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Distribution, and Abundance of Yellowtail Flounder (*Pleuronectes ferruginea*) on the Grand Bank,
NAFO Divisions 3LNO, as Derived from the Canadian Annual Bottom Trawl Surveys

by

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Introduction

Multi-species annual stratified-random bottom trawl surveys have been conducted by the Newfoundland region of the Canadian Dept of Fisheries and Oceans in Div. 3LNO since 1971. Since 1990, a second series of surveys have been carried out on the Grand Bank during the period October to December. From these surveys, swept area abundance estimates are derived for yellowtail flounder (*Pleuronectes ferruginea*) and serve as fishery-independent indices of stock size. Because catchability of the survey trawl is unknown and assumed to be 1.0, the indices are considered to be relative estimates of stock size.

The purpose of this paper is to describe the results of these annual surveys. Attention will be directed to monitor annual changes in stock size, spatial patterns and age and size composition.

Materials and Methods

Survey design: The stratification scheme is based on depth and shown in Fig. 1 (see Doubleday 1981 for a review of procedures). The 1971-1998 spring and the 1990-93 fall surveys covered depths from 45 to 731m. Beginning in 1994 it was decided to extend the coverage of only the fall surveys to depths deeper than 731 m. However, mechanical problems with the survey vessel did not permit these strata to be fished in 1995 and in 1996. In 1997 there was insufficient time survey to cover these depth strata beyond 731 m and in 1998, the extended coverage met with some success.

Survey gears: From 1971 to 1982 the surveys of the Grand Bank were conducted by the FRV *A. T. Cameron* (ATC) using a two bridle Yankee 41.5 otter trawl rigged with rubber disk footgear. In 1983, this trawl was replaced by the three bridle Engel 145 Hi-Lift otter trawl rigged with large steel bobbin footgear and the *A.T. Cameron* was replaced by the FRV *Wilfred Templeman* (WT). Occasionally the *W. Templeman's* sister ship, the FRV *Alfred Needler* (AN) took part in the surveys. In 1995, the old standard Engel trawl was replaced by a three bridle Campelen 1800 shrimp trawl rigged with rockhopper footgear (see Figs. 2-4; Table 1). The Yankee and the Engel trawls were both towed at 3.5 kt and the Campelen is towed at 3.0 kts (see McCallum and Walsh 1996 for details). The Campelen trawl surveys of the Grand Bank began in the fall of 1995 aboard the *W. Templeman*. The Campelen trawl also replaced the Yankee 41 shrimp trawl used in the fall juvenile groundfish surveys from 1985-94 (McCallum and Walsh 1996). Since 1993, the geometry and performance of all bottom trawl surveys have been monitored by Scanmar trawl mounted acoustic instrumentation (McCallum and Walsh 1999).

Data from 1971-82 time period has not been converted to Campelen trawl units and can be found in the 1997 assessment paper (see Walsh et al. 1997 for details). Conversion factors have been derived from comparative fishing

trials to convert the 1984-95 spring and 1990-94 Engel trawl yellowtail flounder survey data into Campelen trawl units and are presented in Walsh et al. (1998a, 1998b). To date, conversion factors for yellowtail flounder have not been derived for either the 1971-82 time series nor the 1985-94 juvenile groundfish series.

All species are separated, counted and weighed for every trawl haul. From each haul a sample or a sub-sample is taken to collect biological data on size, age, maturity and feeding for all commercial species. The catches are standardized to distance towed.

Results

In all years and in both time series, the majority of yellowtail flounder were caught in less than 100 m on the Grand Bank; however, small catches have been taken in deep waters along the slope edge in Div. 3O. The relationship between distribution, depth and temperature is discussed in Simpson and Walsh (1999).

A) Spring groundfish surveys 1984-98

Tables 2 to 7 give the survey catch rates in the form of stratified mean number and weight-per-tow by stratum. Tables 8-15 show abundance and biomass per stratum, along with confidence limits, for stock size estimates in Div. 3L, 3N, and 3O, respectively, and a combined Div. 3LNO estimate for the time period 1984-97. Figures 5 and 6 show plots of the abundance and biomass estimates from surveys during the 1984-98 period.

Abundance trends: Tables 8-10 and Figure 5 show the population abundance trends by Division from 1984-98, with 95% confidence intervals.

In Div. 3L, there has been a continuous decline from a high of 50 million fish in 1985 to “0.0” abundance in 1995. Since 1996 yellowtail have again been caught in this division and for the 1996-98 period the population size has fluctuated around an average value of 1.8 million fish; still much lower than the 1984-85 average of 48 million fish.

In Div. 3N, for the period of 1984-88, the population size decreased from a high of 435 million fish in 1984 to 135 million fish in 1988, increased almost 4 times to a high of 478 million fish in 1989, probably due to the strong 1985 and 1986 year-classes. From 1990 the survey abundance again declined continuously to a low of 126 million fish in 1994. In 1995, there was a small increase in population size followed by a 3 fold increase in 1996 to 475 million fish. This increase continued gradually from 1997-98 reaching the highest value in the time series at 572 million fish.

In Div. 3O, the abundance fluctuated around an average level of 77 million fish from 1984-87 and then began to decline gradually to 28 million fish in 1992. In 1993, the population estimate of 101 million was almost 4 times that of 1992, and in 1994 and 1995 the population abundance again dropped back to a level in line with the 1992 estimate. This anomalously high estimate in 1993 appears to be due mainly to the high catch rates in stratum 352 and is reflected in the high variability around the estimate (see Fig. 5). In 1996 the population size again showed a dramatic increase of almost 6 times the average of 1994-95 estimate of 25 million fish. Between 1996 and 1998 the population has fluctuated around an average size of 153 million fish. (Table 10; Fig 5).

Div. 3LNO: Table 11 presents the total population estimate for the combined divisions. Overall the stock showed a decline from 544 million fish in 1984 to 148 million fish in 1994. Since 1995, the population estimate began to rebound from this decline and increased dramatically from 187 million fish to a high of 734 million fish in 1998. This large increase in population abundance from 1996 to 1998 is partially explained by the high efficiency of the “new” survey trawl, introduced in the fall of 1995, in catching juveniles and young adults when compared to the “old” standard gear and is also reflected in the size and age composition for those years.

Biomass trends: Tables 12-15 and Figure 6 shows the trends in survey biomass and associated 95% confidence intervals from 1984-98

In Div. 3L, the biomass index has declined steadily from about 22,000 t in 1984 to “0.0” t in 1995 and since then the stock has shown a marginal increase to stabilize at an average biomass level of 500 t (Table 12; Fig. 6A).

In Div. 3N, the majority of the stock is distributed in and around the Southeast Shoal area (Fig 1). The biomass index declined gradually from 168,000 t in 1984 to 46,000 tons 1994. After a 20% increase in 1995 the biomass jumped by 44% to 104 000 t and then continued increasing to a high of 144,000 t in 1998 (Table 13; Fig. 6A). In 1998, 37% of this biomass was found in strata 376 and 360 which straddle the Canadian 200 mile limit zone and extend into the Regulatory Area in Div. 3N.

In Div. 3O¹, the biomass index show moderate fluctuations around an average value of 27,000 t for the period 1984-92, increasing to 42,000 t in 1993 and then declining to an average of 11,000 t during the 1994-95 period. In 1996, the survey biomass dramatically increased 6 fold to 71,000 t and has since declined to an average value of 56,000 t for the 1997 and 1998 period (Table 14; Fig 6A). Whether these fluctuations are related to movement between Div. 3N and 3O is unknown. In 1998, 28% of the biomass was located in stratum 353 which is straddled by the transboundary line

Div. 3LNO, The majority of the survey biomass is found in Division 3N and since 1989 there has been negligible amounts in Division 3L. Table 15 and Figure 6B show the cumulative biomass of all divisions for the time period 1984 to 1998. Total stock biomass had been steadily declining from a high of 218,000 t in 1984 to 56,000 t in 1994. In 1995, biomass levels increased by 21% followed by a 60% increase in 1996. Between 1996 and 1997 the stock remained stable at 175,000 t and then again increased in 1998 by 14% to a present level of 202,000 t.

B) Fall groundfish surveys, 1990-98

Tables 16-21 show the survey catch rates in the form of stratified mean number and weight-per -tow by stratum and division. Tables 22-29 show abundance and biomass per stratum, along with confidence intervals, for Div. 3L, 3N, and 3O, respectively, and a combined Div. 3LNO estimate for the time period 1990-98. Figures 7 and 8 shows plots of the abundance and biomass estimates by division from 1990-98.

Abundance trends: Tables 22-25 and Figure 7 show the abundance trends by Division up to 1998, with 95% confidence intervals.

In Div 3L, population size decreased from 4 million fish in 1990 to 0.1 million in 1994. From 1995 the population size has shown an increase from approximately 4 million fish to an average level of 6 million fish for the 1996-97 period and then doubled in size to 13 million fish in 1998 (Table 22; Fig. 7). In the 1998 survey, these fish were found in three strata (350, 363 and 372) in depths less than 91 m similar to strata occupied in the mid 1980s as determined from the spring surveys.

In Div. 3N from 1990-94 the survey abundance fluctuated around an average size of 222 million fish. In 1995 survey abundance increased by 49% and continued to increase gradually to a high of 632 million fish (Table 23; Fig 7).

In Div. 3O, there has been no discernible trend in the data for the period 1990-96 and the population level fluctuated around an average size of 55 million fish (Table 24; Fig 7). In 1997, the population size almost tripled to 159 million fish and began an upward increasing trends to a high of 183 million fish in 1998.

In Div 3LNO, the overall population size fluctuated around an average level of 273 million fish from 1990-94 then doubled in size in 1995 to 579 million fish. Since then the population has increase to a high of 819 million fish in 1998, the largest in the time series (Table 25).

Biomass trends: Tables 26 to 29 and Figure 8 show the trends in survey biomass and 95% confidence intervals.

In Div. 3L, the biomass has shown a decrease from 1990 level of 2,000 t to "0.0 t" in 1994. Noteworthy is that a 0.0 t biomass was also estimated for the 1995 spring series. From 1995-97 the stock fluctuated around an average level of 1,700 t and then increases by a factor of 4 to 5 000t (Table 26; Fig 8A).

1 In the 1998 assessment of this stock (Walsh et al. 1998) the estimates for Div 3O were slightly lower because of an error which resulted in the deletion of stratum 340 in all years. This error has been corrected.

In Div. 3N, similar to the spring surveys, the majority of the stock is found in this Division. From 1990-92 the stock size has shown an upward increasing trend to a high of 174,000 t in 1998 (Table 27; Fig 8A)

In Div. 3O, the survey biomass index, in Table 28, showed no obvious trend from 1990-96, fluctuating around an average level of 20,000 t. In 1997, the biomass almost tripled in size and along with the 1998 estimates remained stable at an average level of 55,000 t (Table 28; Fig 8A). Both estimates of the 1997 and 1998 are close in agreement with the spring estimate for those years. In this Division, 54% of the biomass was found in stratum 352 in 1998, similar to other years and to the spring time series.

In Div. 3LNO, similar to the spring surveys the majority of the stock is in Division 3N. Since 1993, when the survey biomass was estimated at 113, 000 t, there has been an increasing upward trend to 1998. From 1996 to 1997, the biomass increased by 40% and reached its highest point in the time series at 232,000 t in 1998 (Table 29; Fig 8B). In the spring series the upward trend began in 1995.

Distribution analysis

Figures 9 and 10 show the standard number and weight of individual fishing sets using the Campelen trawl in the Canadian spring and fall surveys beginning in the fall of 1995. In all surveys, yellowtail are most abundant in and around the Southeast Shoal in Div. 3N (Fig. 1), straddling the Canadian 200 mile limit and extending into the Regulatory Area confirming earlier descriptions of distribution (Walsh 1992; Walsh et al. 1999). Starting in the spring of 1997, the population of yellowtail flounder appears to be expanding toward the northern part of the bank. Yellowtail flounder appear to be more aggregated in fall and, with the exception of the fall of 1996, and more distributed into the Regulatory Area than in the spring.

