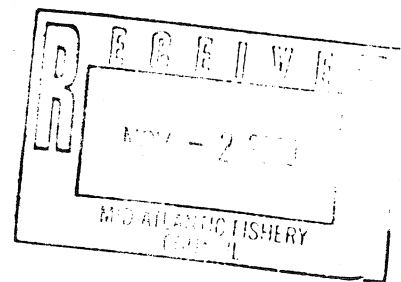


**APPENDIX 2**

**OCEAN QUAHOG  
SAW and SARC**





*A Report of the 31st Northeast Regional Stock Assessment Workshop*

# **31st Northeast Regional Stock Assessment Workshop (31st SAW)**

*Public Review Workshop*

**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Northeast Region  
Northeast Fisheries Science Center  
Woods Hole, Massachusetts**

**October 2000**

## C. OCEAN QUAHOG ADVISORY REPORT

**State of Stock:** The ocean quahog resource in EEZ waters from Southern New England (SNE) to Southern Virginia (SVA) is not overfished and overfishing is not occurring. The current biomass is high (Figures C1-C3) with current catches near MSY. Annual recruitment is approximately 1-2% of stock biomass and lower or roughly equal to the rate of natural mortality. Since the fishery began in the late 1970s, biomass has declined slowly from virgin levels. At current catch levels biomass is projected to decline gradually over the next decade. The percentage of virgin biomass in the assessed area remaining in 1997-1999 is 88% (all regions) and 82% (all regions less Georges Bank). The stock off the coast of Maine continues to be harvested, but the condition of the resource there is unknown. The status of the stock relative to Biological reference points is shown in Figure C7.

**Management Advice:** Current fishing mortality is near  $F_{\text{target}}$  for the resource taken as a whole. However, it may be advantageous to avoid localized depletion.

### Projections (weights in mt of meats):

	SVA <sup>1</sup>	DMV	NJ	LI	SNE	GBK	EEZ
Estimated Biomass in 1999 (000 mt meats) <sup>2</sup>	0.079	60	260	530	330	620	1.800
CV <sup>3</sup>	10%	18%	24%	17%	13%	37%	14%
Projected Recruitment (000 mt meats) <sup>2,4</sup>	0.0035	1.5	3.9	6.5	4.1	6.8	23
Projected Catch (000 mt meats) <sup>5</sup>	0.0	1.2	3.3	6.0	7.3	0.0	18
Projected Biomass in 2002 (000 mt meats) <sup>2</sup>	0.089	62	250	512	310	620	1.760
% Change	12%	0%	-1%	-3%	-6%	0%	-2%

<sup>1</sup>Estimates for SVA not reliable. <sup>2</sup>From KLAMZ delay-difference biomass dynamics model for quahog 70+ mm shell length.

<sup>3</sup>Bootstrap, 500 iterations. <sup>4</sup>Constant over time. <sup>5</sup>Mean 1997-1999.

Catch and Status Table (weights in '000 mt meats): Ocean quahogs

	1991	1992	1993	1994	1995	1996	1997	1998	1999	Max <sup>1</sup>	Min <sup>1</sup>	Mean <sup>1</sup>
<b>Landings</b>												
SVA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	< 0.1
DMV	5	2	2	1	1	1	1	1	1	12	1	4
NJ	15	7	10	7	5	5	4	3	3	16	3	8
LI	2	12	9	12	9	6	5	7	6	12	0	3
SNE	1	1	1	1	5	8	9	6	7	9	0	2
GBK	0	0	0	0	0	0	0	0	0	0	0	0
EEZ	22	22	22	21	21	20	19	17	17	22	8	18
<b>Biomass<sup>2</sup></b>												
SVA <sup>3</sup>	0.054	0.057	0.060	0.063	0.066	0.070	0.073	0.076	0.079	0.320	0.054	0.152
DMV	70	60	60	60	60	60	60	60	60	130	60	90
NJ	290	280	270	270	260	260	260	260	260	360	260	310
LI	590	590	570	560	550	540	540	530	530	590	530	580
SNE	360	360	360	360	360	360	350	340	330	370	330	360
GBK	620	620	620	620	620	620	620	620	620	620	620	620
EEZ	1,900	1,900	1,900	1,900	1,900	1,800	1,800	1,800	1,800	2,100	1,800	2,000
<b>Fishing Mortality Rate (F y<sup>-1</sup>)<sup>2</sup></b>												
SVA <sup>3</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.09
DMV	0.08	0.04	0.03	0.02	0.01	0.01	0.02	0.02	0.02	0.15	0.01	0.05
NJ	0.05	0.03	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.05	0.01	0.03
LI	0.00	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.00	0.01
SNE	0.00	0.00	0.00	0.00	0.02	0.02	0.03	0.02	0.02	0.03	0.00	0.01
GBK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EEZ	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01

<sup>1</sup>1978-1999. <sup>2</sup>From KLAMZ delay-difference biomass dynamics model for quahog 70+ mm shell length.

<sup>3</sup>Estimates for SVA not reliable.

**Stock Distribution and Identification:** Ocean quahogs are distributed on both sides of the North Atlantic. They occur from Norway to Spain, intermittently across the North Atlantic and down the North American coast to Cape Hatteras. Commercial concentrations occur on the continental shelf, off the coast of Maine and between Georges Bank and the Delmarva Peninsula, to at least 90 m (Figure C4). The assessment and management regime assumes a unit stock.

**Catches:** EEZ landings generally account for about 95-100% of total US landings. Annual EEZ quotas have been set since 1978. EEZ landings increased from 0 in 1975 to 14 thousand mt (meats) in 1979, and peaked at 23 thousand mt in 1992 (Figure C3). The spatial distribution of fishing grounds has changed markedly over last two decades (Figures C3, C4) in response to a variety of factors including reductions in local catch rates and relocations of processing plants. The fishery was concentrated off Delmarva and Southern New Jersey from the 1970s to mid-1980s. During the late 1980s and early 1990s, the fishery expanded northward into the Northern New Jersey region, and then to the Long Island region. In 1995, it expanded to the Southern New England region. In 1999, 76% of the catches were from the Long Island and S. New England regions. Total annual landings off the coast of Maine ranged from 200-400 mt during 1995-1999