

TABLE 1: AVAILABLE DATA

COMMON NAME:	ATLANTIC COD	SPECIES:	<i>GADUS MORHUA</i>
AREA:	ICELANDIC WATERS	STOCK:	ICELANDIC COD (ICES DIV. Va)
CREATED BY:	GUDRUN MARTEINSDOTTIR	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	√	√	√		√				√

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	√								
1947	√								
1946	√								
1945	√								
1944	√								
1943	√								
1942	√								
1941	√								
1925	√								

TABLE 2: DATA BASIS, FORMAT AND QUALITY

COMMON NAME:	ATLANTIC COD			REF. NO.:	
AREA:	ICELANDIC WATERS			REF. NO.:	
STOCK:	ICELANDIC COD (ICES DIV. Va)			REF. NO.:	
REPRODUCTIVE STRATEGY:	DETERMINATE SPAWNER			REF. NO.:	
TIMING OF SPAWNING:	MARCH - JUNE			REF. NO.:	
OPTIMAL TIME FOR MATURITY SAMPLING:	JANUARY - FEBRUARY			REF. NO.:	

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	1925-1991	A,L	S,CC,CL	M	VPA	
	1955-1991	A,L	S,CC,CL	M	VPA	1
	1980-2000	A,L	S,CC,CL	M	VPA	2
Stock composition	1955-1991	A	S,CC,CL	M		1
	1955-1992	A	S,CC,CL	M		3
	1980-2000	A	S,CC,CL	M		2
Age determination	1955-1991		S,CC,CL	M	Monthly sampling used in annual VPA	1
Sex ratio	1990-1999		S			4
Maturity:						
A. Ogives (E)	1955-1991	A	S,CCCL	A		1
	1980-2000	A	S,CC,CL	A		2
	1985-1999	A,L	S	A	Survey data L50 from survey data	5, 6
B. Skip of spawning						
C. Spawning probability						
D. Other						
Fecundity:						
A. Estimation	1960	L	CL	A		8
	1967	L,A	CL	A		7
	1997	L	S,CL	A		9
	1995-2000	L,A	S,CL			6
B. First time vs. repeat spawners						
C. Atresia	1998-1999	L,A	S,CL	W	February-May	10

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.
D. Other	1999	L,A	S,CI	W	Batch fecundity: March-May	6
Weight:						
A. Commercial fisheries data						
B. Survey data						
C. Other						
Condition:						
A. Fulton	1991-1999	L,A	S, CL	A	Spawning fish Spawning fish	6
	1994-1999	L	S,CL	W		11
	1994-1995		CL,EW			15
B. HSI	1994-1999	L	S,CL	W		11
C. Energy						
D. Other						
Egg viability:						
A. Egg quality	1994	L	EW	MAR-MAY		12
	1994-1996	L	EW	MAR-MAY		6
B. Fertilisation success						
C. Egg mortality						
D. Other						
Larval viability:						
A. Hatching success	1994	L	EW	MAR-MAY		12
B. Larvae quality	1994	L	EW	MAR-MAY		12
	1994, 1996	L	EW			6
C. Mortality						
D. Other						
Spawning time	1953-1981	L	S	W-MAR-MAY		13
	1994-1999	L,A	EW	MAY		11
	1995-1997		S,EW	W-MAR-MAY		14
	1994-1995	L	S,EW			15
Contamination						
Environmental key factors						
Other factors or parameters						

TABLE 3: STUDIES OF REPRODUCTIVE POTENTIAL

COMMON NAME:	ATLANTIC COD
AREA:	ICELANDIC WATERS
STOCK:	ICELANDIC COD (ICES DIV. Va)

Estimation of reproductive potential			
Subject	Brief description	Year range	Ref. No.
Potential or realised egg production	Spatial variation in length based egg production	1997	9
	Egg production model for different population scenarios		17
Viable egg and larvae production	Spatial variation in length based egg production		9
	Egg production model for different population scenarios		17
Critical life stages			
Environmental influences	Environmental effects on mature cod distribution	1985-1991	5
Stock recruitment relations	Importance of stock composition with respect to recruitment	1955-1993	3
	Simulations to investigate probability of stock recovery		18
	Influence of environmental factors on recruitment	1972-1999	4, 16, 19
Other studies			

TABLE 4: DATA SOURCES

COMMON NAME:	ATLANTIC COD
AREA:	ICELANDIC WATERS
STOCK:	ICELANDIC COD (ICES DIV. Va)