References

- Doubleday, W.B. 1981 Manual on groundfish surveys in the Northwest Atlantic. NAFO Sci. Coun. Studies 2:55p.
- McCallum, B.R and S.J Walsh 1996. Groundfish survey trawls used at the Northwest Atlantic Fisheries Centre, 1971-present. NAFO SCR Doc. 96/50:18p
- McCallum, B.R and S.J Walsh 1999. Performance of the Campelen 1800 shrimp trawl during annual Canadian bottom trawl surveys of Subarea 2J + Divisions 3KLMNO, 3PS and 3LNO from 1995-1998. NAFO SCR Doc. 99/??
- Simpson, M and S. J. Walsh 1999. Spatial variation in distribution and abundance of yellowtail flounder in NAFO Divisions 3LNO using geostatistics. NAFO SCR Doc. 99/60
- Walsh, S.J. 1992. Factors influencing distribution of juvenile yellowtail flounder (*Limanda ferruginea*) on the Grand Bank of Newfoundland Neth. J. Sea Res.29:193-203
- Walsh, S.J, D. Orr and W.B. Brodie 1998. Conversion factors for yellowtail flounder survey indices derived from comparative fishing trials between the Engel 145 otter trawl and the Campelen 1800 shrimp trawl. NAFO SCR Doc. 98/60: 10p.
- Walsh, S.J, W.B. Brodie, M.J. Morgan, W.R. Bowering, D. Orr, and M.Veitch 1997 An Assessment of the Grand Bank Yellowtail Flounder Stock in NAFO Divisions 3LNO. NAFO SCR Doc. 97/72:54p
- Walsh, S.J, W.B. Brodie, M.Veitch, D. Orr, C. McFadden, and D. Maddock Parsons 1998 An Assessment of the Grand Bank Yellowtail Flounder Stock in NAFO Divisions 3LNO. NAFO SCR Doc. 98/72:78p
- Walsh, S.J., K.S. Whalen and M. Simpson 1999. Preliminary analysis of spatial and temporal variation in the distribution of juvenile yellowtail flounder on the Grand Bank: Investigating the methodology. NAFO SCR Doc. 99/59

Table 1. Trawl design, rigging and geometry of Campelen 1800 shrimp trawl used in annual bottom trawl surveys (Adopted from McCallum and Walsh 1996).

Parameter	Measurement
<i>Rigging</i>	
Doors	4.3m/1400 kg
Sweeps (m)	6.1
Bridles (m)	40
Buoyancy (kg)	226.5
Headline (m)	29.5
Fishing line (m)	19.5
<i>Footgear</i>	
Length (m)	35.6
Material	102 rubber disks (rockhopper)
Weight in air (kg)	501.3
Size (diameter cm)	35
<i>Mesh Size (mm)</i>	
Wings/square	80/60
Bellies	60/44
Codend	44
Liner	12.7
Material	Polyethelylene
<i>Geometry</i>	
Doorspread (m)	45 to 55
Wingspread (m)	15 to 17
Opening (m)	4 to 5
Towing speed (knots)	3.0
<i>Swept Area Abundance Model</i>	
Tow duration (min)	15
Tow distance (nm)	0.8
Average wingspread	18.23
Catchability coefficient	1.0
Swept area (m ²)	0.00727

Table 2. Mean Number per set of Yellowtail Flounder by stratum, Div 3L - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 28	1985 WT 28-30	1986 WT 48	1987 WT 58-60	1988 WT 70,71	1989 WT 82,83	1990 WT 96	1991 WT 106,107	1992 WT 120-122	1993 WT 137,138	1994 WT 152-154	1995 WT 169,170	1996 WT 189-191	1997 WT 205-208	1998 WT221-24
57-92	350	284,889.0	3.2	7.4	4.4	1.3	2.8	1.4	0.3	1.5	0.1	0.0	0.1	0.0	1.6	0.0	0.0
	363	244,858.7	45.6	27.6	14.5	13.1	9.9	3.4	7.6	1.3	0.2	0.0	0.0	0.0	4.4	1.0	0.0
	371	154,206.0		0.7	0.7	0.0	0.8	0.2	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	
	372	338,400.3	96.6	117.1	62.0	24.4	13.9	19.5	8.0	4.0	0.6	0.7	0.1	0.0	2.5	2.4	5.1
	384	154,068.4		7.7	2.5	1.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
93-183	328	208,955.3	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0
	341	216,521.2	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	343	72,219.6		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	348	291,629.5		0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	349	290,804.1	0.2	0.1	2.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
	364	387,509.6	1.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	365	143,201.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	370	181,580.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	385	324,093.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	390	203,728.0		0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	344	205,516.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	347	135,222.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	366	191,760.2		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
	369	132,196.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	386	135,222.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	389	112,937.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	391	38,792.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
275-366	345	196,987.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	346	118,990.3		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
	368	45,945.4		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
	387	98,768.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	388	49,659.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	392	19,946.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
367-549	729	25,586.4		0.0						0.0		0.0	0.0	0.0	0.0	0.0	0.0
	731	29,713.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	733	64,378.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	735	37,416.6		0.0							0.0	0.0	0.0	0.0	0.0	0.0	
550-731	730	23,385.4		0.0						0.0		0.0	0.0	0.0	0.0	0.0	0.0
	732	31,776.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	734	31,363.9		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	736	24,073.2		0.0							0.0	0.0	0.0	0.0	0.0	0.0	
732-914	737	31,226.4											0.0				
	741	30,676.1											0.0				
	745	47,871.3											0.0				
	748	21,872.2											0.0				
Mean No. (sets)			22.1(37)	9.4(221)	5.3(211)	2.4(181)	1.6(154)	1.6(205)	0.93(156)	0.45(143)	0.05(178)	0.05(181)	0.02(160)	0(151)	0.5(188)	0.2(158)	0.3(155)
Upper C.I.			39.3	14.6	7.8	3.6	2.4	2.6	1.6	0.7	0.1	0.1	0.0	0.0	0.7	0.4	0.8
Lower C.I.			5.0	4.2	2.8	1.2	0.9	0.5	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.1	-0.2

Table 3. Mean Number per set of Yellowtail Flounder by stratum, Div 3N - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27	1985 AN 43 WT 29	1986 WT 47	1987 WT 58,59	1988 WT 70	1989 WT 82	1990 WT 95,96	1991 WT 106	1992 WT 119,120	1993 WT 136,137	1994 WT 152,153	1995 WT 168,169	1996 WT 189	1997 WT 205,206	1998 WT221-24
<=56	375	219,134.8	373.6	165.6	409.6	208.3	118.5	82.3	259.5	21.5	340.3	135.7	29.0	139.7	603.3	487.2	411.6
	376	206,204.1	91.5	220.3	162.3	719.6	125.7	977.0	521.3	764.1	183.7	35.0	2.3	10.8	67.8	1,029.8	524.8
57-92	360	411,582.8	289.7	155.3	32.3	33.0	7.0	480.3	91.7	50.1	140.2	41.9	6.8	133.2	364.7	126.2	374.4
	361	254,900.7	338.6	171.0	101.4	130.1	166.6	142.3	293.3	242.9	63.6	237.9	451.0	276.7	453.6	427.2	455.7
	362	346,653.9	227.1	74.4	159.9	103.3	73.3	50.9	79.4	53.7	7.5	86.8	2.3	0.6	169.3	210.5	300.0
	373	346,653.9	122.0	58.1	28.2	38.7	34.6	20.8	2.5	13.4	0.1	0.1	3.0	0.0	7.8	1.9	11.1
	374	128,069.4	59.7	38.5	14.8	7.6	4.2	0.2	1.8	0.4	1.0	0.0	0.0	3.3	15.3	10.7	5.8
	383	92,716.2	3.7	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93-183	359	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
	377	13,756.1	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	358	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	381	25,036.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275-366	357	22,560.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	379	14,581.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	380	15,957.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	723	21,322.0								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	725	14,443.9								0.0		0.0	0.0	0.0	0.0	0.0	0.0
	727	22,009.8								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	724	17,057.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5								0.0	0.0	0.0	0.0	0.0	0.0		0.0
732-914	752	18,433.2											0.0				
	756	14,581.5											0.0				
	760	21,184.4											0.0				
Mean No. (sets)			189.7(61)	104.6(85)	100.0(101)	128.1(91)	58.9(77)	208.4(94)	133.1(85)	111.7(93)	79.3(94)	60.4(85)	51.5(76)	66.1(89)	198.0(82)	233.2(71)	240.4(88)
Upper C.I.			251.2	135.1	141.7	202.3	86.3	335.7	206.4	165.4	127.0	103.6	89.1	101.0	254.8	349.9	324.1
Lower C.I.			128.2	74.1	58.3	53.9	31.6	81.2	59.9	57.9	31.6	17.1	13.8	31.3	141.1	116.5	156.8

Table 4. Mean Number per set of Yellowtail Flounder by stratum, Div 3O -Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27	1985 AN 43	1986 WT 47	1987 WT 58	1988 WT 70	1989 WT 82	1990 WT 94,95	1991 WT 105	1992 WT 119,120	1993 WT 136	1994 WT 152	1995 WT 168	1996 WT 188,189	1997 WT 204,205	1998 WT221-24
57-92	330	287,365.1	1.0	14.8	5.0	1.5	1.1	2.0	1.2	9.2	0.0	0.1	0.0	0.0	1.8	0.6	0.5
	331	62,727.9	50.0	62.3	5.3	26.5	9.0	25.0		1.0	0.0	2.0	5.5	0.5	1.5	5.3	1.0
	338	261,090.9	30.0	22.2	10.6	4.1	48.9	13.2	11.3	17.1	18.0	13.0	5.0	10.0	66.0	68.1	54.3
	340	236,054.8	6.0	13.6	16.3	40.8	10.0	6.4	17.7	5.4	3.2	2.8	0.0	0.2	0.0	9.0	1.6
	351	346,653.9	80.0	85.6	80.7	39.5	75.2	43.5	52.4	24.5	7.2	5.8	0.3	0.8	28.5	65.3	50.7
	352	354,907.6	63.7	55.6	73.0	103.4	47.2	50.7	77.9	78.4	50.8	226.1	55.6	36.0	312.6	177.4	246.3
	353	17,6353.31	2.0	98.5	32.1	148.5	3.0	9.6	20.7	26.7	10.0	66.5	1.8	70.2	122.2	175.0	190.6
93-183	329	236,742.6	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.0	0.0	0.0	0.0
	332	144,026.5	0.0	0.6	14.2	9.2	0.3	30.4	1.8	1.3	1.0	13.3	0.3	1.5	6.5	1.3	7.5
	337	130,407.9	0.0	0.0	1.0	1.2	2.3	2.8	0.0	0.0	1.0	7.0	0.3	0.5	3.0	15.9	0.5
	339	80,473.2	1.0	0.3	0.3	0.3	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	354	65,204.0	0.0	1.0	0.0	0.0	0.0	0.5	0.0	3.0	0.0	0.0	0.0	0.7	2.0	0.5	0.0
184-274	355	14,168.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0
	333	20,771.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	4.9	0.0
275-366	334	12,655.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	1.5	0.0	0.0	0.0
	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	6.3	0.0
	356	8,391.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
367-549	717	12,793.2								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	719	10,454.6								0.0	0.0	0.0	0.0	0.0	0.8	3.5	0.0
	721	10,454.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	718	15,269.3								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	720	14,443.9								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	722	12,793.2								0.0	0.0	0.0	0.0	6.5	0.0	4.9	0.0
732-914	764	14,443.9											0.0				
	772	18,570.8											0.0				
Mean No. (sets)			27.9(52)	34.2(93)	28.5(95)	36.9(91)	59.7(77)	18.9(101)	23.9(84)	19.7(107)	11.0(91)	39.8(75)	8.6(76)	11.2(80)	70.6(70)	54.6(75)	60.9(93)
Upper C.I.			45.8	46.2	39.5	52.6	85.2	26.1	36.5	30.0	15.9	80.5	17.6	19.2	96.3	89.1	83.4
Lower C.I.			9.9	22.1	17.5	21.2	34.2	11.8	11.2	9.3	6.1	-0.9	-0.4	3.1	44.9	20.1	38.3

