

TABLE 1: AVAILABLE DATA

COMMON NAME:	ATLANTIC COD	SPECIES:	<i>Gadus morhua</i>
AREA:	NORTHWEST ATLANTIC	STOCK:	GULF OF MAINE (NAFO DIV. 5Y)
CREATED BY:	LORETTA O'BRIEN 2000-7-16	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	(√)	√	√	(√)	√				(√)
1974	(√)	√	√	(√)	√				(√)

Data status									
Year	Stock size	Stock composition	Age	Sex ratio	Maturity	Fecundity	Weight	Condition	Additional data
1973	(√)	√	√	(√)	√				(√)
1972	(√)	√	√	(√)	√				(√)
1971	(√)	√	√	(√)	√				(√)
1970	(√)	√	√	(√)	√				(√)
1969	(√)	√		(√)					(√)
1968	(√)	√		(√)					(√)
1967	(√)	√		(√)					(√)
1966	(√)	√		(√)					(√)
1965	(√)	√		(√)					(√)
1964	(√)	√		(√)					(√)
1963	(√)	√		(√)					(√)

TABLE 2: DATA BASIS, FORMAT AND QUALITY

COMMON NAME:	ATLANTIC COD		REF. NO.:	
AREA:	NORTHWEST ATLANTIC		REF. NO.:	1
STOCK:	GULF OF MAINE (NAFO DIV. 5Y)		REF. NO.:	1
REPRODUCTIVE STRATEGY:	DETERMINATE BATCH SPAWNER		REF. NO.:	
TIMING OF SPAWNING:	NOVEMBER-MAY		REF. NO.:	1
OPTIMAL TIME FOR MATURITY SAMPLING:	FEBRUARY-APRIL		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	1963-1981	A,L	S	B	Relative abundance	2
	1982-2001	A,L	CL,S	Q	VPA	2
Stock composition	1963-1981	A,L	S	B	Low sampling of large market categories	2
	1982-1991	A,L	S,CL,CC	B,Q,Q		2
	1992-2001	A,L,W	S,CL,CC	B,Q,Q		2
Age determination	1970-1981		S	B		3
	1982-2001		S,CC	B,Q		3
Sex ratio	1970-2001	L,A	S	B		4
Maturity:						
A. Ogives (E)	1970-2001	A,L	S	B	Macroscopic observations from spring	2,5,6,7
B. Skip of spawning						
C. Spawning probability						
D. Other						
Fecundity:						
A. Estimation	1879	L,W	CL		Six fish sampled	8
B. First time vs. repeat spawners						
C. Atresia						
D. Other						
Weight:						
A. Commercial fisheries data	1982-2001	L,A	CC,CL	Q		2
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	Q	Egg and larval surveys	9
D. Other						
Larval viability:						
A. Hatching success						
B. Larvae quality						
C. Mortality	1977-1987		S	M	Egg and larval survey	10
D. Other						
Spawning time	1963-2001		S	M,Q	Egg and larval survey	1, 11, 12, 13, 14
Contamination	1980		S	A	6 fish -muscle sampled	16
Environmental key factors	1963-2001		S	B	Bottom temperature data	4,17
Other factors or parameters	1973-2001	A,L	S	B	Food habits	15, 17

TABLE 3: STUDIES OF REPRODUCTIVE POTENTIAL

COMMON NAME:	ATLANTIC COD
AREA:	NORTHWEST ATLANTIC
STOCK:	GULF OF MAINE (NAFO DIV. 5Y)

Estimation of reproductive potential			
Subject	Brief description	Year range	Ref. No.
Potential or realised egg production	Estimates of egg production	1978-1999	9,11
Viable egg and larvae production			
Critical life stages			
Environmental influences			
Stock recruitment relations	Spawning stock biomass vs age 1 recruitment	1982-2000	2
Other studies			

TABLE 4: DATA SOURCES

COMMON NAME:	ATLANTIC COD
AREA:	NORTHWEST ATLANTIC
STOCK:	GULF OF MAINE (NAFO DIV. 5Y)

Data sources (literature reference or contact person)	
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2. MAYO, R. K., E. M. THUNBERG, S. E. WIGLEY, and S. X. CADRIN. 2002. The 2001 assessment of the Gulf of Maine Atlantic cod stock: A report of the 33 rd Northeast Regional Stock Assessment Workshop (33 rd SAW). <i>NEFSC Ref. Doc.</i> , 02-02.	
3. PENTTILA, J. 1988. Atlantic cod <i>Gadus morhua</i> (Chapter 6). 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. BURNETT, J. Northeast Fisheries Science Center, Woods Hole Laboratory, 166 Water Street, Woods Hole, MA 02543, USA (jay.burnett@noaa.gov).	
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9. BERRIEN, P. Northeast Fisheries Science Center, J. J. Howard Marine Laboratory, 74 Magruder Road, Sandy Hook, Highlands, NJ 007732.	
10. MORSE, W. W. 1994. Atlantic cod, <i>Gadus morhua</i> , larvae: an analysis of the MARMAP time series, 1977-1987. <i>NEFSC Ref. Doc.</i> , 94-08, 43 p.	
11. 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.	
12. 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.	
13. 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.	
14. AMES, E. P. 1997. Cod and haddock spawning grounds in Gulf of Maine. Island Institute, 410 Main Street, Rockland MA 04841.	
15. LINK, J. Northeast Fisheries Science Center, Woods Hole Laboratory, 166 Water Street, Woods Hole, MA 02543 USA (Jason.Link@noaa.gov).	

Data sources (literature reference or contact person)
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