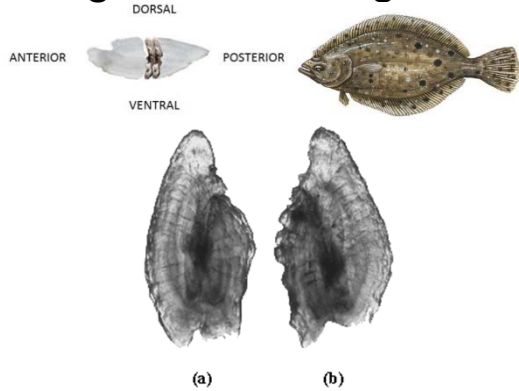
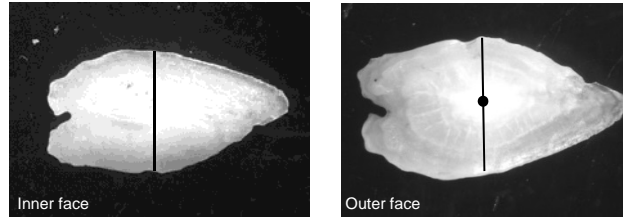


Summer Flounder Otolith Cutting and Reading Protocol

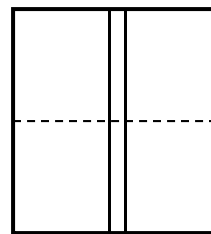


1. Determine which otolith is the top otolith by looking at both otoliths under a scope with transmitted light. The nucleus of the top otolith (a) will be more centered than the bottom (b). You can also look at the direction of the notch.



2. Mark nucleus with a pencil and follow the line around to the inner face.

3. Mount otolith on an otolith cutting sheet with the succal groove facing down and the nucleus facing you. Completely cover otolith with crystal Bond to assure the transverse section stays completely intact after sectioning



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

4. Cut using 3" Buehler Diamond Wafering Blades. Take a thick section through the center of the otolith. Cut the section so that the nucleus is at one side of the section (ie. Do not put nucleus in center of section).

Mount this section (nucleus side down) on a microscope slide using a thin layer of crystal bond. Wet sand the section using 400 to 1200 grit sand paper to an appropriate thickness so that the annuli can be easily read. Once the section is sanded, it can then be covered with a layer of crystal bond. Flounder can be very fragile and hard to cut.



Age 7 otolith (above)

5. Otoliths are read by counting each annulus, or dark ring. Spawning and annuli deposition occur at two different times of the year making summer flounder potential difficult to age. Spawning occurs in the fall months before an offshore migration. Whereas the annuli deposition occurs a few months later at the start of the migration back to near shore waters. Typically otoliths caught in the spring will have an annuli forming on the edge.

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.

