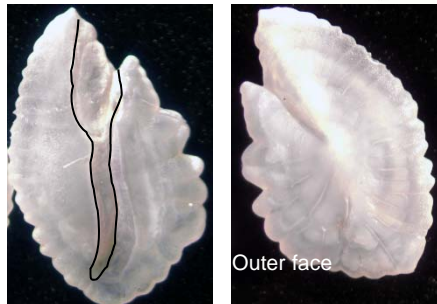


Butterfish Otolith Cutting and Reading Protocol



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

2. Butterfish are read whole but need to be cleaned before mounting. Place the otolith in a small watch glass of water under a microscope. You can use a variety of tools such as forceps, old toothbrush, pointers, etc to try and scrape or brush any debris on the otolith off. This can be a frustrating process and the otoliths are fragile so be careful not to break them.

3. Butterfish otoliths can be very difficult to age. Since butterfish can be so difficult, there may be individuals that you are unable to age. The otoliths are read by counting each translucent or hyaline band. Otoliths are read immersed in ethanol against a black background with reflected light.

4. Counting the opaque bands on whole Butterfish otoliths is the equivalent of counting the dark annuli on a transverse section of an otolith. Each full opaque band encompassing the whole otolith is an individual annulus. The opaque bands are white and the hyaline bands are clear or translucent. The annuli are best read on the pointed rostrum on the otolith. If the rostrum is broken the rounded end on the postrostrum also displays a clear region to count annuli.



5. Annuli deposition occurs midyear on Butterfish between May and August. Most Butterfish caught in the Mid-Atlantic in the late spring and summer months will have an opaque band on the edge of the otolith.

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 2 Butterfish (above)