Table 5. Mean Weight (Kg) per set of Yellowtail Flounder by stratum, Div 3L - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AK 28	1985 WT 28-30	1986 WT 49	1987 WT 58-60	1988 WT 70, 71	1989 WT 82, 83	1990 WT 96	1991 WT 106, 107	1992 WT 120-122	1993 WT 137, 138	1994 WT 152-154	1995 WT 169, 170	1996 WT 189-191	1997 WT 205-208	1998 WT 221-224
57-92	350	284,889.0	1.4	3.5	2.0	0.6	1.4	0.6	0.2	0.7	0.1	0.0	0.1	0.0	0.7	0.0	0.0
	363	244,888.7	22.2	12.6	6.9	6.3	4.5	1.6	3.4	0.6	0.1	0.0	0.0	0.0	2.2	0.5	0.0
	371	154,206.0		0.4	0.3	0.0	0.4	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	372	309,400.3	46.5	48.2	28.7	11.2	6.2	9.9	4.0	2.0	0.3	0.4	0.1	0.0	1.1	0.7	1.4
	384	154,088.4		3.7	1.5	1.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
93-183	328	208,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
	341	216,521.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	90,473.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	343	72,219.6		0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	348	291,629.5		0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	349	290,804.1	0.1	0.0	1.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	364	387,509.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	365	143,201.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	370	181,580.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	385	324,093.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	390	203,728.0		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	344	205,516.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	347	135,222.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	366	191,760.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	369	132,196.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	386	135,222.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	389	112,937.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	391	38,792.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
275-366	345	196,987.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	346	118,990.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	368	45,845.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	387	98,768.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	388	49,668.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	392	19,846.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	729	25,586.4		0.0						0.0		0.0	0.0	0.0	0.0	0.0	0.0
	731	29,713.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	733	64,378.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	735	37,416.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
550-731	730	23,365.4		0.0						0.0		0.0	0.0	0.0	0.0	0.0	0.0
	732	31,776.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	734	31,363.9		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	736	24,073.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
732-914	737	31,226.4											0.0				
	741	30,676.1											0.0				
	745	47,871.3											0.0				
	748	21,872.2											0.0				
Mean Wt (No.sets)			10.7(37)	4.0(221)	2.5(211)	1.1(181)	0.7(154)	0.8(205)	0.44(156)	0.22(143)	.03(178)	.02(181)	0.01(160)	0.0(161)	0.2(188)	0.1(158)	0.1(155)
Upper C.I.			19.0	6.0	3.6	1.7	1.1	1.3	0.8	0.4	0.1	0.1	0.0	0.0	0.3	0.1	0.2
Lower C.I.			2.3	1.9	1.4	6.9	4.0	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	-0.1

Table 6. Mean Weight (Kg) per set of Yellowtail Flounder by stratum, Div 3N - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27	1985 AN 43 WT 29	1986 WT 47	1987 WT 58,59	1988 WT 70	1989 WT 82	1990 WT 95,96	1991 WT 106	1992 WT 119,120	1993 WT 136,137	1994 WT 152,153	1995 WT 168,169	1996 WT 189	1997 WT 205,206	1998 WT 221-24
<=56	375	219,134.6	150.0	78.2	161.6	103.8	50.6	21.2	84.3	11.7	118.4	49.5	12.1	59.7	78.7	87.5	90.8
	376	206,204.1	30.0	66.8	66.8	78.7	12.6	121.7	70.9	143.7	22.4	5.1	0.6	2.8	5.4	123.6	99.6
57-92	360	411,582.8	106.6	46.3	11.2	7.4	2.5	61.0	12.2	12.1	25.3	8.8	2.5	39.6	68.1	93.1	77.8
	361	254,900.7	126.7	59.9	36.3	56.1	70.2	43.5	106.0	82.3	29.6	82.5	163.9	106.5	106.1	102.5	122.4
	362	346,663.9	86.8	32.1	61.2	40.3	35.1	24.6	30.3	24.4	2.9	40.9	1.3	0.3	83.5	97.1	111.9
	373	346,663.9	52.9	26.4	13.9	17.9	18.2	11.1	0.9	7.1	0.0	0.0	0.9	0.0	1.9	1.0	3.2
	374	126,069.4	30.1	21.1	8.9	4.3	2.3	0.1	0.6	0.2	0.6	0.0	0.0	1.1	7.1	3.0	1.2
	383	92,716.2	2.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93-183	359	67,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
	377	13,756.1	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	358	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	381	25,036.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275-365	357	22,660.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	379	14,681.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	380	15,957.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	723	21,322.0								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	725	14,443.9								0.0		0.0	0.0	0.0	0.0	0.0	0.0
	727	22,009.8								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	724	17,057.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5								0.0	0.0	0.0	0.0	0.0	0.0		0.0
732-914	752	19,433.2											0.0				
	756	14,681.5											0.0				
	760	21,184.4											0.0				
Mean wt (No.sets)			73.1(61)	36.4(85)	41.5(101)	34.1(91)	22.4(77)	34.1(94)	33.0(85)	28.8(93)	20.8(94)	21.1(85)	18.9(76)	24.1(89)	43.3(82)	51.0(71)	59.8(88)
Upper C.I.			97.3	48.7	58.9	47.8	31.1	60.3	47.1	39.7	33.2	36.0	33.2	36.3	64.0	72.2	80.2
Lower C.I.			48.9	28.1	24.0	20.5	13.7	18.0	18.9	17.9	8.4	6.2	4.6	11.9	32.6	29.8	39.5

Table 7. Mean Weight (Kg) per set of Yellowtail Flounder by stratum, Div 30 - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27	1985 AN 43	1986 WT 47	1987 WT 58	1988 WT 70	1989 WT 82	1990 WT 94,95	1991 WT 105	1992 WT 119,120	1993 WT 136	1994 WT 152	1995 WT 168	1996 WT 188,189	1997 WT 204,205	1998 WT221-24
57-92	330	287,365.1	0.6	6.7	2.6	0.7	0.6	1.1	0.7	4.0	0.0	0.1	0.0	0.0	0.9	0.2	0.2
	331	62,727.9	21.7	29.5	2.8	13.2	4.6	14.8		0.6	0.0	1.4	2.8	0.2	0.5	1.6	0.0
	338	261,090.9	12.7	10.6	5.4	1.9	19.6	6.4	5.6	5.1	8.1	5.3	2.7	4.9	30.8	24.8	21.2
	340	236,054.8	2.9	6.6	7.5	18.3	4.7	3.2	8.5	2.7	1.6	1.5	0.0	0.0	0.0	3.4	0.8
	361	346,653.9	35.8	37.5	33.8	17.3	32.4	20.0	24.2	11.6	3.2	2.4	0.1	0.3	13.6	26.6	18.0
	362	364,907.6	28.1	24.5	30.0	42.9	21.3	22.7	31.5	36.3	19.9	93.0	22.7	15.4	129.7	72.0	83.5
	363	17,6363.31	1.1	43.2	15.9	75.7	1.6	4.9	9.9	13.0	4.6	29.8	1.1	31.8	60.5	55.3	90.8
93-183	329	236,742.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	332	144,026.5	0.0	0.3	7.7	5.0	0.1	11.9	0.8	0.7	0.5	6.2	0.2	0.9	3.5	0.5	2.3
	337	130,407.9	0.0	0.0	0.6	0.6	1.0	1.7	0.0	0.0	0.4	4.4	0.2	0.2	2.0	6.4	0.2
	339	80,473.2	0.6	0.2	0.1	0.2	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	65,204.0	0.0	0.6	0.0	0.0	0.0	0.1	0.0	1.6	0.0	0.0	0.0	0.3	0.9	0.4	0.0
184-274	365	14,168.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0
	333	20,771.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	2.6	0.0
275-365	334	12,656.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.9	0.0	0.0	0.0
	335	7,876.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	3.1	0.0
	366	8,391.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
367-549	717	12,793.2								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	719	10,454.6								0.0	0.0	0.0	0.0	0.0	0.5	2.0	0.0
	721	10,454.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	718	15,269.3								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	720	14,443.9								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	722	12,793.2								0.0	0.0	0.0	0.0	3.9	0.0	2.3	0.0
732-914	764	14,443.9											0.0				
	772	18,570.8											0.0				
Mean wt (No.sets)			11.4(52)	15.2(52)	12.4(95)	16.7(91)	10.5(77)	8.7(101)	10.5(84)	9.1(107)	4.6(86)	16.7(75)	3.7(76)	4.9(80)	30.5(80)	20.8(75)	22.9(93)
Upper C.I.			18.5	20.6	16.8	23.9	14.7	11.6	15.8	14.3	6.7	33.3	7.1	8.7	41.6	32.5	31.6
Lower C.I.			4.4	9.9	7.9	9.5	6.3	5.9	5.2	4.1	2.4	0.1	0.2	1.3	19.4	9.2	14.1

Table 8. Abundance (millions) of Yellowtail Flounder by stratum, Div 3L - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 26	1985 WT 26-30	1986 WT 40	1987 WT 50-60	1988 WT 70, 71	1989 WT 82, 83	1990 WT 96	1991 WT 106, 107	1992 WT 120, 122	1993 WT 137, 138	1994 WT 152, 154	1995 WT 169, 170	1996 WT 188, 191	1997 WT 205, 208	1998 WT 221, 24
30-56	784	36966.37															
57-92	350	284 889 0	0.9	2.1	1.2	0.4	0.8	0.4	0.1	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0
	363	244 858 7	11.2	6.8	3.6	3.2	2.4	0.8	1.9	0.3	0.1	0.0	0.0	0.0	1.1	0.2	0.0
	371	154 206 0		0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	
	372	338 400 3	32.7	39.6	21.0	8.3	4.7	6.6	2.7	1.4	0.2	0.2	0.0	0.0	0.8	0.8	1.5
	384	154 068 4		1.2	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
93-183	328	208 955 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	341	216 521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	80 473.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	343	72 219.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	348	291 629 5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	349	290 804 1	0.0	0.0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	367 609 6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	365	143 201.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	370	181 580 6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	385	324 093 9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	390	203 728 0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	344	205 616 3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	347	135 222 6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	366	191 780 2		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
	369	132 196 2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	386	135 222 6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	389	112 837 7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	391	38 792.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
275-366	345	196 987 5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	346	118 990 3		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
	368	45 845.4		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
	387	98 788.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	388	49 659.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	392	19 846.4		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	729	25 696.4		0.0					0.0			0.0	0.0	0.0	0.0	0.0	0.0
	731	29 713.2		0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	733	64 378.6		0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	735	37 416.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	730	23 385.4		0.0					0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
	732	31 776.6		0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	734	31 353.9		0.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	736	24 073.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
732-914	737	31 228.4											0.0				
	741	30 676.1											0.0				
	745	47 871.3											0.0				
	748	21 872.2											0.0				
Abundance (millions)			45.4	49.9	26.9	12.3	8.1	7.9	4.7	2.2	0.3	0.2	0.1	0.0	2.5	1.2	1.6
Upper C.I.			80.7	77.5	39.7	18.4	11.9	13.2	8.3	3.6	0.7	0.7	0.3	0.0	3.8	2.0	4.3
Lower C.I.			10.2	22.3	14.2	6.2	4.3	2.7	1.1	0.8	-0.1	-0.2	0.0	0.0	1.2	0.4	-1.1

