

Preparing baked thick sections of Pacific halibut otoliths

Chris Johnston

International Pacific Halibut Commission, Seattle, WA

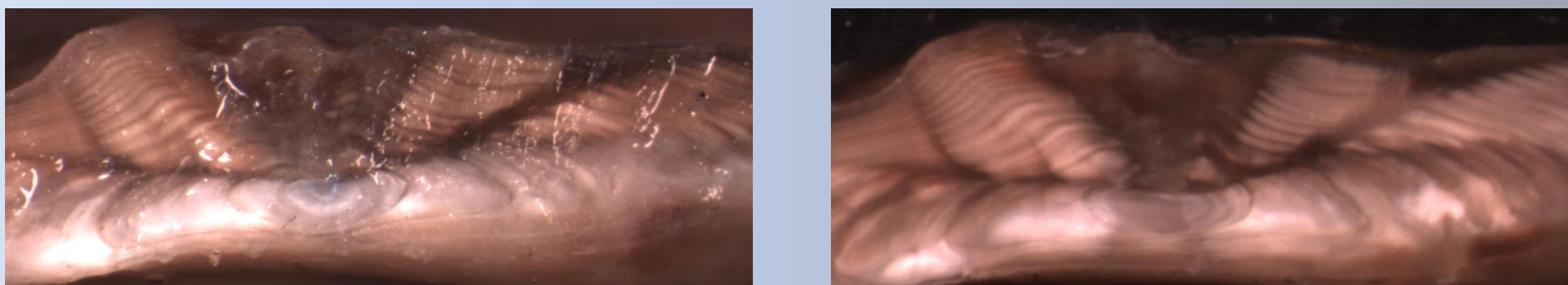
Halibut otoliths from several different collection years were selected for an increment study. Measurements were made on baked transverse sections of blind-side sagittal otoliths. Some otoliths had already been aged by break-and-bake technique, others had only been surface-aged. Steps used for preparing previously-baked sections as well as whole otoliths for photographing and measuring are outlined below.

1. The posterior end of the otolith was the preferred end to bake since it leaves the anterior end for surface reading.
2. Previously-baked otolith halves were cut about 1.5 to 2 mm below the reading surface and mounted with Loctite UV glue onto individual glass slides, reading surface facing up, and allowed to cure under UV light for 12 hours. Reading surface was then polished using a Buehler MetaServ™ 250 polisher-grinder with 1200- then 2500-grit wet/dry sanding discs.
3. Whole otoliths were cut transversely either side of the 1st year with a Buehler IsoMet™ low-speed saw. The center sections were baked in a toaster oven for 10 minutes at 500° F. The baked sections were then mounted anterior end up on individual glass slides using Loctite UV glue and allowed to cure for 12 hours. The sections were then polished down to expose the nucleus using the polishing procedure described above. Polishing progress was monitored using a stereomicroscope.



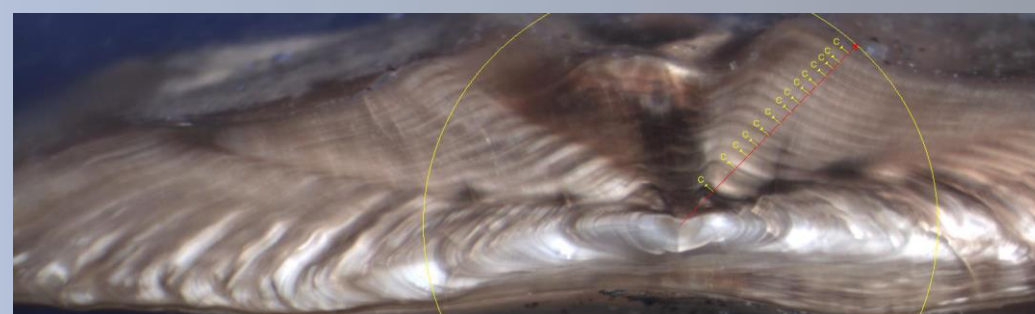
Steps in preparing baked sections

4. Polished sections were submerged in water (to eliminate glare) for photographing.



Submerging sections in water prior to photographing (above right) eliminates glare spots

5. Increments were measured using Image Pro Premier® software.



Annuli:	Distance (mm):	Space (mm):
1	0.295	0.295
2	0.501	0.205
3	0.611	0.11
4	0.702	0.091
5	0.8	0.098
6	0.906	0.106
7	1.006	0.1
8	1.083	0.077
9	1.173	0.09
10	1.245	0.073
11	1.326	0.081
12	1.396	0.069
13	1.451	0.055
14	1.532	0.081