NAFO Sci. Coun Studies. 37: 61–68

TABLE 1: AVAILABLE DATA

COMMON NAME:	ATLANTIC COD	**SPECIES:**	*Gadus morhua*
AREA:	NORTHWEST ATLANTIC	**STOCK:**	BAY OF FUNDY/WESTERN SCOTIAN SHELF (NAFO DIV. 4X)
CREATED BY:	ED TRIPPEL 2001-07-17	**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	√	√	√	(√)			√	(√)	

TABLE 2: DATA BASIS, FORMAT AND QUALITY

COMMON NAME: ATLANTIC COD

AREA: NORTHWEST ATLANTIC

STOCK: BAY OF FUNDY/WESTERN SCOTIAN SHELF (NAFO DIV. 4X)

REPRODUCTIVE STRATEGY: DETERMINATE SPAWNER **REF. NO.:** 11

TIMING OF SPAWNING: JANUARY-APRIL **REF. NO.:** 11,12,14,16

OPTIMAL TIME FOR MATURITY SAMPLING: DECEMBER-JANUARY **REF. NO.:** 5,11

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	1948-1989	A	C,L,S		VPA (quality of VPA considered suspect due to poor sampling in early years)	1
	1970-2000	A	S	JULY	Relative abundance	2
	1983-2000	A	C,L,S	Q	VPA	2,3
Stock composition	1948-1969	A,L,W	S,CL		Poor data sampling in early years	1
	1970-2000	A,L,W	S,CL	Y,Q		2,3
Age determination	1948-1969		S,CL		Poor otolith sampling in early years	1,3
	1970-2000		S,CL	Y,Q		2
Sex ratio	1980-2000	A,L,W	S	Y		2
Maturity:						
A. Ogives (E)	1963-1979	A,L	S	Spring	Age and length by sex.	4
	1980-1985	A,L	S	Spring	Spring survey terminated in 1985, remaining summer survey not appropriate time to conduct maturity determination.	5
B. Skip of spawning						
C. Spawning probability	1978-1979	A,L,W	EC	lab expt	Ovarian wall thickness in relation to maturity.	6
	1978-1979	A,L,W	EC, S		Study of growth in relation to maturity	7
D. Other		A,L,W.	S	N<10	Photographs of histological and macroscopic stages of gonad development	8

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	1983-1985	L,W	X		Seasonal stock production of eggs (modelled)	9
	1997	L,W	EC	13 PAIRS	Seasonal egg production and related feeding habits	10
B. First time vs. repeat spawners	1994-1995	A,L,W	EC	14 PAIRS	Seasonal egg production	11
C. Atresia						
D. Other						
Weight:						
A. Commercial fisheries data	1948-1989	A,L,W	CL	M,Q,B,Y	In many early years sampling was very poor or non-existent	1,3
	1980-2000	A,L	CL	Q		2,3
B. Survey data	1970-2000	A,L,W	S	JULY	Estimated means	2
C. Other						
Condition:						
A. Fulton						
B. HSI						
C. Energy						
D. Other	1997	L,W	EC	13 PAIRS	Weight loss during spawning	10
Egg viability:						
A. Egg quality	1994-1995	A,L,W	EC	14 PAIRS	First-time and second-time spawners	11
B. Fertilisation success	1994-1995	A,L,W	EC	14 PAIRS	First-time and second-time spawners	11
C. Egg mortality						
D. Other						
Larval viability:						
A. Hatching success	1994-1995	A,L,W	EC	14 PAIRS	First-time and second-time spawners	11
B. Larvae quality	1994-1995	A,L,W	EC	14 PAIRS	First-time and second-time spawners (larval dry weight)	11
C. Mortality						
D. Other	1994-1995	A.L,W	EC	14 PAIRS	Yok sac size in relation to batch number	11

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)	12
	1933-1938	L,W	S	Q	Evidence of October-November spawning (Halifax, St. Margaret Bay)	13
	1979-1985	A,L,W L,W	S	MAR-APR	Skewed sex ratios (Browns Bank)	14
	1983-1985		S	SPRING	Pelagic eggs (Browns Bank /SW Nova Scotia)	15
	1975-1997		S		Egg and larval surveys (LHP, FEP, SSIP)	16
	1994-1995		EC	14 PAIRS	Spawning duration/pair	11
	1997		EC	13 PAIRS	Spawning duration/pair	10
Contamination						
Environmental key factors	1988		EC		Larval size at hatch in relation to incubation temperature	17
	1994	L,W	EC	5 MALES	Salinity effects on sperm motility	18
Other factors or parameters	1991	A,L,W	EC	14 MALES	Sperm quality of first-time and second-time spawners (sperm motility, spermatocrit, fertilization success, hatching success).	19
	1993	L,W	EC	3 MALES	Sperm longevity in seawater	20
	1994-1996	A,L,W	EC	40 MALES	Sperm density, spermatocrit, sperm size, seasonal trends	21
	1994-1996	L,W	EC	18 MALES	Sperm potency and sperm competiions in relation to sire condition and body size	22
	1995	L,W	EC	8 FEMALE AND 16 MALES	Spawning trios; genotypes of progeny of 51 egg batches related to male body size, condition, and activity	23

TABLE 3: STUDIES OF REPRODUCTIVE POTENTIAL

COMMON NAME: ATLANTIC COD

AREA: NORTHWEST ATLANTIC

STOCK: BAY OF FUNDY/WESTERN SCOTIAN SHELF (NAFO DIV. 4X)

Estimation of reproductive potential			
Subject	**Brief description**	**Year range**	**Ref. No.**
Potential or realised egg production	Fecundity of captive cod	1994, 1997	11,10
Viable egg and larvae production	Egg size, larval size, fertilization, hatching success, spawning duration of first-time and second-time spawners	1994-1995	11
Critical life stages			
Environmental influences	Larval size at hatch in relation to incubation temperature	1988	17
Stock recruitment relations	Spawning stock biomass *vs* recruits	1948-1989	24
	Predicted egg production from egg surveys *vs* recruits	1983-1985	9
	age 5+ SSB *vs* age 2 survey recruits	1980-1995	25
Other studies	Sperm quality of first-time and repeat spawners	1991	19
	Fertilization success of males in relation to condition and size using in vivo sperm competition experiments	1994-1996	22
	Fertilization success of males in relation to condition and size using captive spawning trio experiments	1995	23

TABLE 4: DATA SOURCES

COMMON NAME:	ATLANTIC COD
AREA:	NORTHWEST ATLANTIC
STOCK:	BAY OF FUNDY/WESTERN SCOTIAN SHELF (NAFO DIV. 4X)

Data sources (literature reference or contact person)
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