Table 9. Abundance (millions) of Yellowtail Flounder by stratum, Div 3N - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27	1985 AN 43 WT 29	1986 WT 47	1987 WT 58,59	1988 WT 70	1989 WT 82	1990 WT 95,96	1991 WT 106	1992 WT 119,120	1993 WT 136,137	1994 WT 152,153	1995 WT 168,169	1996 WT 189	1997 WT 205,206	1998 WT221-24
<=56	375	219,134.8	81.9	36.3	89.8	46.6	26.0	18.0	66.9	4.7	74.6	29.7	6.4	30.6	132.2	106.8	90.2
	376	206,204.1	18.9	45.4	33.5	148.4	25.9	201.5	107.5	157.6	37.9	7.2	0.5	2.2	14.0	212.3	109.2
57-92	380	411,582.8	119.2	63.9	13.3	13.6	2.9	197.7	37.7	20.6	67.7	17.2	2.8	54.8	150.1	51.9	154.1
	361	254,900.7	86.3	43.6	25.8	33.2	42.5	36.3	74.8	61.9	16.2	60.6	115.0	70.5	115.6	108.9	116.2
	362	346,663.9	78.7	26.8	55.4	36.8	25.4	17.7	27.6	18.6	2.6	30.1	0.8	0.2	58.7	73.0	104.0
	373	346,663.9	42.3	20.1	9.8	13.4	12.0	7.2	0.9	4.6	0.0	0.0	1.0	0.0	2.7	0.6	3.8
	374	128,069.4	7.6	4.9	1.9	1.0	0.5	0.0	0.2	0.1	0.1	0.0	0.0	0.4	2.0	1.4	0.7
	383	92,716.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93-183	359	67,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	377	13,756.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	358	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	381	25,036.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275-365	357	22,660.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	379	14,681.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	380	15,957.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-649	723	21,322.0								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	725	14,443.9								0.0		0.0	0.0	0.0	0.0	0.0	0.0
	727	22,009.8								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
650-731	724	17,057.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5								0.0	0.0	0.0	0.0	0.0	0.0		0.0
732-914	752	18,433.2											0.0				
	756	14,681.5											0.0				
	760	21,184.4											0.0				
Abundance (millions)			435.3	240.1	229.5	291.0	135.3	478.3	305.5	268.1	189.2	145.0	126.4	158.8	475.3	554.9	577.2
Upper C.I.			576.6	310.0	325.1	459.6	198.0	770.4	473.6	397.2	303.0	248.8	218.8	242.5	611.8	832.5	778.1
Lower C.I.			294.1	170.1	133.9	122.5	72.6	186.2	137.4	139.0	76.3	41.1	34.0	76.1	338.8	277.3	376.4

Table 10. Abundance (millions) of Yellowtail Flounder by stratum, Div 30 - Spring

Depth	Stratum	No. of	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	AN 27	AN 43	WT 47	WT 58	WT 70	WT 82	WT 94,95	WT 105	WT 119,120	WT 136	WT 152	WT 168	WT 188,189	WT 204,205	WT221-224
(m)		Units															
57-92	330	287,365.1	0.3	4.3	1.4	0.4	0.3	0.6	0.3	2.6	0.0	0.0	0.0	0.0	0.5	0.2	0.1
	331	62,727.9	3.1	3.9	0.3	1.7	0.6	1.6		0.1	0.0	0.1	0.3	0.0	0.1	0.3	0.1
	338	261,090.9	7.8	5.8	2.8	1.1	12.8	3.4	2.9	4.5	4.7	3.4	1.3	2.6	17.2	17.8	14.2
	340	236,054.8	1.4	3.2	3.8	9.6	2.4	1.5	4.2	1.3	0.8	0.7	0.0	0.0	0.0	2.1	0.4
	351	346,653.9	27.7	29.7	28.0	13.7	26.1	15.1	18.2	8.5	2.5	2.0	0.1	0.3	9.9	22.7	17.6
	352	354,907.6	22.6	19.7	25.9	36.7	16.7	18.0	27.7	27.8	18.0	80.3	19.7	12.8	110.9	63.0	87.4
	353	17,6353.31	0.4	17.4	5.7	26.2	0.5	1.7	3.6	4.7	1.8	11.7	0.3	12.4	21.6	30.9	33.6
93-183	329	236,742.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	332	144,026.5	0.0	0.1	2.0	1.3	0.0	4.4	0.3	0.2	0.1	1.9	0.0	0.2	0.9	0.2	1.1
	337	130,407.9	0.0	0.0	0.1	0.2	0.3	0.4	0.0	0.0	0.1	0.9	0.0	0.1	0.4	2.1	0.1
	339	80,473.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	354	65,204.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0
184-274	355	14,168.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	333	20,771.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
275-366	334	12,655.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
	356	8,391.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	717	12,793.2								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	719	10,454.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	721	10,454.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	718	15,269.3								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	720	14,443.9								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	722	12,793.2								0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
732-914	764	14,443.9											0.0				
	772	18,570.8											0.0				
Abundance (millions)			63.5	84.1	70.1	90.9	57.3	46.7	57.3	50.0	28.0	101.1	21.9	28.5	161.7	139.4	154.5
Upper C.I.			103.4	113.8	97.2	129.5	82.7	64.2	87.6	76.3	40.4	204.4	44.7	49.1	222.7	227.5	211.7
Lower C.I.			23.5	54.5	43.0	52.3	31.9	29.2	26.9	23.6	15.6	-2.2	-1.0	8.0	100.6	51.4	97.3

Table 11. Abundance (millions) of Yellowtail Flounder by stratum, Div 3LN0 - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27-28	1985 AN 43 WT 28-30	1986 WT 47-48	1987 WT 58-60	1988 WT 70-71	1989 WT 82-83	1990 WT 94-96	1991 WT 105-107	1992 WT 119-122	1993 WT 136-138	1994 WT 152-154	1995 WT 168-170	1996 WT 188-191	1997 WT 204-208	1998 WT 221-224
<=56	375	219,134.8	81.9	36.3	89.8	45.6	26.0	18.0	56.9	4.7	74.6	29.7	6.4	30.6	132.2	106.8	90.2
	376	206,204.1	18.9	45.4	33.5	148.4	25.9	201.5	107.5	157.6	37.9	7.2	0.5	2.2	14.0	212.3	108.2
TOTAL			100.7	81.7	123.2	194.0	51.9	219.5	164.4	162.3	112.5	36.9	6.8	32.8	146.2	319.1	198.4
57-92	330	287,365.1	0.3	4.3	1.4	0.4	0.3	0.6	0.3	2.6	0.0	0.0	0.0	0.0	0.5	0.2	0.1
	331	62,727.9	3.1	3.9	0.3	1.7	0.6	1.6	0.1	0.0	0.0	0.1	0.3	0.0	0.1	0.3	0.1
	338	261,090.9	7.8	5.8	2.8	1.1	12.8	3.4	2.9	4.5	4.7	3.4	1.3	2.6	17.2	17.8	14.2
	340	296,054.8	1.4	3.2	3.8	9.6	2.4	1.5	4.2	1.3	0.8	0.7	0.0	0.0	0.0	2.1	0.4
	350	264,889.0	0.9	2.1	1.2	0.4	0.8	0.4	0.1	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0
	351	346,663.9	27.7	29.7	28.0	13.7	26.1	15.1	18.2	8.5	2.5	2.0	0.1	0.3	9.9	22.7	17.6
	352	354,907.6	22.6	19.7	25.9	36.7	16.7	18.0	27.7	27.8	18.0	80.3	19.7	12.8	110.9	63.0	87.4
	353	17,6353.31	0.4	17.4	5.7	26.2	0.5	1.7	3.6	4.7	1.8	11.7	0.3	12.4	21.6	30.9	33.6
	360	411,582.8	119.2	63.9	13.3	13.6	2.9	197.7	37.7	20.6	57.7	17.2	2.8	54.8	150.1	51.9	154.1
	361	254,900.7	86.3	43.6	25.8	33.2	42.5	36.3	74.8	61.9	16.2	60.6	115.0	70.5	115.6	108.9	116.2
	362	346,663.9	78.7	25.8	55.4	35.8	25.4	17.7	27.5	18.6	2.6	30.1	0.8	0.2	68.7	73.0	104.0
	363	244,858.7	11.2	6.8	3.6	3.2	2.4	0.8	1.9	0.3	0.1	0.0	0.0	0.0	1.1	0.2	0.0
	371	154,206.0		0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	
	372	338,400.3	32.7	39.6	21.0	8.3	4.7	6.6	2.7	1.4	0.2	0.2	0.0	0.0	0.8	0.8	1.7
	373	346,663.9	42.3	20.1	9.8	13.4	12.0	7.2	0.9	4.6	0.0	0.0	1.0	0.0	2.7	0.6	3.8
	374	128,069.4	7.6	4.9	1.9	1.0	0.5	0.0	0.2	0.1	0.1	0.0	0.0	0.4	2.0	1.4	0.7
	383	92,716.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	384	154,068.4		1.2	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TOTAL			442.7	292.1	200.4	198.5	150.7	308.6	202.7	157.4	104.7	206.5	141.5	154.1	491.7	373.9	533.9
93-183	328	208,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	329	236,742.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	332	144,026.5	0.0	0.1	2.0	1.3	0.0	4.4	0.3	0.2	0.1	1.9	0.0	0.2	0.9	0.2	1.1
	337	130,407.9	0.0	0.0	0.1	0.2	0.3	0.4	0.0	0.0	0.1	0.9	0.0	0.1	0.4	2.1	0.1
	339	80,473.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	341	216,521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	343	72,219.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	346	291,629.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	349	290,804.1	0.0	0.0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	354	85,204.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	359	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	387,608.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	365	143,201.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	370	181,580.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	377	13,756.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	385	324,093.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	390	203,728.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.7	0.3	2.9	1.7	0.5	4.8	0.4	0.5	0.3	2.9	0.1	0.3	1.5	2.3	1.2

Table 11 Con'd

[illegible]

Table 11 Con'd			1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Depth	Stratum	No. of															
Range		trawlable	AK 27,28	AN 43	WT 47,48	WT 58-60	WT 70,71	WT 82-83	WT 94-95	WT 105-107	WT 119-122	WT 135-138	WT 152-154	WT 168-170	WT 188-191	WT 204-208	WT 221-224
(m)		Units		WT 25-30													
650-731	718	15,289.3								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	720	14,443.9								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	722	12,793.2								0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
	724	17,057.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	730	23,385.4		0.0						0.0		0.0	0.0	0.0	0.0	0.0	0.0
	732	31,776.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	734	31,363.9		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	736	24,073.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL				0.0						0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
732-914	737	31,226.4											0.0				
	741	30,876.1											0.0				
	745	47,871.3											0.0				
	748	21,872.2											0.0				
	752	18,433.2											0.0				
	756	14,581.5											0.0				
	760	21,184.4											0.0				
	764	14,443.9											0.0				
	772	18,570.8											0.0				
TOTAL													0.0				0.0
Abundance (millions)			544.2	374.1	326.5	394.2	203.1	532.9	367.4	320.3	217.4	246.3	148.4	187.4	639.4	695.5	733.6
Upper C.I.			691.2	453.2	425.8	565.7	269.6	825.6	536.9	450.5	331.5	380.8	244.7	272.7	785.8	974.8	940.9
Lower C.I.			397.2	295.0	227.3	222.7	136.5	240.3	196.0	190.0	103.4	111.6	52.2	102.1	493.1	416.3	526.2

