

TABLE 1: AVAILABLE DATA

COMMON NAME:	HADDOCK	SPECIES:	<i>Melanogrammus aeglefinus</i>
AREA:	NORTHWEST ATLANTIC	STOCK:	GEORGES BANK (NAFO DIV. 5Z+SUBAREA 6)
CREATED BY:	LORETTA O'BRIEN 2000-7-13	UPDATED BY:	

Data status									
Year	Stock size	Stock composition	Age	Sex ratio	Maturity	Fecundity	Weight	Condition	Additional data
2001	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
2000	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1999	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1998	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1997	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1996	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1995	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1994	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1993	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1992	✓	✓	✓	(✓)	✓		✓	(✓)	(✓)
1991	✓	✓	✓	(✓)	✓		✓		(✓)
1990	✓	✓	✓	(✓)	✓		✓		(✓)
1989	✓	✓	✓	(✓)	✓		✓		(✓)
1988	✓	✓	✓	(✓)	✓		✓		(✓)
1987	✓	✓	✓	(✓)	✓		✓		(✓)
1986	✓	✓	✓	(✓)	✓		✓		(✓)
1985	✓	✓	✓	(✓)	✓		✓		(✓)
1984	✓	✓	✓	(✓)	✓		✓		(✓)
1983	✓	✓	✓	(✓)	✓		✓		(✓)
1982	✓	✓	✓	(✓)	✓		✓		(✓)
1981	✓	✓	✓	(✓)	✓		✓		(✓)
1980	✓	✓	✓	(✓)	✓		✓		(✓)
1979	✓	✓	✓	(✓)	✓		✓		(✓)
1978	✓	✓	✓	(✓)	✓		✓		(✓)
1977	✓	✓	✓	(✓)	✓		✓		(✓)
1976	✓	✓	✓	(✓)	✓		✓		(✓)
1975	✓	✓	✓	(✓)	✓		✓		(✓)

Data status									
Year	Stock size	Stock composition	Age	Sex ratio	Maturity	Fecundity	Weight	Condition	Additional data
1974	√	√	√	(√)	√		√		(√)
1973	√	√	√	(√)	√		√		(√)
1972	√	√	√	(√)	√		√		(√)
1971	√	√	√	(√)	√		√		(√)
1970	√	√	√	(√)	√		√		(√)
1969	√	√	√	(√)	√		√		(√)
1968	√	√	√	(√)	√		√		(√)
1967	√	√	√	(√)	√		√		(√)
1966	√	√	√	(√)	√		√		(√)
1965	√	√	√	(√)	√		√		(√)
1964	√	√	√	(√)	√		√		(√)
1963	√	√	√	(√)	√		√		(√)
1962	√	√	√				√		(√)
1961	√	√	√				√		(√)
1960	√	√	√				√		(√)
1959	√	√	√				√		(√)
1958	√	√	√				√		(√)
1957	√	√	√				√		(√)
1956	√	√	√				√		(√)
1955	√	√	√				√		(√)
1954	√	√	√				√		(√)
1953	√	√	√				√		(√)
1952	√	√	√				√		(√)
1951	√	√	√				√		(√)
1950	√	√	√				√		(√)
1949	√	√	√				√		(√)
1948	√	√	√				√		(√)
1947	√	√	√				√		(√)
1946	√	√	√				√		(√)
1945	√	√	√				√		(√)
1944	√	√	√				√		(√)
1943	√	√	√				√		(√)
1942	√	√	√				√		(√)
1941	√	√	√				√		(√)
1931	√	√	√				√		(√)

TABLE 2: DATA BASIS, FORMAT AND QUALITY

COMMON NAME:	HADDOCK	
AREA:	NORTHWEST ATLANTIC	
STOCK:	GEORGES BANK (NAFO DIV. 5Z+SUBAREA 6)	
REPRODUCTIVE STRATEGY:	DETERMINATE BATCH SPAWNER	REF. NO.:
TIMING OF SPAWNING:	JANUARY-MAY	REF. NO.: 1
OPTIMAL TIME FOR MATURITY SAMPLING:	FEBRUARY-MARCH	REF. NO.: 1

