

**TABLE 1: AVAILABLE DATA**

<b>COMMON NAME:</b>	WINTER FLOUNDER	<b>SPECIES:</b>	<i>Pseudopleuronectes americanus</i>
<b>AREA:</b>	NORTHWEST ATLANTIC	<b>STOCK:</b>	COASTAL (SOUTHERN NEW ENGLAND/MID-ATLANTIC) NAFO SUBAREAS 5+6
<b>CREATED BY:</b>	JAY BURNETT 2001-08-10	<b>UPDATED BY:</b>	

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						√			

**TABLE 2: DATA BASIS, FORMAT AND QUALITY**

<b>COMMON NAME:</b>	WINTER FLOUNDER	
<b>AREA:</b>	NORTHWEST ATLANTIC	
<b>STOCK:</b>	COASTAL (SOUTHERN NEW ENGLAND/MID-ATLANTIC) NAFO SUBAREAS 5+6	
<b>REPRODUCTIVE STRATEGY:</b>	DETERMINATE BATCH SPAWNER	<b>REF. NO.:</b> [ ]
<b>TIMING OF SPAWNING:</b>	FEBRUARY-MAY	<b>REF. NO.:</b> 1
<b>OPTIMAL TIME FOR MATURITY SAMPLING:</b>	MARCH	<b>REF. NO.:</b> [ ]

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.
<b>Stock size</b>	1963-1980	L	S	Y,B	Relative abundance	2,3,4
	1981-1998	A,L,W	S,CL,CC	B,Q	VPA	2,3,4
	1999-2001	A,L,W	S,CL,CC	B,Q		4
<b>Stock composition</b>	1963-1980	L	S	Y,B	Fall survey only 1963-67	2
	1981-2001	A,L,W	S,CL,CC	B,Q	Sea sampling begun 1989	2,3,4
<b>Age determination</b>	1978-2001		S,CL,CC	B,Q	MA DMF only 1978-79 Commercial 1981-2000	2,4,5
<b>Sex ratio</b>	1977-2001	A,L	S	B		6
<b>Maturity:</b>						
A. Ogives (E)	1985-1990	A,L	S	B	Macroscopic observations 1977-2001	6,7
B. Skip of spawning						
C. Spawning probability						
D. Other	1988	A,L,W	Special study		Gonadosomatic index	8
<b>Fecundity:</b>						
A. Estimation	1958 1988	A,L,W A,L,W	Special studies		Narragansett Bay, RI n=40 Narragansett Bay	9 8
B. First time vs. repeat spawners						
C. Atresia	1966 1966	L L	Experimen-tal studies		N=103 n=120	10 11
D. Other						
<b>Weight:</b>						
A. Commercial fisheries data	1981-1997	A,L	CL	Q	Estimated mean weights	2

<b>Data basis, format and quality</b>						
<b>Variables</b>	<b>Year range</b>	<b>Data basis (A/L/W)</b>	<b>Data origin</b>	<b>Sampling frequency</b>	<b>Notes on data, methods and contents</b>	<b>Ref. No.</b>
B. Survey data	1992-2001	A,L	S	B	Individual fish weights	6
C. Other						
<b>Condition:</b>						
A. Fulton						
B. HSI	1966	L,W	Experiment		N=120	11
C. Energy	1966	L,W	Experiment		N=120	11
D. Other						
<b>Egg viability:</b>						
A. Egg quality	1988	A,L,W	Experiment		N=40	8
B. Fertilisation success	1986-1988 1988	A,L,W A,L,W	Special studies		Long I. Sound & Boston Narragansett Bay, RI	12 8
C. Egg mortality						
D. Other						
<b>Larval viability:</b>						
A. Hatching success	1986-1988 1988	A,L,W	Special studies		Long I. Sound & Boston Narragansett Bay, RI	12 8
B. Larvae quality	1986-1988	A,L,W	Special study		Long Island Sound and Boston Harbor	12
C. Mortality	1986-1988 1988	A,L,W	Special studies		Long I. Sound & Boston Narragansett Bay, RI	12 8
D. Other						
<b>Spawning time</b>	1963-2001	L	S	Q-M	Egg and larval surveys	1,13,14 15,16
<b>Contamination</b>	1980 1986-1988	L A,L,W	Special studies		PCH/PCB levels n=22 Long Island Sound	17 12
<b>Environmental key factors</b>						
<b>Other factors or parameters</b>	1973-2001	A,L	S	B	Food habits data	18

**TABLE 3: STUDIES OF REPRODUCTIVE POTENTIAL**

<b>COMMON NAME:</b>	WINTER FLOUNDER
<b>AREA:</b>	NORTHWEST ATLANTIC
<b>STOCK:</b>	COASTAL (SOUTHERN NEW ENGLAND/MID-ATLANTIC) NAFO SUBAREAS 5+6