Table 12. Biomass estimates ('000t) of Yellowtail Flounder by stratum, Div 3L - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 28	1985 WY 28-30	1986 WT 46	1987 WT 58-60	1988 WT 70,71	1989 WT 82,83	1990 WT 96	1991 WT 106,107	1992 WT 120-122	1993 WT 137,138	1994 WT 152-154	1995 WT 169,170	1996 WT 189-191	1997 WT 205-208	1998 WT 221-24
57-92	350	264,889.0	0.4	1.0	0.6	0.2	0.4	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0
	363	244,858.7	5.4	3.1	1.7	1.6	1.1	0.4	0.8	0.1	0.0	0.0	0.0	0.0	0.5	0.1	0.0
	371	154,206.0		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	372	338,400.3	15.7	16.3	9.7	3.8	2.1	3.4	1.3	0.7	0.1	0.1	0.0	0.0	0.4	0.2	0.6
	384	154,068.4		0.6	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
93-183	328	208,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	341	216,521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	343	72,219.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	348	291,629.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	349	290,804.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	387,509.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	365	143,201.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	370	181,580.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	385	324,093.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	390	203,728.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	344	205,516.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	347	135,222.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	366	191,760.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	369	132,196.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	386	135,222.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	389	112,937.7		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	391	38,792.2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275-366	345	196,987.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	346	118,990.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	368	45,845.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	387	98,788.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	388	49,859.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	392	18,946.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	729	25,586.4		0.0						0.0		0.0	0.0	0.0	0.0	0.0	0.0
	731	29,713.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	733	64,378.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	735	37,416.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	730	23,386.4		0.0						0.0		0.0	0.0	0.0	0.0	0.0	0.0
	732	31,776.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	734	31,363.9		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	736	24,073.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
732-914	737	31,226.4											0.0				
	741	30,876.1											0.0				
	745	47,871.3											0.0				
	748	21,872.2											0.0				
Biomass ('000t)			21.9	21.1	12.6	5.8	3.7	4.0	2.2	1.1	0.2	0.1	0.0	0.0	1.1	0.5	0.5
Upper C.I.			38.9	32.0	18.3	8.5	5.4	6.8	4.0	1.8	0.4	0.3	0.1	0.0	1.7	0.8	1.3
Lower C.I.			4.8	10.2	6.8	3.1	2.1	1.2	0.5	0.4	-0.1	-0.1	0.0	0.0	0.5	0.1	-0.3

Table 13. Biomass estimates ('000t) of Yellowtail Flounder by stratum, Div 3N - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AK 27	1985 AK 43 WT 29	1986 WT 47	1987 WT 58,59	1988 WT 70	1989 WT 82	1990 WT 95,96	1991 WT 106	1992 WT 119,120	1993 WT 136,137	1994 WT 152,153	1995 WT 168,169	1996 WT 189	1997 WT 205,206	1998 WT221-24
<=55	375	219,134.8	32.9	17.1	39.8	22.8	11.1	4.6	18.5	2.6	25.9	10.8	2.7	13.1	17.3	19.2	19.9
	376	206,204.1	6.2	13.8	13.8	16.2	2.6	25.1	14.6	29.6	4.6	1.1	0.1	0.6	1.1	25.5	20.5
57-92	360	411,582.8	43.9	19.0	4.6	3.1	1.0	25.1	5.0	5.0	10.4	3.6	1.0	16.3	29.0	16.1	32.0
	361	254,900.7	32.3	16.3	9.8	14.8	17.9	11.1	26.8	21.0	7.5	21.0	41.8	27.7	27.1	26.1	31.2
	362	346,653.9	30.1	11.1	21.2	14.0	12.2	8.5	10.5	8.5	1.0	14.2	0.5	0.1	28.9	33.7	38.8
	373	346,653.9	18.3	9.1	4.8	6.2	6.3	3.8	0.3	2.5	0.0	0.0	0.3	0.0	0.6	0.3	1.1
	374	128,069.4	3.9	2.7	1.1	0.6	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.9	0.4	0.1
	383	92,716.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93-183	359	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	377	13,756.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184-274	358	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	381	25,036.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275-365	357	22,560.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	379	14,581.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	380	15,957.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	723	21,322.0							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	725	14,443.9							0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
	727	22,009.8							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	724	17,057.6							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5							0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
732-914	752	16,433.2											0.0				
	756	14,581.5											0.0				
	760	21,184.4											0.0				
Biomass ('000t)			167.7	88.2	95.1	77.5	51.4	78.3	75.7	69.1	49.6	50.8	46.3	57.9	103.9	121.3	143.7
Upper C.I.			223.2	111.9	135.2	108.5	71.4	115.4	106.1	95.3	79.1	86.5	81.5	87.2	129.7	171.7	192.6
Lower C.I.			112.1	64.5	55.1	46.6	31.4	41.2	43.3	42.9	20.1	15.0	11.2	28.6	78.2	70.9	94.8

Table 14. Biomass estimates ('000t) of Yellowtail Flounder by stratum, Div 30 - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27	1985 AN 43	1986 WT 47	1987 WT 58	1988 WT 70	1989 WT 82	1990 WT 94,95	1991 WT 105	1992 WT 119,120	1993 WT 136	1994 WT 152	1995 WT 168	1996 WT 188,189	1997 WT 204,205	1998 WT221-24
57-92	330	287,365.1	0.2	1.9	0.7	0.2	0.2	0.3	0.2	1.1	0.0	0.0	0.0	0.0	0.3	0.1	0.0
	331	62,727.9	1.4	1.9	0.2	0.8	0.3	0.9	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0
	338	261,090.9	3.3	2.8	1.4	0.5	5.1	1.7	1.4	1.3	2.1	1.4	0.7	1.3	8.0	6.5	5.5
	340	236,054.8	0.7	1.5	1.8	4.3	1.1	0.8	2.0	0.6	0.4	0.4	0.0	0.0	0.0	0.8	0.2
	351	346,653.9	12.4	13.0	11.7	6.0	11.2	6.9	8.4	4.0	1.1	0.8	0.0	0.1	4.7	9.2	6.2
	352	354,907.6	10.0	8.7	10.7	15.2	7.5	8.0	11.2	13.6	7.1	33.0	8.1	5.5	46.0	25.6	29.7
	353	17,6353.31	0.2	7.6	2.8	13.4	0.3	0.9	1.7	2.3	0.8	5.3	0.2	5.6	10.7	9.9	16.0
93-183	329	236,742.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	332	144,026.5	0.0	0.0	1.1	0.7	0.0	1.7	0.1	0.1	0.1	0.9	0.0	0.1	0.5	0.1	0.3
	337	130,407.9	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.6	0.0	0.0	0.3	0.8	0.0
	339	80,473.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	354	65,204.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
184-274	355	14,168.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	333	20,771.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275-366	334	12,655.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	356	8,391.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367-549	717	12,793.2								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	719	10,454.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	721	10,454.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550-731	718	15,269.3								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	720	14,443.9								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	722	12,793.2								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
732-914	764	14,443.9											0.0				
	772	18,570.8											0.0				
Biomass ('000t)			28.2	37.5	30.5	41.2	25.8	21.5	25.1	23.3	11.6	42.4	9.2	12.7	70.6	53.2	58.0
Upper C.I.			45.6	50.7	41.4	59.0	36.2	28.5	37.8	36.3	17.0	84.5	18.0	22.2	96.3	82.9	80.2
Lower C.I.			10.1	24.3	19.5	23.5	15.5	14.4	12.4	10.3	6.2	0.3	0.5	3.3	44.9	23.5	35.9

Table 15. Biomass estimates ('000t) of Yellowtail Flounder by stratum, Div 3LN0 - Spring

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27-28	1985 AN 43 WT 28-30	1986 WT 47-48	1987 WT 58-60	1988 WT 70-71	1989 WT 82-83	1990 WT 94-96	1991 WT 105-107	1992 WT 119-122	1993 WT 136-138	1994 WT 162-164	1995 WT 168-170	1996 WT 188-191	1997 WT 204-208	1998 WT 221-24
<=56	375	219,134.8	32.9	17.1	39.8	22.8	11.1	4.6	18.6	2.6	25.9	10.8	2.7	13.1	17.3	19.2	19.9
	376	206,204.1	6.2	13.8	13.8	16.2	2.6	25.1	14.6	29.6	4.8	1.1	0.1	0.6	1.1	25.5	20.5
TOTAL			39.1	30.9	53.6	39.0	13.7	29.7	33.1	32.2	30.6	11.9	2.8	13.7	18.4	44.7	40.4
57-92	330	287,365.1	0.2	1.9	0.7	0.2	0.2	0.3	0.2	1.1	0.0	0.0	0.0	0.0	0.3	0.1	0.0
	331	62,727.9	1.4	1.9	0.2	0.8	0.3	0.9	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0
	338	261,090.9	3.3	2.8	1.4	0.5	5.1	1.7	1.4	1.3	2.1	1.4	0.7	1.3	8.0	6.5	5.5
	340	236,054.8	0.7	1.5	1.8	4.3	1.1	0.8	2.0	0.6	0.4	0.4	0.0	0.0	0.0	0.8	0.2
	350	264,889.0	0.4	1.0	0.6	0.2	0.4	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0
	351	346,653.9	12.4	13.0	11.7	6.0	11.2	6.9	8.4	4.0	1.1	0.8	0.0	0.1	4.7	9.2	6.2
	352	354,907.6	10.0	8.7	10.7	15.2	7.5	8.0	11.2	13.6	7.1	39.0	8.1	5.5	46.0	25.6	29.7
	353	17,6353.31	0.2	7.6	2.8	13.4	0.3	0.9	1.7	2.3	0.8	5.3	0.2	5.6	10.7	9.9	16.0
	360	411,582.8	43.9	19.0	4.6	3.1	1.0	25.1	5.0	5.0	10.4	3.6	1.0	16.3	28.0	16.1	32.0
	361	254,900.7	32.3	15.3	9.8	14.8	17.9	11.1	26.8	21.0	7.5	21.0	41.8	27.7	27.1	26.1	31.2
	362	346,653.9	30.1	11.1	21.2	14.0	12.2	8.5	10.5	8.5	1.0	14.2	0.5	0.1	28.9	33.7	38.8
	363	244,858.7	5.4	3.1	1.7	1.6	1.1	0.4	0.8	0.1	0.0	0.0	0.0	0.0	0.5	0.1	0.0
	371	154,206.0		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	372	338,400.3	15.7	16.3	9.7	3.8	2.1	3.4	1.3	0.7	0.1	0.1	0.0	0.0	0.4	0.2	0.5
	373	346,653.9	16.3	9.1	4.8	6.2	6.3	3.6	0.3	2.5	0.0	0.0	0.3	0.0	0.6	0.3	1.1
	374	128,089.4	3.9	2.7	1.1	0.6	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.9	0.4	0.1
	383	92,716.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	384	154,066.4		0.6	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
TOTAL			178.3	115.7	83.1	84.7	67.1	72.1	69.8	61.0	30.7	79.9	52.8	56.7	156.4	129.2	161.4
93-183	325	206,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	329	236,742.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	332	144,026.5	0.0	0.0	1.1	0.7	0.0	1.7	0.1	0.1	0.1	0.9	0.0	0.1	0.5	0.1	0.3
	337	130,407.9	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.6	0.0	0.0	0.3	0.6	0.0
	339	80,473.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	341	216,521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	343	72,219.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	348	291,629.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	349	290,804.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	354	65,204.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	359	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	387,509.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	365	143,201.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	370	181,580.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	377	13,756.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	385	324,093.9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	390	203,726.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.3	0.2	1.5	0.9	0.2	2.0	0.2	0.3	0.1	1.5	0.1	0.2	0.9	0.9	0.4

Table 15 Con'd

Depth Range (m)	Stratum	No. of trawlable Units	1984 AN 27,28	1985 AN 43 WT 28-30	1986 WT 47, 48	1987 WT 58-60	1988 WT 70, 71	1989 WT 82-83	1990 WT 94-96	1991 WT 105-107	1992 WT 119-122	1993 WT 136-139	1994 WT 152-154	1995 WT 168-170	1996 WT 188-191	1997 WT 204-208	1998 WT 221-224
590-731	718	15,269.3								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	720	14,443.9								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	722	12,793.2								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	724	17,057.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.6								0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	730	23,385.4		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	732	31,776.6		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	734	31,363.9		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	736	24,073.2		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL				0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
732-914	737	31,226.4											0.0				
	741	30,676.1											0.0				
	745	47,871.3											0.0				
	748	21,872.2											0.0				
	752	18,433.2											0.0				
	756	14,581.5											0.0				
	760	21,184.4											0.0				
	764	14,443.9											0.0				
	772	18,570.8											0.0				
TOTAL													0.0				
Biomass ('000t)			217.7	146.8	138.2	124.6	81.0	103.8	103.1	93.4	61.4	93.3	55.6	70.6	175.6	174.9	202.2
Upper C.I.			276.2	175.3	179.7	169.5	103.0	141.4	137.5	121.8	91.5	143.7	92.2	100.9	210.8	231.3	254.9
Lower C.I.			159.3	118.3	96.7	89.6	59.0	66.1	66.8	65.0	31.3	42.8	19.0	40.3	140.4	118.6	149.6

