Gonadal abnormalities in walleye pollock

*Theragra chalcogramma* (Gadus chalcogrammus)

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General view of walleye pollock normal ovaries and testes
Scale bar: 3 cm

Fish photo by A. Orlov
**Intersexuality** is the presence of both male and female reproductive tissue in the same gonad.

**Gonochorism** is the state of having just one of at least two distinct sexes in any one individual organism.
Developing ovatestes (A-D)

Spawning capable ovatestes (E-H)

Scale bars: 100 μm (A-C, E-G), 50 μm (D, H)

central part of ovaries

oocyte resorption area near testicular and ovarian tissue junctions

testes and ovaries junctions

central part of testes
Filiform gonads

General view
Scale bars: 1 cm
Filiform gonads

1 – resorbing oocytes,
2 – previtellogenic oocytes,
3 – spermatogonia,
4 – connective tissue,
5 – post-ovulatory follicles.

Scale bars: 100 μm
Atresia of oocytes at different stages of maturity in *T. chalcogramma*: A – early resorption of previtellogenic oocytes; B – early phase of vacuolization oocytes resorption; C – atretic vitellogenic oocyte; D – “tree-like structures of resorption”; E, F – resorption of vitellogenic oocyte. Scale bars: 100 μm (B-F), 50 μm (A)

Number of females with atresia

<table>
<thead>
<tr>
<th>Area</th>
<th>Partial atresia (%)</th>
<th>Total atresia (%)</th>
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</thead>
<tbody>
<tr>
<td>Bering Sea</td>
<td>23,4-61,9</td>
<td>0,9-11,1</td>
</tr>
<tr>
<td>Okhotsk Sea</td>
<td>43,4-58,2</td>
<td>0,2-14,6</td>
</tr>
<tr>
<td>The Peter the Great Gulf</td>
<td>29,0-33,8</td>
<td>4,6-12,6</td>
</tr>
<tr>
<td>Avacha Bay</td>
<td>2-2,4</td>
<td></td>
</tr>
<tr>
<td>the Gulf of Alaska</td>
<td></td>
<td>0,8</td>
</tr>
</tbody>
</table>

Total atresia of ovary and testes (fishes collected in Bering Sea in August)
Total atresia

“tree-like structures of resorption”

Total atresia of ovary and testes (fishes collected in Bering Sea in August)
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