Data basis, format and quality						
Variables	Year range	Data basis (A/L/W)	Data origin	Sampling frequency	Notes on data, methods and contents	Ref. No.
Stock size	1931-1962	A,L	CL	Q	VPA	2
	1963-2001	A,L	CL,S	Q,B	VPA, relative abundance	2
Stock composition	1931-1962	A,L	CL	B	Low sampling of market categories in mid-1990s	2
	1963-1991	A,L	S,CL,CC	B,Q,Q		2
	1992-2001	A,L,W	S,CL,CC	B,Q,Q		2
Age determination	1931-1962		CL	Q		3
	1963-2001		S,CC	B,Q		3
Sex ratio	1963-2001	L,A	S	B		4
Maturity:						
A. Ogives (E)	1949-1950		CL,S	MARCH	Macroscopic observations from spring	2, 5, 6,7,8,9, 10
	1963-1969	A,L	S	B		
	1970-2001	A,L	S	B		
B. Skip of spawning						
C. Spawning probability						
D. Other						
Fecundity:						
A. Estimation	1879	L,W		CL	7 fish sampled	11
B. First time vs repeat spawners	1963-1996	A	S	A	Derived from maturity ogives	12
C. Atresia						
D. Other						
Weight:						
A. Commercial fisheries data	1931-1962	L,A	CC,CL	Q		2
	1963-2001					
B. Survey data	1992-2001	L,A	S	B		4
C. Other						

Data basis, format and quality						
Variables	Year range	Data basis (A/L/W)	Data origin	Sampling frequency	Notes on data, methods and contents	Ref. No.
Condition:						
A. Fulton	1992-2001	L,A	S	B		4
B. HSI						
C. Energy						
D. Other						
Egg viability:						
A. Egg quality						
B. Fertilisation success						
C. Egg mortality	1978-1999		S	B	Egg and larval surveys	13
D. Other						
Larval viability:						
A. Hatching success						
B. Larvae quality						
C. Mortality						
D. Other						
Spawning time	1963-2001		S	M,Q	Egg and larval survey	1,14, 15,16, 17,18
Contamination	1980		S		7 fish - muscle sampled	19
Environmental key factors	1963-2001		S	B	Temperature data	4
Other factors or parameters	1973-1984 1999	A,L A,L	S S	B B	Food habits	20

TABLE 3: STUDIES OF REPRODUCTIVE POTENTIAL

COMMON NAME:	HADDOCK
AREA:	NORTHWEST ATLANTIC
STOCK:	GEORGES BANK (NAFO DIV. 5Z+SUBAREA 6)

Estimation of reproductive potential			
Subject	Brief description	Year range	Ref. No.
Potential or realised egg production	Estimates of egg production	1978-1999	13,14
Viable egg and larvae production			
Critical life stages			
Environmental influences	Temperature	1963-2001	4
Stock recruitment relations	Spawning stock biomass vs age 1 recruitment	1931-2000	2
	Adjusted for first-time vs repeat spawners	1963-1996	12
Other studies			

TABLE 4: DATA SOURCES

COMMON NAME:	HADDOCK
AREA:	NORTHWEST ATLANTIC
STOCK:	GEORGES BANK (NAFO DIV. 5Z+SUBAREA 6)

Data sources (literature reference or contact person)
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2. BROWN, R. W. and N. J. MUNROE. 2000. Stock assessment of Georges Bank Haddock, 1931-1999. <i>NEFSC Ref. Doc.</i> , 00-12, 118 p.
3. PENTTILA, J. 1988. Haddock, <i>Melanogrammus aeglefinus</i> (Chapter 5). In: Age determination methods for Northwest Atlantic species. J. Penttila, and L.M. Dery (eds.). <i>NOAA Tech. Rep.</i> , NMFS 72, 135 p.
4. J. BURNETT, Northeast Fisheries Science Center, Woods Hole Laboratory, 166 Water Street, Woods Hole, Ma. 02543 U.S.A. (Jay.Brunett@noaa.gov).
5. CLARK, J.R. 1959. Sexual maturity of haddock. <i>Trans. Am. Fish. Soc.</i> 88, 3: 212-13.
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13. BERRIEN, P. Northeast Fisheries Science Center, J. J. Howard Marine Laboratory, 74 Magruder Road, Sandy Hook, Highlands, NJ 07732.
14. BERRIEN, P., and J. SIBUNKA. 1999. Distribution patterns of fish eggs in the U.S. Northeast continental shelf ecosystem, 1977-1987. <i>NOAA Tech. Rep.</i> , NMFS 145, 310 p.
15. COLTON, J. B., Jr., and R. R. BYRON. 1977. Gulf of Maine-Georges Bank ichthyoplankton collected on ICNAF larval herring surveys September 1971-February 1975. <i>NOAA Tech. Rep.</i> , NMFS SSRF-717, 34 p.

Data sources (literature reference or contact person)
16. COLTON, J. B., Jr., W. G. SMITH, A.W. KENDALL, Jr., P. L. BERRIEN, and M. P. FAHAY. 1979. Principal spawning areas and times of marine fishes, Cape Sable to Cape Hatteras. <i>Fish. Bull.</i> 76, 4: 911-915.
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19. BOEHM, P. D., and P. HIRTZER. 1982. Gulf and Atlantic survey for selected organic pollutants in finfish. <i>NOAA Tech. Mem.</i> , NMFS-F/NEC-13, 111 p.
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