Table 16. Mean Number of yellowtail by stratum, Div 3L - Fall											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 101	WT 114,115	WT 128-130	WT 145,146	WT 161,162	WT 176-179,181	WT 196-198	WT 213-217	WT230-33
(m)		Units			GA 226			TEL 22,23	TEL 41	TEL 57,58	TEL75,76
30 - 56	784	36,866.4	-	-	-	-	-	-	0.5	0.0	0.0
57 - 92	350	284,889.0	5.9	0.7	0.5	0.0	0.1	0.4	0.3	0.0	0.4
57 - 92	363	244,858.7	5.5	1.1	2.0	0.0	0.3	5.2	3.5	1.2	38.4
57 - 92	371	154,206.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57 - 92	372	338,400.3	3.9	4.8	3.8	7.7	0.0	6.4	16.9	17.2	10.2
57 - 92	384	154,068.4	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.3
57 - 92	785	63,965.9	-	-	-	-	-	-	0.0	0.0	0.0
93 - 183	328	208,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	341	216,521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	343	72,219.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	348	291,629.5	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
93 - 183	349	290,804.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	364	387,509.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	365	143,201.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	370	181,580.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	385	324,093.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	390	203,728.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	786	11,555.1	-	-	-	-	-	-	0.5	0.0	0.5
93 - 183	787	84,325.0	-	-	-	-	-	-	0.0	0.0	1.0
93 - 183	788	34,665.4	-	-	-	-	-	-	0.0	0.0	0.0
93 - 183	790	12,242.9	-	-	-	-	-	-	0.0	0.0	0.0
93 - 183	793	9,904.4	-	-	-	-	-	-	0.0	0.0	0.0
93 - 183	794	29,713.2	-	-	-	-	-	-	0.0	0.0	0.0
93 - 183	797	13,481.0	-	-	-	-	-	-	0.0	0.0	0.0
93 - 183	799	9,904.4	-	-	-	-	-	-	0.0	0.0	0.0
184 - 274	344	217,621.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	347	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	366	191,760.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	369	132,196.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	386	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	389	112,937.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	391	38,792.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	795	22,560.0	-	-	-	-	-	-	0.0	0.0	0.0
184 - 366	789	11,142.5	-	-	-	-	-	-	0.0	0.0	0.0
184 - 366	791	42,368.8	-	-	-	-	-	-	0.0	0.0	0.0
184 - 366	798	13,756.1	-	-	-	-	-	-	0.0	0.0	0.0
275 - 366	345	196,987.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	346	118,990.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	368	45,945.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	387	98,768.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	388	49,659.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	392	19,946.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	796	24,073.2	-	-	-	-	-	0.0	0.0	0.0	0.0
367 - 549	729	25,586.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	731	29,713.2	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
367 - 549	733	64,378.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	735	37,416.6	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	792	6,878.1	-	-	-	-	-	-	0.0	0.0	0.0
550 - 731	730	23,385.4	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	732	31,776.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	734	31,363.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	736	24,073.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
732 - 914	737	31,226.4	-	-	-	-	-	0.0	0.0	0.0	0.0
732 - 914	741	30,676.1	-	-	-	-	-	-	0.0	0.0	0.0
732 - 914	745	47,871.3	-	-	-	-	-	-	0.0	0.0	0.0
732 - 914	748	21,872.2	-	-	-	-	-	-	0.0	0.0	0.0
915 - 1097	738	30,401.0	-	-	-	-	-	0.0	0.0	0.0	0.0
915 - 1097	742	28,337.6	-	-	-	-	-	-	0.0	0.0	0.0
915 - 1097	746	53,924.0	-	-	-	-	-	-	0.0	0.0	0.0
915 - 1097	749	17,332.7	-	-	-	-	-	-	0.0	0.0	0.0
1098 - 1280	739	34,940.5	-	-	-	-	-	-	0.0	0.0	0.0
1098 - 1280	743	29,025.4	-	-	-	-	-	-	0.0	0.0	0.0
1098 - 1280	747	99,594.2	-	-	-	-	-	-	0.0	0.0	0.0
1098 - 1280	750	76,484.0	-	-	-	-	-	-	0.0	0.0	0.0
1281 - 1463	740	36,316.1	-	-	-	-	-	-	0.0	0.0	0.0
1281 - 1463	744	38,517.1	-	-	-	-	-	-	0.0	0.0	0.0
1281 - 1463	751	31,501.5	-	-	-	-	-	-	0.0	0.0	0.0
Mean No. (sets)			0.8 (161)	0.4 (219)	0.4 (215)	0.5 (153)	0.0 (200)	0.7 (161)	1.1 (211)	1.0 (203)	2.1 (124)
Upper C.I.			1.6	0.6	0.6	1.3	0.1	1.3	2.2	2.7	5.0
Lower C.I.			0.0	0.2	0.2	-0.3	0.0	0.1	-0.1	-0.7	-0.8

Table 17. Mean Number of yellowtail by stratum, Div 3N - Fall

[illegible]

Table 18. Mean Number of yellowtail by stratum, Div 30 - Fall											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 102	WT 114	WT 128	WT 144	WT 160,161	WT 176,177	WT 200	WT 212,213	WT 229-30,33
(m)		Units							AN 253, TEL 42		
57 - 92	330	287,365.1	1.3	0.1	1.3	3.3	0.1	8.2	0.2	7.3	1.7
57 - 92	331	62,727.9	6.7	29.0	8.0	16.0	0.0	2.0	0.0	1.0	3.5
57 - 92	338	261,090.9	8.5	20.0	2.0	8.8	0.3	97.0	0.5	38.2	31.2
57 - 92	340	236,054.8	5.6	36.0	0.3	5.0	1.6	4.8	0.0	28.2	23.2
57 - 92	351	346,653.9	36.9	15.9	1.8	35.3	7.0	15.8	11.6	107.3	207.4
57 - 92	352	354,907.6	47.9	172.4	150.5	56.7	69.7	121.9	134.3	249.0	269.9
57 - 92	353	176,353.3	28.0	0.0	0.0	8.7	0.0	8.7	7.0	82.8	0.5
93 - 183	329	236,742.6	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4
93 - 183	332	144,026.5	0.8	0.3	2.3	15.7	5.0	3.3	3.0	0.0	0.3
93 - 183	337	130,407.9	0.0	1.0	0.0	0.0	0.0	0.0	19.0	1.3	5.3
93 - 183	339	80,473.2	1.0	2.5	0.0	0.0	1.0	0.0	0.3	0.5	0.0
93 - 183	354	65,204.0	1.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
184 - 274	355	14,168.8	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	333	20,221.5	0.0	0.0	0.0	0.0	0.0	0.0	.	0.0	0.0
184 - 274	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	334	13,205.9	0.0	0.0	0.0	0.0	0.5	0.0	.	0.0	0.0
275 - 366	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	356	8,391.2	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	717	22,835.1	0.0	.	.	0.0	3.0	0.0	.	0.0	0.0
367 - 549	719	10,454.6	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	721	10,454.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	718	18,433.2	.	.	.	0.0	0.0	0.0	.	0.0	0.0
550 - 731	720	.	.	.	.	0.0	0.0	0.0	0.0	.	0.0
550 - 731	722	12,793.2	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
Mean No. (sets)			16.1 (91)	33.1 (84)	22.7 (54)	16.4 (75)	11.3 (75)	31.2 (81)	22.7 (60)	62.7 (203)	69.0 (96)
Upper C.I.			24.0	52.3	51.5	27.3	21.5	50.5	37.7	84.4	98.8
Lower C.I.			8.1	14.0	-6.2	5.5	1.0	11.9	7.6	41.0	39.2

Table 19. Mean Weight of yellowtail by stratum, Div 3L-Fall											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 101	WT 114.115	WT 128-130	WT 145.146	WT 161.162	WT 176-179.181	WT 196-198	WT 213-217	WT2230-33
(m)		Units			GA 226			TEL 22,23	TEL 41	TEL 57,58	TEL75,76
30 - 56	784	36,866.4							0.0	0.0	0.0
57 - 92	350	284,889.0	2.6	0.3	0.3	0.0	0.1	0.2	0.2	0.0	0.3
57 - 92	363	244,858.7	2.7	0.5	0.9	0.0	0.1	2.3	1.5	0.6	15.9
57 - 92	371	154,206.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57 - 92	372	338,400.3	1.9	2.3	1.7	3.3	0.0	1.9	5.4	3.3	3.6
57 - 92	384	154,068.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
57 - 92	785	63,965.9							0.0	0.0	0.0
93 - 183	328	208,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	341	216,521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	343	72,219.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	348	291,629.5	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
93 - 183	349	290,804.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	364	387,509.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	365	143,201.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	370	181,580.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	385	324,093.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	390	203,728.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	786	11,555.1							0.0	0.0	0.2
93 - 183	787	84,325.0							0.0	0.0	0.0
93 - 183	788	35,903.4							0.0	0.0	0.0
93 - 183	790	12,242.9							0.0	0.0	0.0
93 - 183	793	9,904.4							0.0	0.0	0.0
93 - 183	794	29,713.2							0.0	0.0	0.0
93 - 183	797	13,481.0							0.0	0.0	0.0
93 - 183	799	9,904.4							0.0	0.0	0.0
184 - 274	344	217,621.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	347	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	366	191,760.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	369	132,196.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	386	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	389	112,937.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	391	38,792.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	795	22,560.0							0.0	0.0	0.0
184 - 366	789	9,904.4							0.0	0.0	0.0
184 - 366	791	31,226.4							0.0	0.0	0.0
184 - 366	798	13,756.1							0.0	0.0	0.0
275 - 366	345	196,987.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	346	118,990.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	368	45,945.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	387	98,768.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	388	49,659.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	392	19,946.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	796	24,073.2							0.0	0.0	0.0
367 - 549	729	25,586.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	731	29,713.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
367 - 549	733	64,378.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	735	37,416.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	792	6,878.1							0.0	0.0	0.0
550 - 731	730	23,385.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	732	31,776.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	734	31,363.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	736	24,073.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
732 - 914	737	31,226.4							0.0	0.0	0.0
732 - 914	741	30,676.1							0.0	0.0	0.0
732 - 914	745	47,871.3							0.0	0.0	0.0
732 - 914	748	21,872.2							0.0	0.0	0.0
915 - 1097	738	30,401.0							0.0	0.0	0.0
915 - 1097	742	28,337.6							0.0	0.0	0.0
915 - 1097	746	53,924.0							0.0	0.0	0.0
915 - 1097	749	17,332.7							0.0	0.0	0.0
1098 - 1280	739	34,940.5							0.0	0.0	0.0
1098 - 1280	743	29,025.4							0.0	0.0	0.0
1098 - 1280	747	99,594.2							0.0	0.0	0.0
1098 - 1280	750	76,484.0							0.0	0.0	0.0
1281 - 1463	740	36,316.1							0.0	0.0	0.0
1281 - 1463	744	38,517.1							0.0	0.0	0.0
1281 - 1463	751	31,501.5							0.0	0.0	0.0
Mean Wt (sets)			0.4 (161)	0.2 (219)	0.2 (215)	0.2 (153)	0.0 (200)	0.2 (161)	0.4 (211)	0.2 (203)	0.8 (124)
Upper C.I.			0.8	0.3	0.3	0.5	0.0	0.4	0.8	0.5	2.0
Lower C.I.			0.0	0.1	0.1	-0.1	0.0	0.0	-0.1	0.1	-0.8

