ideas on why they are made.

Scientists know that adult fish make noise, many fishermen have heard them, also, some have been found to actually "yell" louder to be heard

when surrounded by other noise, such as from a boat engine. But, as the research trio point out, few studies have been conducted to learn about the possibly of noise made by young fish or even fish larvae. In their study, they looked at gray snappers (*Lutjanus griseus*) that live off the coast of Florida.

Adult female gray snappers drop their eggs in the open ocean into beds of seagrass—larvae that emerge live off food in the seagrass bed until reaching maturity. To find out if the larvae make noise, the researches put a camera, microphone and lights into a waterproof clear box and dropped it into the sea at night—the lights helped find where the snappers congregated. To make sure the noises they were recording were coming from the larvae, the researchers captured several larvae samples and took them back to their lab where they were recorded in a tank of water. Analysis of the recordings showed the larvae made two kinds of sounds: "knocking" and "growling." Interestingly, the knocking sound was very similar to the knocking sounds made by adults of the same species. They noted also that the pattern of sounds generated by the larva differed depending on if they were in the open ocean or in the lab tank—in the lab, the larvae produced more sounds per interval and had longer times between them, suggesting perhaps that they were waiting to hear a reply.

The researchers can't say for sure why the larva make noise but suggest it might help the snappers as a whole maintain group cohesion at night when it's more difficult to see. They suggest the growling sound may be similar to the cries that babies of many species make to get the attention of the adults.

More information: First evidence of fish larvae producing sounds, *Biol. Lett.* October 2014 vol. 10 no. 10 20140643. Published 1 October 2014 DOI: 10.1098/rsbl.2014.0643

Abstract

The acoustic ecology of marine fishes has traditionally focused on adults, while overlooking the early life-history stages. Here, we document the first acoustic recordings of pre-settlement stage grey snapper larvae (Lutjanus griseus). Through a combination of in situ and unprovoked laboratory recordings, we found that L. griseus larvae are acoustically active during the night, producing 'knock' and 'growl' sounds that are spectrally and temporally similar to those of adults. While the exact function and physiological mechanisms of sound production in fish larvae are unknown, we suggest that these sounds may enable snapper larvae to maintain group cohesion at night when visual cues are reduced.