POLLOCK FISHERY AND TOTAL ALLOWABLE CATCH IN THE BERING SEA

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WALLEYE POLLOCK CATCH IN THE BERING SEA, 1000 MT

WESTERN
ALEUTIANS

NAVARI N
DONUTHOLE

NORTH EASTERN
SOUTH EASTERN
BOGOSLOF
FISHERY MANAGEMENT SYSTEM

- EASTERN BERING SEA/ALEUTIAN ISLANDS: “MAGNUSSON FISHERY CONSERVATION AND MANAGEMENT ACT” - TAC - “A”+”B” FISHERY SEASONS (US EEZ)
- DONUTHOLE AREA: “CONVENTION ON THE CONSERVATION AND MANAGEMENT OF POLLOCK RESOURCES IN THE CENTRAL BERING SEA” - MORATORIUM (enacted in 1993) (INTERNATIONAL ZONE)
- NORTHERN BERING SEA: “FISHERY RULES” - TAC - 4 SEASONS (RUSSIAN EEZ)
- WESTERN BERING SEA: “FISHERY RULES” - TAC - MORATORIUM (enacted in 2001) (RUSSIAN EEZ)
TOTAL ALLOWABLE CATCH (TAC)

TAC = FB × ER

FB – FISHABLE BIOMASS (3+ age)

ER – EXPLOITATION RATE
STOCK ASSESSMENT METHODS

EASTERN BERING SEA: (US RESEARCH)
BOTTOM TRAWL SURVEYS (SINCE 1975), ECHO-INTEGRATION TRAWL SURVEYS (SINCE 1979), ANALYTIC APPROACH (SINCE 1964)

DONUTHOLE AREA: (INTERNATIONAL RESEARCH)
ECHO-INTEGRATION TRAWL SURVEYS (SINCE 1978), MIDWATER TRAWL SURVEYS (SINCE 1979) ANALYTIC APPROACH (SINCE 1979)

NORTHERN BERING SEA: (RUSSIAN RESEARCH)

WESTERN BERING SEA: (RUSSIAN RESEARCH)
ECHO-INTEGRATION TRAWL SURVEYS (SINCE 1986), BOTTOM TRAWL SURVEYS (SINCE 1970), MIDWATER TRAWL SURVEYS (SINCE 1974) ANALYTIC APPROACH (SINCE 1970),
## BERING SEA POLLOCK STOCK STRUCTURE

<table>
<thead>
<tr>
<th>Sources</th>
<th>Region</th>
<th>Structure</th>
<th>Major stocks</th>
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<tbody>
<tr>
<td>Grant et al., 2003</td>
<td>Bering Sea</td>
<td>2 stocks</td>
<td>Eastern and western</td>
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<tr>
<td>Ianelli et al.,</td>
<td>US EEZ</td>
<td>3 stocks</td>
<td>Eastern shelf, Aleutians, Bogoslof -</td>
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<td>2003</td>
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<td>Donuthole</td>
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<td>Datskyi, 2000</td>
<td>Northern Bering</td>
<td>4 stocks</td>
<td>Anadyr Gulf, Navarin, Eastern, Dezhnyov</td>
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<td>Sea</td>
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<td>Balykin, 1996</td>
<td>Western Bering</td>
<td>1 stock</td>
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<td>Sea</td>
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SPAWNING UNITS OF ALASKA POLLLOCK

- **UNIMAK**
- **PRIBYLOF**
- **KOMMANDER**

### Winter Spawning
- **BERING SEA POLLOCK**
  - **WINTER SPawning**
    - **BOGOSLOF***
    - **SOUTH PRIBYLOF**
    - **CENTRAL ALEUTIAN**
    - **NAVARIN**

### Spring Spawning
- **BERING SEA POLLOCK**
  - **SPRINGR SPAWNING**
    - **BRISTOL***
    - **EAST PRIBYLOF**
    - **WEST PRIBYLOF**
    - **MATTHEW***
    - **ALEUTIAN***
    - **SOUTH NAVARIN***
    - **ANADYR***
    - **NAVARIN***
    - **KOMMANDER**
    - **OZERNOF***
    - **OLYTORKO-KARAGIN**
THE MAIN SPAWNING GROUNDS OF ALASKA POLLOCK IN THE BERING SEA IN 1980’S (GENERALIZED)
I – UNIMAK, II-PRIBYLOF, III-ST.MATTHEW, IY-OLYUTORSKI-NAVARINSKIY, Y-WESTERN
BIOMASS OF POLLOCK IN THE EASTERN BERING SEA, 100 000 MT

WESPESTAD, TRAYNOR, 1988
IANELLI ET AL., 2003

BOTTOM BIOMASS
POLLOCK BIOMASS AND CATCH IN THE WESTERN BERING SEA, 1000 MT

BALYKIN, 2003
POLLOCK BIOMASS ESTIMATED BY ECHO-INTEGRATION-TRAWL SURVEYS IN THE BOGOSLOF AREA AND CATCH IN DONUTHOLE AND BOGOSLOF AREA, 1000 MT
# Exploitation Rate of Walleye Pollock in the Bering Sea

<table>
<thead>
<tr>
<th>Region</th>
<th>Types of Stock Dynamics</th>
<th>Management Strategy</th>
<th>Stock Level</th>
<th>Exploitation Rate, %</th>
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<tbody>
<tr>
<td>Eastern Bering Sea</td>
<td>Sustainable Without Depression</td>
<td>Traditional Approach</td>
<td>High</td>
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<td>Extremely Low</td>
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<tr>
<td>Western Bering Sea</td>
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<td>Extremely Low</td>
<td>Moratorium</td>
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CONCLUSIONS

• NEED TO IMPROVE THE METHODS OF STOCK ASSESSMENT

• NEED TO TAKE INTO ACCOUNT THE TYPE OF STOCK DYNAMICS UNDER SELECTION OF FISHERY MANAGEMENT TYPE

• IN THE EASTERN BERING SEA FISHERY MANAGEMENT SHOULD BE BASED ON TRADITIONAL APPROACH, IN THE WESTERN BERING SEA – ON PRECAUTIONARY APPROACH

• FISHERY MANAGEMENT SHOULD CONSIDER NOT ONLY THE STATISTICAL REGIONS, BUT ALSO THE NUMBER OF THE SPAWNING STOCK UNITS
THANK YOU

FOR YOUR ATTENTION