Table 20. Mean Weight of yellowtail by stratum, Div 3N - Fall											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 102	WT 113,114	WT 128,129	WT 144,145	WT 160,161	WT 176,177	TEL 41,42	WT 212-214	WT229-30,33
(m)		Units							AN 253		TEL76
<=56	375	219,134.8	14.6	23.0	.	36.4	142.0	67.7	54.8	70.1	87.1
<=56	376	206,204.1	97.2	53.0	52.3	151.7	49.4	118.6	117.2	157.4	174.3
57 - 92	360	411,582.8	16.4	20.1	19.5	60.3	27.3	39.6	89.4	114.8	136.4
57 - 92	361	254,900.7	37.3	77.0	95.3	116.9	161.0	133.7	122.5	142.9	146.3
57 - 92	362	346,653.9	19.5	18.6	3.0	1.0	3.0	35.0	23.0	79.7	54.1
57 - 92	373	346,653.9	0.6	1.4	0.0	0.0	2.5	2.8	0.0	12.2	15.6
57 - 92	374	128,069.4	0.0	0.9	.	0.0	0.0	0.0	8.2	6.2	7.9
57 - 92	383	92,716.2	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	359	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93 - 183	377	13,756.1	0.0	.	0.0	0.0	0.0	0.0	0.0	1.4	0.4
93 - 183	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	358	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	381	25,036.1	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	357	22,560.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	379	14,581.5	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	380	15,957.1	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	723	21,322.0	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	725	14,443.9	.	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	727	22,009.8	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	724	17,057.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	726	9,904.4	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	728	21,459.5	.	.	.	.	0.0	0.0	0.0	0.0	0.0
Mean Wt (sets)			20.6(80)	22.1 (67)	24.1 (34)	39.6 (70)	39.8 (73)	42.8 (90)	47.1 (82)	68.4 (100)	66.3(119)
Upper C.I.			35.6	36.6	43.7	62.6	66.4	56.5	65.0	87.1	85.0
Lower C.I.			5.6	7.6	4.6	16.6	13.1	29.1	29.3	49.6	47.5

Table 21. Mean Weight of yellowtail by stratum, Div 30 - Fall											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 102	WT 114	WT 128	WT 144	WT 160,161	WT 176,177	WT 200	WT 212,213	WT229,30,33
(m)		Units							AN 253, TEL 42		
57 - 92	330	287,365.1	0.7	0.1	0.7	1.6	0.1	3.7	0.0	2.6	0.6
57 - 92	331	62,727.9	3.8	14.9	4.6	8.8	0.0	0.6	0.0	0.3	1.2
57 - 92	338	261,090.9	3.7	7.8	0.9	4.3	0.2	27.7	0.2	21.7	10.9
57 - 92	340	236,054.8	2.7	16.8	0.2	1.3	0.8	2.0	0.0	10.9	9.2
57 - 92	351	346,653.9	16.0	6.7	0.8	14.4	2.8	6.4	3.7	42.0	54.2
57 - 92	352	354,907.6	19.7	59.2	51.3	23.5	26.1	38.6	42.8	74.6	80.2
57 - 92	353	176,353.3	13.9	0.0	0.0	3.6	0.0	4.8	4.2	41.4	0.2
93 - 183	329	236,742.6	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
93 - 183	332	144,026.5	0.4	0.2	1.0	7.3	2.6	0.9	1.7	0.0	0.0
93 - 183	337	130,407.9	0.0	0.6	0.0	0.0	0.0	0.0	10.2	0.9	1.6
93 - 183	339	80,473.2	0.5	1.1	0.0	0.0	0.5	0.0	0.1	0.3	0.0
93 - 183	354	65,204.0	0.3	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
184 - 274	333	20,221.5	0.0	0.0	0.0	0.0	0.0	0.0	.	0.0	0.0
184 - 274	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	355	14,168.8	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	334	13,205.9	0.0	0.0	0.0	0.0	0.2	0.0	.	0.0	0.0
275 - 366	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	356	8,391.2	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	717	22,835.1	0.0	.	.	0.0	1.0	0.0	.	0.0	0.0
367 - 549	719	10,454.6	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	721	10,454.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	718	18,433.2	.	.	.	0.0	0.0	0.0	.	0.0	0.0
550 - 731	720	.	.	.	.	0.0	0.0	0.0	0.0	.	0.0
550 - 731	722	12,793.2	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
Mean Wt (sets)			7.0 (91)	12.2 (84)	7.9 (54)	6.9 (75)	4.3 (75)	10.1 (81)	7.6 (60)	22.7 (203)	19.9 (96)
Upper C.I.			10.5	18.1	17.5	11.1	8.2	15.0	12.7	31.7	28.2
Lower C.I.			3.5	6.3	-1.7	2.7	0.5	5.1	2.5	13.6	11.6

Table 22. Cont'd Abundance (millions) of yellowtail by stratum, Div 3L - Fall											
Depth	Strat	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 101	WT 114,115	WT 128-130	WT 145,146	WT 161,162	WT 176-179,181	WT 196-198	WT 213-217	WT 230-33
(m)		Units			GA 226			TEL 22,23	TEL 41	TEL 57,58	TEL 75,76
732 - 914	737	31,226.4	.	.	.	.	.	0.0	0.0	0.0	0.0
	741	30,676.1	.	.	.	.	.	.	0.0	0.0	0.0
	745	47,871.3	.	.	.	.	.	.	0.0	0.0	0.0
	748	21,872.2	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL								0.0	0.0	0.0	0.0
915 - 1097	738	30,401.0	.	.	.	.	.	0.0	0.0	0.0	0.0
	742	28,337.6	.	.	.	.	.	.	0.0	0.0	0.0
	746	53,924.0	.	.	.	.	.	.	0.0	0.0	0.0
	749	17,332.7	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL								0.0	0.0	0.0	0.0
1098 - 1280	739	34,940.5	.	.	.	.	.	.	0.0	0.0	0.0
	743	29,025.4	.	.	.	.	.	.	0.0	0.0	0.0
	747	99,594.2	.	.	.	.	.	.	0.0	0.0	0.0
	750	76,484.0	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
1281 - 1463	740	36,316.1	.	.	.	.	.	.	0.0	0.0	0.0
	744	38,517.1	.	.	.	.	.	.	0.0	0.0	0.0
	751	31,501.5	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
Abundance (millions)			4.4	2.1	2.0	2.6	0.1	3.6	6.7	6.1	13.1
Upper C.I.			8.7	3.3	3.1	6.6	0.3	6.8	14.1	16.9	31.6
Lower C.I.			0.1	1.0	0.9	-1.4	-0.1	0.3	-0.7	-4.7	-5.4

Table 23. Abundance (millions) of yellowtail by stratum, Div 3N - Fall											
Depth	Strat	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 102	WT 113,114	WT 128,129	WT 144,145	WT 160,161	WT 176,177	TEL 41,42	WT 212-214	WT 229,30,33
(m)		Units							AN 253		TEL 76
<=56	375	219,134.8	8.9	12.7	.	16.8	72.3	87.3	47.5	46.6	68.1
	376	206,204.1	66.7	70.7	66.6	139.1	42.5	146.7	171.4	180.1	161.3
TOTAL			75.6	83.4	66.6	155.9	114.8	234.0	218.9	226.7	229.4
57 - 92	360	411,582.8	34.3	38.2	20.4	90.4	41.5	70.5	161.4	167.2	205.3
	361	254,900.7	21.8	68.7	68.8	80.7	98.2	114.7	106.0	101.3	134.7
	362	346,653.9	16.5	21.0	2.3	0.6	2.3	84.9	26.2	106.5	48.3
	373	346,653.9	0.4	0.9	0.0	0.0	2.5	4.8	0.0	12.2	12.2
	374	128,069.4	0.0	0.1	.	0.0	0.0	0.0	3.8	2.3	2.0
	383	92,716.2	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			73.0	128.9	91.5	171.7	144.5	274.9	297.4	389.5	402.5
93 - 183	359	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	377	13,756.1	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	358	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	381	25,036.1	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	357	22,560.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	379	14,581.5	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	380	15,957.1	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	723	21,322.0	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	725	14,443.9	.	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	727	22,009.8	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	724	17,057.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5	.	.	.	.	0.0	0.0	0.0	0.0	0.0
TOTAL				0.0		0.0	0.0	0.0	0.0	0.0	0.0
Abundance (millions)			148.5	212.3	158.0	327.7	259.3	509.0	516.3	616.2	632.1
Upper C.I.			243.8	349.7	363.3	540.0	430.5	706.4	727.2	771.6	822.2
Lower C.I.			53.3	74.9	-47.2	115.3	88.2	311.5	305.4	460.8	442.0

Table 24. Abundance (millions) of yellowtail by stratum, Div 30 - Fall											
Depth	Strat	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 102	WT113,114	WT 128	WT 144	WT 160,161	WT 176,177	WT 200	WT 212,213	WT229,30,33
(m)		Units							AN 253, TEL 42		
57 - 92	330	287,365.0	0.4	0.0	0.4	1.0	0.0	2.4	0.0	2.1	0.5
	331	62,728.0	0.4	1.8	0.5	1.0	0.0	0.1	0.0	0.1	0.2
	338	261,091.0	2.2	5.2	0.5	2.3	0.1	25.3	0.1	10.0	8.1
	340	236,055.0	1.3	8.5	0.1	1.2	0.4	1.1	0.0	6.7	5.5
	351	346,654.0	12.8	5.5	0.6	12.2	2.4	5.5	4.0	37.2	71.9
	352	354,908.0	17.0	61.2	53.4	20.1	24.7	43.3	47.7	88.4	95.8
	353	176,353.0	4.9	0.0	0.0	1.5	0.0	1.5	1.2	14.6	0.1
TOTAL			39.0	82.2	55.5	39.3	27.6	79.2	53.0	159.1	182.1
93 - 183	329	236,743.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	332	144,026.0	0.1	0.0	0.3	2.3	0.7	0.5	0.4	0.0	0.1
	337	130,408.0	0.0	0.1	0.0	0.0	0.0	0.0	2.5	0.2	0.7
	339	80,473.0	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0
	354	65,204.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
TOTAL			0.5	0.3	0.3	2.3	0.8	0.5	3.0	0.2	0.8
184 - 274	333	20,221.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	336	16,645.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	355	14,169.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	334	13,206.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	335	7,979.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	356	8,391.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	717	22,835.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	719	10,455.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	721	10,455.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	718	18,433.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	720	14,443.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	722	12,793.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Abundance (millions)			39.6	82.7	55.8	41.6	28.5	79.7	56.2	159.2	183.0
Upper C.I.			59.0	130.4	126.9	69.3	54.5	128.9	93.5	214.2	262.0
Lower C.I.			20.1	34.9	-15.3	13.9	2.4	30.4	18.8	104.1	103.9

Table 25 Con'd											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 101-102	WT 113-115	WT 128-130	WT 144-146	WT 160-162	WT 176-179,181	WT 188-191	WT 204-208	WT 229-33
(m)		Units			GA 226			TEL 22,23			TEL 75,76
184 - 366	789	9,904.4	.	.	.	.	.	.	0.0	0.0	0.0
	791	31,226.4	.	.	.	.	.	.	0.0	0.0	0.0
	798	13,756.1	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
275 - 366	334	13,205.9	0.0	0.0	0.0	0.0	0.1	0.0		0.0	0.0
	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	345	196,987.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	346	118,990.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	356	8,391.2	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	357	22,560.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	368	45,945.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	379	14,581.5	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	380	15,957.1	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	387	98,768.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	388	49,659.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	392	19,946.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	796	24,073.2							0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
367 - 549	717	22,835.1	0.0	.	.	0.0	0.0	0.0	.	0.0	0.0
	719	10,454.6	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	721	10,454.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	723	21,322.0	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	725	14,443.9	.	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	727	22,009.8	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
	729	25,586.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	731	29,713.2	0.0	0.0	0.0	0.0	0.0	0.0	.	0.0	0.0
	733	64,378.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	735	37,416.6	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	792	6,878.1							0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	718	18,433.2	.	.	.	0.0	0.0	0.0	.	0.0	0.0
	720	14,443.9	.	.	.	0.0	0.0	0.0	0.0	.	0.0
	722	12,793.2	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	724	17,057.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5	.	.	.	.	0.0	0.0	0.0	0.0	0.0
	730	23,385.4	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	732	31,776.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	734	31,363.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	736	24,073.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	TOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
732 - 914	737	31,226.4	.	.	.	.	.	0.0	0.0	0.0	0.0
	741	30,676.1	.	.	.	.	.	.	0.0	0.0	0.0
	745	47,871.3	.	.	.	.	.	.	0.0	0.0	0.0
	748	21,872.2	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL								0.0	0.0	0.0	0.0
915 - 1097	738	30,401.0	.	.	.	.	.	0.0	0.0	0.0	0.0
	742	28,337.6	.	.	.	.	.	.	0.0	0.0	0.0
	746	53,924.0	.	.	.	.	.	.	0.0	0.0	0.0
	749	17,332.7	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL								0.0	0.0	0.0	0.0
1098 - 1280	739	34,940.5	.	.	.	.	.	.	0.0	0.0	0.0
	743	29,025.4	.	.	.	.	.	.	0.0	0.0	0.0
	747	99,594.2	.	.	.	.	.	.	0.0	0.0	0.0
	750	76,484.0	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
1281 - 1463	740	36,316.1	.	.	.	.	.	.	0.0	0.0	0.0
	744	38,517.1	.	.	.	.	.	.	0.0	0.0	0.0
	751	31,501.5	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
Abundance (millions)			192.5	297.1	215.9	371.9	287.9	592.2	579.1	781.5	828.2
Upper C.I.			289.0	438.7	410.7	581.1	460.5	793.3	791.7	945.3	1,115.7
Lower C.I.			95.9	155.5	21.0	157.6	115.3	391.0	366.6	617.8	540.6

