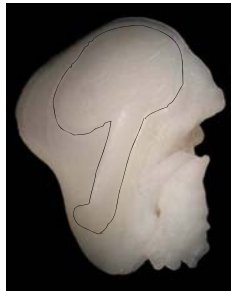
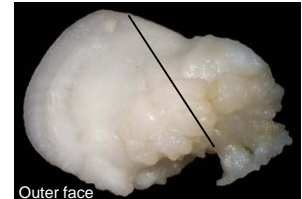
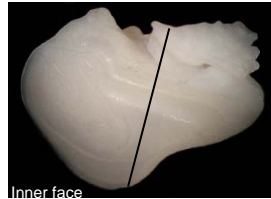


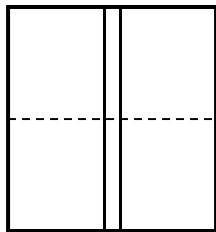
Atlantic Croaker Otolith Cutting and Reading Protocol



1. Determine which otolith is the right otolith by looking at the succal groove on the inner face. The tail of the groove of will curl to the left when the head is anterior (and to the right on the left otolith).



2. Mark nucleus with a pencil by finding the area that protrudes the most from the outer face and draw a line through this area, around to the inner face of the otolith. You want the line to be perpendicular to the succal groove.



Example of an otolith cutting sheet, with correct orientation. Place otolith on sheet so that the line you drew through the nucleus is through the center of the two middle lines.

3. Mount otolith on an otolith cutting sheet with either face down on the paper (personal preference) and the line you have drawn through the nucleus in the middle of the cutting sheet (between double lines).

4. Cut using 4" Buehler Diamond Wafering Blades. Take a thin section through the center of the otolith. Mount this section on a microscope slide using crystal bond and cover section with crystal bond. Croaker are fairly easy to cut, the section should be thin enough to allow light to pass easily and annuli to be seen clearly.



5. Otoliths are read by counting each annulus, or dark ring. In croaker, the first ring is often hard to see as it is close to the nucleus. Atlantic Croaker spawn in the late summer and early fall, while their annuli deposition occurs early spring into late spring. This slight difference means the annuli will appear before the fish is biologically that corresponding age. (See chart below, number of rings occurs before biological age match)

6. All otoliths should be read by 3 independent readers. The mode of the 3 reader is evaluated by a senior reader to establish the final age assignment.

Age 8 otolith (left), 8th annulus on edge

Average Biological Birthdate Atlantic Coast

