NAFO Sci. Coun Studies, 37: 129–134

TABLE 1: AVAILABLE DATA

COMMON NAME:	HADDOCK	**SPECIES:**	*Melanogrammus aeglefinus*
AREA:	NORTHWEST ATLANTIC	**STOCK:**	EASTERN SCOTIAN SHELF (NAFO DIV. 4TVW)
CREATED BY:	ED TRIPPEL 2001-07-17	**UPDATED BY:**	ED TRIPPEL 2003-02-03

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	√	√	√	(√)	√		√	√	(√)

Data status									
Year	**Stock size**	**Stock composition**	**Age**	**Sex ratio**	**Maturity**	**Fecundity**	**Weight**	**Condition**	**Additional data**
1975	√	√	√	(√)	√		√	√	(√)
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	√	√	√	(√)			√		

TABLE 2: DATA BASIS, FORMAT AND QUALITY

COMMON NAME: HADDOCK

AREA: NORTHWEST ATLANTIC

STOCK: EASTERN SCOTIAN SHELF (NAFO DIV. 4TVW)

REPRODUCTIVE STRATEGY: DETERMINATE SPAWNER **REF. NO.:** 5

TIMING OF SPAWNING: FEBRUARY-JUNE **REF. NO.:** 4,8,9

OPTIMAL TIME FOR MATURITY SAMPLING: FEBRUARY-MARCH **REF. NO.:** 4

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	1948-1984	A	C,L,S	Q	SPA Estimates	1
	1970-2000	A	C,L,S	Q	SPA Estimates	2
Stock composition	1948-1984	A,L,W	S,CL	Y,Q		1
	1970-2000	A,L,W	S,CL	JULY		2
	1979-2000	A,L,W	S,CL	MARCH	(Excludes 1985)	2
	1995-1996	A,L,W	S	FALL	Fixed gear survey (hook)	2
Age determination	1948-1984	A	S,CL	Y,Q		1
	1970-2000	A	S,CL	Y,Q		2
Sex ratio	1948-2000	A,L,W	S		Could be extracted from survey data bases	3
Maturity:						
A. Ogives (E)	1958-1979	A,L	S	JAN-SEP	Maturity ogives in 5 - year periods and percent mature by age (4Vn, 4Vs, 4W)	6
	1958-1993	A	S	JAN-SEP	Percent females at age	1
	1979-1995	L	S	MARCH	Proportion mature at length (both sexes)	4
	1979-2000	L	S	MARCH	Females -length at 50% maturity	2
	1979-2000	L	S	MARCH	Proportion mature at length	2,5
B. Skip of spawning						
C. Spawning probability						
D. 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.**
Fecundity:						
A. Estimation	1997-1999	A,L,W	S	MARCH	1997 (Waiwood and Buzeta 1989 technique-250 um mesh); 1998-Gilson's fluid, 1999 - 95% ethanol, 235 um mesh)- primarily Western Bank; with multiple regressions on L, W, CF and HSI	5,10
B. First time vs. repeat spawners	1979-1999	L	S		Females>40.5 cm considered repeat spawners (egg production evaluated separately)	5
C. Atresia						
D. Other	1997-1999	L,W	S	MARCH	Gonadosomatic indices and gonad wt/whole body wt equations	5
Weight:						
A. Commercial fisheries data	1948-1984 1954-2000 1989-2000	A,L,W A,L,W A,L,W	CL CL CL	M,Q,B,Y M,Q,B,Y Q	 By NAFO area/country	1 2 2
B. Survey data	1970-2000	A,L,W			Estimated means	2
C. Other						
Condition:						
A. Fulton	1997-1999	L,W	S	MARCH	Fultons vs length and wt.	5
B. HSI	1997-1999	L,W	S	MARCH	HSI vs. length and wt	5
C. Energy						
D. Other	1970-1984 1970-2000	L,W L,W	S S		L/W equations (spring/summer/fall) Annual L/W equations Predicted weights at 30 cm and 45 cm (summer)	1 2
Egg viability:						
A. Egg quality						
B. Fertilisation success						
C. Egg mortality						
D. Other						
Larval viability:						
A. Hatching success						
B. Larvae quality						
C. Mortality						
D. 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.**
Spawning time	1920-1997	L,W	X		Fishermen's knowledge through interviews, includes spawning areas (present and lost)	7
	1979-1981		S	Sesaonal	Stage 1-3 haddock eggs (SSIP)- Spawning from February-June	8,9
Contamination						
Environmental key factors						
Other factors or parameters						

TABLE 3: STUDIES OF REPRODUCTIVE POTENTIAL

COMMON NAME:	HADDOCK
AREA:	NORTHWEST ATLANTIC
STOCK:	EASTERN SCOTIAN SHELF (NAFO DIV. 4TVW)

Estimation of reproductive potential			
Subject	**Brief description**	**Year range**	**Ref. No.**
Potential or realised egg production	Fecundity estimates of wild fish	1997-1999	5
	Fecundity projections for time series	1970-1999	5
Viable egg and larvae production			
Critical life stages			
Environmental influences			
Stock recruitment relations	Mature female spawning stock *vs* recruitment (SPA age 1)	1948-1983	1
	Age#+ biomass *vs* recruitment (SPA age 1)	1970-1996	2
	Total egg production *vs* recruitment (SPA age 1)	1970-1999	5
	Egg production of repeat spawners *vs* recruitment	1970-1999	5
	Mean weight (46.5 cm) *vs* recruitment	1970-1999	5
	Fultons condition factor *vs* recruitment	1970-1999	5
Other studies			

TABLE 4: DATA SOURCES

COMMON NAME:	HADDOCK
AREA:	NORTHWEST ATLANTIC
STOCK:	EASTERN SCOTIAN SHELF (NAFO DIV. 4TVW)

Data sources (literature reference or contact person)
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3. K. FRANK, Marine Fish Division, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, Nova Scotia, B2Y 4A2 (frankk@mar.dfo-mpo.gc.ca).
4. TRIPPEL, E. A., M. J. MORGAN, A. FRECHET, C. ROLLET, A. SINCLAIR, C. ANNAND, D. BEANLANDS, and L. BROWN. 1997. Changes in age and length at sexual maturity of northwest Atlantic cod, haddock and pollock stocks, 1972-1995. *Can. Tech. Rep. Fish. Aquat. Sci.*, No. 2157.
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