NAFO Sci. Coun Studies, 37: 219–223

TABLE 1: AVAILABLE DATA

COMMON NAME:	WITCH FLOUNDER	**SPECIES:**	*Glyptocephalus cynoglossus*
AREA:	NORTHWEST ATLANTIC	**STOCK:**	NAFO SUBDIV. 3Ps
CREATED BY:	JOANNE MORGAN	**UPDATED BY:**	JOANNE MORGAN 2002-03-25

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	(√)	√	√	(√)	(√)	√			

Data status									
Year	**Stock size**	**Stock composition**	**Age**	**Sex ratio**	**Maturity**	**Fecundity**	**Weight**	**Condition**	**Additional data**
1977	(√)	√	√	(√)	(√)				
1976	(√)	√	√	(√)	(√)				
1975			(√)						
1974		√	√	√	√				
1973		(√)	(√)	(√)	(√)				
1972		(√)	(√)	(√)	(√)				
1971		(√)	(√)	(√)	(√)				
1970		(√)	(√)	(√)	(√)				
1969		(√)	(√)	(√)	(√)				
1968		(√)	(√)	(√)	(√)				
1967		(√)	(√)	(√)	(√)				
1966		(√)	(√)	(√)	(√)				
1965		(√)	(√)	(√)	(√)				
1964		(√)	(√)	(√)	(√)				
1963		(√)	(√)	(√)	(√)				
1962		(√)	(√)	(√)	(√)				
1961		(√)	(√)	(√)	(√)				
1960		(√)	(√)	(√)	(√)				
1959		(√)	(√)	(√)	(√)				
1958		(√)	(√)	(√)	(√)				

TABLE 2: DATA BASIS, FORMAT AND QUALITY

COMMON NAME: WITCH FLOUNDER

AREA: NORTHWEST ATLANTIC

STOCK: NAFO SUBDIV. 3Ps

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

TIMING OF SPAWNING: MAR-JUNE **REF. NO.:** 5

OPTIMAL TIME FOR MATURITY SAMPLING: **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	1976-1994	A,L	S	Y		1
	1995-2000	L	S	Y		1,2
Stock composition	1974	A,L	S	various	data from 1958-74 combined	4
						1,3
	1976-1994	A,L	CC,CL,S	Q,Q,Y	Otoliths still collected but no ageing since 1994	1,2
	1995-2000	L	CC,CL,S	Q,Q,Y		
Age determination	1974	A	S	various	data from 1958-74 combined	4
	1975	A	CC,CL	Q,Q		2
	1976-1994	A	CC,CL,S	Q,Q,Y		1,3
	1995-2000	A	CC,CL,S	Q,Q,Y	Otoliths still collected but no ageing since 1994	2
Sex ratio	1974	A,L	S	VARIOUS	data from 1958-74 combined	4
	1976-1994	A,L	S	Y		2
	1995-2000	L	S	Y		2
Maturity:						
A. Ogives (E)	1974	A,L	S	VARIOUS	data from 1958-74 combined	4
	1976-1994	A,L	S	Y		2
	1995-2000	L	S	Y		2
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	1978	A,L,W	S	APRIL-MAY	data from 1974-1977 combined	6
	1993-1994	A,L,W	S	Y		2
	1995-1998	A,L,W	S	Y	otoliths sampled but not aged	2
B. First time vs. repeat spawners						
C. Atresia						
D. Other						
Weight:						
A. Commercial fisheries data	1975-1994 1995-2000	L	CC,CL	Q,Q	invariant length weight relationship Otoliths collected but no ageing since 1994	2,7
B. Survey data	1990-1994	A,L	S	Y		2
	1995-2000	A,L	S	Y	Otoliths collected but no ageing since 1994	2
C. Other						
Condition:						
A. Fulton	1990-1994	A,L	S	Y		2
	1995-2000	A,L	S	Y	Otoliths collected but no ageing since 1994	2
B. HSI	1990-1994	A,L	S	Y		2
	1995-2000	A,L	S	Y	Otoliths collected but no ageing since 1994	2
C. Energy						
D. Other	1990-1994	A,L	S	Y	GSI	2
	1995-2000	A,L	S	Y	GSI, otoliths collected but no ageing since 1994	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						
Spawning time	1990	A,L	S	VARIOUS	All available data combined	5

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.**
Contamination						
Environmental key factors						
Other factors or parameters						

TABLE 4: DATA SOURCES

COMMON NAME:	WITCH FLOUNDER
AREA:	NORTHWEST ATLANTIC
STOCK:	NAFO SUBDIV. 3Ps

Data sources (literature reference or contact person)
1. BOWERING, W. R. MS 1999. Stock status of witch flounder in NAFO Subdivision 3Ps. *Can. Stock Ass. Sec. Res. Doc.*, No. 144.
2. UNPUBL. DATA: W.R. BOWERING, DFO, P. O. Box 5667, St. John's, NF, A1C 5X1, Canada (boweringr@dfo-mpo.gc.ca).
3. BOWERING, W. R. MS 1995. Witch flounder in Subdivision 3Ps: a stock status update. *DFO Atl. Fish. Res. Doc.*, No. 38.
4. BOWERING, W. R. 1976. Distribution, age and growth, and sexual maturity of witch flounder (*Glyptocephalus cynoglossus*) in Newfoundland waters. *J. Fish. Res. Board Can.*, **33**: 1574-1584.
5. BOWERING, W. R. 1990. Spawning of witch flounder (*Glyptocephalus cynoglossus* L.) in the Newfoundland-Labrador area of the northwest Atlantic as a function of depth and water temperature. *Fish. Res.*, **9**: 23-39.
6. BOWERING, W. R. 1978. Fecundity of witch flounder (*Glyptocephalus cynoglossus*) from St. Pierre Bank and the Grand Bank of Newfoundland. *J. Fish. Res. Board Can.*, **35**: 1199-1206.
7. BOWERING, W. R. and D. E. STANSBURY. 1984. Regressions of weight on length for witch flounder, *Glyptocephalus cynoglossus*, of the eastern Newfoundland area. *J. Northw. Atl. Fish. Sci.*, **5**: 105-106.