<b>Estimation of reproductive potential</b>			
<b>Subject</b>	<b>Brief description</b>	<b>Year range</b>	<b>Ref. No.</b>
Potential or realised egg production			
Viable egg and larvae production	Experimental study with Narragansett Bay fish Experimental study with Long Island Sound and Boston fish	1988 1986-1988	8 12
Critical life stages			
Environmental influences			
Stock recruitment relations	Spawning stock biomass vs Age 1 recruits	1981-1997	2
Other studies			

**TABLE 4: DATA SOURCES**

<b>COMMON NAME:</b>	WINTER FLOUNDER
<b>AREA:</b>	NORTHWEST ATLANTIC
<b>STOCK:</b>	COASTAL (SOUTHERN NEW ENGLAND/MID-ATLANTIC) NAFO SUBAREAS 5+6

Data sources (literature reference or contact person)	
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2.	28th NORTHEAST REGIONAL STOCK ASSESSMENT WORKSHOP (28th SAW). 1999. E. Southern New England/Mid-Atlantic Winter Flounder. In: Stock Assessment Review Committee (SARC) Consensus Summary of Assessments. <i>NEFSC Ref. Doc.</i> , 99-08, 304 p.
3.	NORTHERN DEMERSAL WORKING GROUP. 2000. Assessment of 11 Northeast Groundfish Stocks through 1999: a report to the New England Fishery Management Council's Multi-species Monitoring Committee. <i>NEFSC Ref. Doc.</i> , 00-05, 175 p.
4.	NITSCHKE, P. Northeast Fisheries Science Center, 166 Water St., Woods Hole, MA 02543 USA (Paul.Nitschke@noaa.gov).
5.	FIELDS, B. 1988. Winter flounder <i>Pseudopleuronectes americanus</i> (Chapter 16). In: Age determination methods for Northwest Atlantic species. J. Penttila, and L. M. Dery (eds.). <i>NOAA Tech. Rep., NMFS</i> <b>72</b> , 135 p.
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7.	O'BRIEN, L., J. BURNETT, and R. K. MAYO. 1993. Maturation of nineteen species of finfish off the northeast coast of the United States, 1985-1990. <i>NOAA Tech. Rep., NMFS</i> , <b>113</b> , 66 p.
8.	BUCKLEY, L. J., A. S. SMIGIELSKI, T. A. HALAVIK, E. M. CALDARONE, B. R. BURNS, and G. C. LAURENCE. 1991. Winter flounder <i>Pseudopleuronectes americanus</i> reproductive success. II. Effects of spawning time and female size on size, composition and viability of eggs and larvae. <i>Mar. Ecol. Prog. Ser.</i> , <b>74</b> : 125-135.
9.	SAILA, S. B. 1963. The contribution of estuaries to the offshore winter flounder fishery in Rhode Island. <i>Proc. Carrib. Fish. Inst.</i> , <b>14</b> : 95-109.
10.	DUNN, R.S., and A.V. TYLER. 1969. Aspects of the anatomy of the winter flounder ovary with hypotheses on oocyte maturation time. <i>J. Fish. Res. Board Can.</i> , <b>26</b> : 1943-1947.
11.	TYLER, A.V., and R.S. DUNN. 1976. Ration, growth, and measures of somatic and organic condition in relation to meal frequency in winter flounder, <i>Pseudopleuronectes americanus</i> , with hypotheses regarding population homeostasis. <i>J. Fish. Res. Board Can.</i> , <b>33</b> : 63-75.
12.	NOAA, NMFS, NEFC. 1990. Final Report on a three-year assessment of reproductive success in winter flounder, <i>Pseudopleuronectes americanus</i> (Walbaum), in Long Island Sound, with comparisons to Boston Harbor, 1986-1988. I. Reproductive cycle: vitellogenin. II. Comparative reproductive success: biology, biochemistry, chemistry. III. Comparative embryo development and mortality. Milford Laboratory, Milford, CT, 118 p.
13.	COLTON, J., and J. ST. ONGE. 1974. Distribution of fish eggs and larvae in continental shelf waters, Nova Scotia to Long Island. <i>Ser. Atlas Mar. Environ., Am. Geogr. Soc. Folio</i> , <b>23</b> .

Data sources (literature reference or contact person)
14. 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> , <b>76</b> (4): 5.
15. SMITH, W. G., J. D. SIBUNKA, and A. WELLS. 1975. Seasonal distributions of larval flatfish (Pleuronectiformes) on the continental shelf between Cape Cod and Cape Lookout, N.C., 1965-66. <i>NOAA Tech. Rep. Spec. Sci. Rep. Fish.</i> , <b>691</b> : 68.
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