Data sources (literature reference or contact person)	
1.	STEFANSSON, G. 1992. Notes on the stock dynamics and assessments of the Icelandic cod. <i>ICES C.M. Doc.</i> , No. 1992/G: 71.
2.	ANON. 2000. State of the marine stocks in Icelandic waters 1999/2000. <i>Hafrannsóknastofnunin Fjöldrit</i> , 75: 1-76.
3.	MARTEINSDOTTIR, G., and K. THORARINSSON. 1998. Improving the stock-recruitment relationship in Icelandic cod (<i>Gadus morhua</i> L.) by including age diversity of spawners. <i>Can. J. Fish. Aquat. Sci.</i> , 55: 1372-1377.
4.	BEGG, G., and G. MARTEINSDOTTIR. Spatial and temporal partitioning of spawning stock biomass: effects of fishing on the composition of spawners. <i>Fish. Res.</i> (submitted).
5.	BEGG, G., and G. MARTEINSDOTTIR. Environmental and stock effects on spatial distribution of mature cod <i>Gadus morhua</i> . <i>Mar. Ecol. Prog. Ser.</i> (submitted).
6.	MARTEINSDOTTIR, G., and G. A. BEGG. 2002. Essential relationships incorporating the influence of age, size, and condition on variables required for re-estimation of reproductive potential in Atlantic cod <i>Gadus morhua</i> stocks. <i>Mar. Ecol. Prog. Ser.</i> , 235: 235-256.
7.	SCHOPKA, S. A. 1971. Vergleichende untersuchungen zur fortpflanzungsrate bei Herings-und Kabeljaupopulationen (<i>Clupea harengus</i> L. und <i>Gadus morhua</i> L.) <i>Sonderdruck aus Bd</i> , 22: H 1 S 31-79.
8.	JOAKIMSSON, G. 1969. Fruchtbarkeitsbestimmungen an Kabeljau, Schellfisch und Hering in islandadischen gewässern. <i>Kieler Meeresforsch</i> , 25: 172-189.
9.	MARTEINSDOTTIR, G., A. GUOMUNDSDOTTIR, V. PORSTEINSSON, and G. STEFANSSON. 2000. Spatial variation in abundance, size composition and viable egg production of spawning cod (<i>Gadus morhua</i> L.) in Icelandic waters. <i>ICES J. Mar. Sci.</i> , 57: 824-830.
10.	HARDARDOTTIR, K., O. KJESBU, and G. MARTEINSDOTTIR. MS 2001. Relationship between atresia, fish size, and condition in Icelandic cod (<i>Gadus morhua</i> L.). <i>ICES C.M.</i> , 2001.
11.	MARTEINSDOTTIR, G., and H. BJORNSSON. 1999. Time and duration of spawning of cod in Icelandic waters. <i>ICES C.M. Doc.</i> , No. 1999/Y: 34.
12.	MARTEINSDOTTIR, G., and A. STEINARSSON. 1998. Maternal influence on the size and viability of Iceland cod (<i>Gadus morhua</i> L.) eggs and larvae. <i>J. Fish. Biol.</i> , 52(6): 1241-1258.
13.	JONSSON, E. 1982. A survey of spawning and reproduction of Icelandic cod. <i>Rit. Fiskideilar</i> , 6: 45.
14.	MARTEINSDOTTIR, G. B. GUNNARSSON, and I. M. SUTHERS. 2000. Spatial variation in hatch date distributions and origin of pelagic juvenile cod in Icelandic waters. <i>ICES J. Mar. Sci.</i> , 57: 1184-1197.
15.	MARTEINSDOTTIR, G., and G. PETURSDOTTIR. 1995. Spatial and temporal variation in reproduction of Icelandic cod at Selvogsbanki and nearby coastal areas. <i>ICES C.M. Doc.</i> , No. 1995/G: 15.

Data sources (literature reference or contact person)
16. OLAFSSON, J. 1985. Recruitment of Icelandic haddock and cod in relation to variability in the physical environment. <i>ICES C.M. Doc.</i> , No. 1985/Q: 59.
17. SCOTT, B., G. MARTEINSDOTTIR, and P. WRIGHT. 1999. Potential effects of maternal factors on spawning stock-recruitment relationships under varying fishing pressure. <i>Can. J. Fish. Aquat. Sci.</i> , 56 : 1882-1890.
18. BALDURSSON, F.M., A. DANIELSSON, and G. STEFANSSON. 1996. On the rational utilization of the Icelandic cod stock. <i>ICES J. Mar. Sci.</i> , 53 : 643-658.
19. OLAFSSON, J., G. JOHANSSON, and G. STEFANSSON. 1993. Recruitment of Icelandic cod in relation to spawning stock biomass and environmental factors. <i>ICES 1993/CCC Symposium</i> , No. 37.

