

75-08

RECOVERY TIME OF FISH STOCKS IN ICNAF SUBAREA 5
AND STATISTICAL AREA 6 TO THE MSY BIOMASS LEVEL

by

E. D. Anderson

National Marine Fisheries Service
Northeast Fisheries Center
Woods Hole, Massachusetts 02543

Laboratory Reference No. 75-8
November 13, 1975

The following table presents an estimated time schedule for the recovery of the presently-regulated stocks in SA 5-6 to the MSY biomass level given that a second tier overall quota of 650,000 tons is maintained for a seven-year period starting in 1976, which is the time estimated as necessary for the recovery of the finfish (less menhaden, billfishes, tunas, and large sharks) and squid biomass to the MSY level. The recovery time specified for each stock must be considered strictly as a qualitative judgment and is not (nor can it be!) the product of extensive and detailed analyses. There are too many variables. For many of the stocks there is not a good estimate of the MSY biomass. Since the overall TAC is 650,000 tons and the sum of the species' TACs is 816,000 tons, each individual TAC cannot be taken if the overall TAC is adhered to. Presumably, the TACs for the most desired species will be taken whereas those for the lesser desired species will not be achieved. However, the desires may change somewhat from year to year. Therefore, the actual catch from each stock would not be expected to remain constant over the given period of time (i.e. 7 years) given a constant overall TAC during that time.

Species	Stock area	1976 TAC 000 tons	Years to recovery in- cluding 1976	Comments
Cod	5 Y	8	5	No assessment available, but F appears to presently exceed F_{max} .
	5 Z	35	0	Stock appears to be at MSY level through 1974 but re-assessment may indicate a decline.
Haddock	5	6	>7	Stock depressed; poor recruitment, catch should be zero. Large inadvertent by-catch.
Redfish	5	17	4-5	Present biomass near MSY level, but may be lower. Slow-growing species requires long time for even slight increase in biomass.
S. hake	5 Y	10	5	Biomass and catch below MSY level. Fast-recovering stock, however. Variable recruitment.
	5 Ze	50	3-4	MSY level currently not known. Present F twice F_{max} . Stock can recover rapidly. 1976 TAC will start recovery.
	5 Zw+6	43	4-5	MSY level not known. F exceeds F_{max} . 1976 TAC will only maintain biomass, but should increase in following years.
R. hake	5 Ze	26	3	MSY level not known. Weak assessment. Strong recruitment forthcoming.

Species	Stock area	1976 TAC 000 tons	Years to recovery in- cluding 1976	Comments
R. hake	5 Zw+6	16	4-5	MSY catch level should be 40,000 tons. Stock currently down, but should recover quickly given good recruitment.
Pollock	4 VWX +5	55(18)	0	Stock appears to be stable. Expected catch of 18,000 tons in SA 5.
Yellow-tail	5 (E 69 ⁰)	16	>7	Stock now 60% of MSY level and going down. Will continue to decline under present TAC level.
	5(W 69 ⁰) +6	4	>7	Stock seriously depressed. Catch should be zero. Recovery chances poor until recruitment improves.
Flounders, All species except yellow- tail	5+6	20	7	MSY biomasses not known. Stocks have declined in recent years. High by-catch in other fisheries.
Herring	5 Y	9	>7	No improvement in biomass assuming constant low recruitment. Stronger year-class would initiate recovery.
	5 Z+6	60	>7	Seriously depressed stock. Given present recruitment levels, biomass will increase only 20% in 6 years. Stronger year-classes would result in faster recovery.
Mackerel	5+6	254	4-5	TAC at MSY effort level should be ca 100,000 tons in 1976. Biomass at beginning of 1975 estimated only 1/3 of MSY level. Strong year-classes would result in quick recovery, providing TAC is lower.
Other finfish (+ 20 species)	5+6	150	5-6	MSY biomass not known. Stocks have declined. High by-catch.

Species	Stock area	1976 TAC 000 tons	Years to recovery in- cluding 1976	Comments
Squid- <i>Illex</i>	5+6	30	0	Biomass estimates difficult to obtain and imprecise. Stock condition not known precisely, but assumed stable.
Squid- <i>Loligo</i>	5+6	44	0	Biomass believed to be stable.
All fin- fish & squids	5+6	650	7	