Table 26. Biomass ('000t) of yellowtail by stratum, Div 3L - Fall

Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 101	WT 114.115	WT 128-130	WT 145.146	WT 161.162	WT 176-179.181	WT 196-198	WT 213-217	WT 230-33
(m)		Units			GA 226			TEL 22.23	TEL 41	TEL 57.58	TEL 75.76
30 - 56	784	36,866.4	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
57 - 92	350	284,889.0	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	363	244,858.7	0.7	0.1	0.2	0.0	0.0	0.6	0.4	0.2	3.9
	371	154,206.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	372	338,400.3	0.6	0.8	0.6	1.1	0.0	0.6	1.8	1.1	1.2
	384	154,068.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	785	63,965.9							0.0	0.0	0.0
TOTAL			2.1	1.0	0.9	1.1	0.0	1.2	2.2	1.3	5.2
93 - 183	328	208,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	341	216,521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	343	72,219.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	348	291,629.5	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
	349	290,804.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	387,509.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	365	143,201.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	370	181,580.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	385	324,093.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	390	203,728.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	786	11,555.1	.	.	.	.	.	.	0.0	0.0	0.0
	787	84,325.0	.	.	.	.	.	.	0.0	0.0	0.0
	788	35,903.4	.	.	.	.	.	.	0.0	0.0	0.0
	790	12,242.9	.	.	.	.	.	.	0.0	0.0	0.0
	793	9,904.4	.	.	.	.	.	.	0.0	0.0	0.0
	794	29,713.2	.	.	.	.	.	.	0.0	0.0	0.0
	797	13,481.0	.	.	.	.	.	.	0.0	0.0	0.0
	799	9,904.4	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL			0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	344	217,621.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	347	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	366	191,760.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	369	132,196.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	386	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	389	112,937.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	391	38,792.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	795	22,560.0	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 366	789	9,904.4	.	.	.	.	.	.	0.0	0.0	0.0
	791	31,226.4	.	.	.	.	.	.	0.0	0.0	0.0
	798	13,756.1	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
275 - 366	345	196,987.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	346	118,990.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	368	45,945.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	387	98,768.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	388	49,659.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	392	19,946.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	796	24,073.2	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	729	25,586.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	731	29,713.2	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
	733	64,378.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	735	37,416.6	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	792	6,878.1	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	730	23,385.4	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	732	31,776.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	734	31,363.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	736	24,073.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 26. Cont'd											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 101	WT 114,115	WT 128-130	WT 145,146	WT 161,162	WT 176-179,181	WT 196-198	WT 213-217	WT220-33
(m)		Units			GA 226			TEL 22,23	TEL 41	TEL 57,58	TEL75,76
732 - 914	737	31,226.4	.	.	.	.	.	0.0	0.0	0.0	0.0
	741	30,676.1	.	.	.	.	.	.	0.0	0.0	0.0
	745	47,871.3	.	.	.	.	.	.	0.0	0.0	0.0
	748	21,872.2	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL								0.0	0.0	0.0	0.0
915 -1097	738	30,401.0	.	.	.	.	.	0.0	0.0	0.0	0.0
	742	28,337.6	.	.	.	.	.	.	0.0	0.0	0.0
	746	53,924.0	.	.	.	.	.	.	0.0	0.0	0.0
	749	17,332.7	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL								0.0	0.0	0.0	0.0
1098 -1280	739	34,940.5	.	.	.	.	.	.	0.0	0.0	0.0
	743	29,025.4	.	.	.	.	.	.	0.0	0.0	0.0
	747	99,594.2	.	.	.	.	.	.	0.0	0.0	0.0
	750	76,484.0	.	.	.	.	.	.	0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
1281 -1463	740	36,316.1	.	.	.	.	.	.	0.0	0.0	0.0
	744	38,517.1	.	.	.	.	.	.	0.0	0.0	0.0
	751	31,501.5	.	.	.	.	.	.	0.0	0.0	0.0
									0.0	0.0	0.0
TOTAL									0.0	0.0	0.0
Biomass ('000t)			2.1	1.0	0.9	1.1	0.0	1.2	2.2	1.3	5.2
Upper C.I.			4.1	1.6	1.5	2.7	0.1	2.2	5.3	3.1	12.8
Lower C.I.			0.0	0.4	0.4	-0.5	0.0	0.3	-0.8	-0.5	-2.4

Table 27. Biomass ('000t) of yellowtail by stratum, Div 3N - Fall											
Depth	Stratum	No. of	1990	1991	1992	1993	1994	1995	1996	1997	1998
Range		trawlable	WT 102	WT 113,114	WT 128,129	WT 144,145	WT 160,161	WT 176,177	TEL 41,42	WT 212-214	WT 229,30,33
(m)		Units							AN 253		TEL 76
<=56	375	219,134.8	3.2	5.1	.	8.0	31.1	14.8	12.0	15.4	19.1
	376	206,204.1	20.1	10.9	10.8	31.3	10.2	24.4	24.2	32.5	35.9
TOTAL			23.3	16.0	10.8	39.3	41.3	39.2	36.2	47.9	55.0
57 - 92	360	411,582.8	6.7	8.3	8.0	24.8	11.2	16.3	36.8	47.2	56.1
	361	254,900.7	9.5	19.6	24.3	29.8	41.0	34.1	31.2	36.4	37.3
	362	346,653.9	6.8	6.4	1.0	0.3	1.0	12.1	8.0	27.6	18.8
	373	346,653.9	0.2	0.5	0.0	0.0	0.9	1.0	0.0	4.2	5.4
	374	128,069.4	0.0	0.1	.	0.0	0.0	0.0	1.1	0.8	1.0
	383	92,716.2	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			23.2	34.9	33.3	54.9	54.1	63.5	77.1	116.2	118.6
93 - 183	359	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	377	13,756.1	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
184 - 274	358	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	381	25,036.1	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	357	22,560.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	379	14,581.5	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	380	15,957.1	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	723	21,322.0	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	725	14,443.9	.	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	727	22,009.8	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	724	17,057.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	726	9,904.4	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
	728	21,459.5	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL				0.0		0.0	0.0	0.0	0.0	0.0	0.0
Biomass ('000t)			46.5	50.9	44.1	94.2	95.5	102.8	113.2	164.2	173.6
Upper C.I.			80.3	84.4	79.9	148.9	159.5	135.7	156.1	209.2	222.7
Lower C.I.			12.6	17.4	8.4	39.5	31.5	69.9	70.3	119.1	124.5

Table 28. Biomass ('000t) of yellowtail by stratum, Div 30 - Fall											
Depth Range (m)	Stratum	No. of trawlable Units	1990 WT 102	1991 WT 114	1992 WT 128	1993 WT 144	1994 WT 160,161	1995 WT 176,177	1996 WT 200 AN 253, TEL 42	1997 WT 212,213	1998 WT229,30,33
57 - 92	330	287,365.1	0.2	0.0	0.3	0.5	0.0	1.1	0.0	0.8	0.2
	331	62,727.9	0.2	0.9	0.1	0.5	0.0	0.0	0.0	0.0	0.1
	338	261,090.9	1.0	2.0	0.3	1.1	0.1	7.2	0.0	5.7	2.8
	340	236,054.8	0.6	4.0	0.2	0.3	0.2	0.5	0.0	2.6	2.2
	351	346,653.9	5.5	2.3	0.3	5.0	1.0	2.2	1.3	14.5	18.8
	352	354,907.6	7.0	21.0	0.4	8.3	9.3	13.7	15.2	26.5	28.5
	353	176,353.3	2.4	0.0	0.2	0.6	0.0	0.8	0.7	7.3	0.0
TOTAL			16.9	30.2	1.8	16.3	10.6	25.5	17.2	57.4	52.6
93 - 183	329	236,742.6	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
	332	144,026.5	0.1	0.0	0.1	1.0	0.4	0.1	0.2	0.0	0.0
	337	130,407.9	0.0	0.1	0.1	0.0	0.0	0.0	1.3	0.1	0.2
	339	80,473.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	354	65,204.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.2	0.2	0.6	1.0	0.4	0.1	1.5	0.1	0.3
184 - 274	355	14,168.8	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	333	20,221.5	0.0	0.0	0.0	0.0	0.0	0.0	.	0.0	0.0
	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
275 - 366	334	13,205.9	0.0	0.0	0.0	0.0	0.0	0.0	.	0.0	0.0
	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	356	8,391.2	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
367 - 549	717	22,835.1	0.0	.	.	0.0	0.0	0.0	.	0.0	0.0
	719	10,454.6	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
	721	10,454.6	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL			0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
550 - 731	718	18,433.2	.	.	.	0.0	0.0	0.0	.	0.0	0.0
	720	14,443.9	.	.	.	0.0	0.0	0.0	0.0	.	0.0
	722	12,793.2	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL				0.0		0.0	0.0	0.0	0.0	0.0	0.0
Biomass ('000t)			17.3	30.5	19.4	17.5	10.9	25.7	18.9	57.5	52.8
Upper C.I.			25.9	45.2	43.1	28.1	20.7	38.4	31.5	80.5	74.8
Lower C.I.			8.6	15.8	-4.3	6.8	1.2	13.1	6.2	34.5	30.8

Table 29. Biomass ('000t) of Yellowtail Flounder by stratum, Div 3LN0-Fall											
Depth Range (m)	Stratum	No. of trawlable Units	1990 WT 101-102	1991 WT 113-115	1992 WT 128-130 GA 226	1993 WT 144-146	1994 WT 160-162	1995 WT 176-179,181 TEL 22,23	1996 WT196-98,200 TEL 41,42,AN 253	1997 WT212-17 TEL 97,98	1998 WT229-33 TEL 75,76
30 - 56 TOTAL	784	36,866.4	-	-	-	-	-	-	0.0 0.0	0.0 0.0	0.0 0.0
<=66	375	219,134.8	3.2	5.1	-	8.0	31.1	14.8	12.0	15.4	19.1
	376	206,204.1	20.1	10.9	10.8	31.3	10.2	24.4	24.2	32.5	36.9
TOTAL			23.3	16.0	10.8	39.3	41.3	39.2	36.2	47.9	56.0
57 - 92	330	287,365.1	0.2	0.0	0.2	0.5	0.0	1.1	0.0	0.8	0.2
	331	62,727.9	0.2	0.9	0.3	0.5	0.0	0.0	0.0	0.0	0.1
	338	261,890.9	1.0	2.0	0.2	1.1	0.1	7.2	0.0	5.7	2.8
	340	236,054.8	0.6	4.0	0.0	0.3	0.2	0.5	0.0	2.6	2.2
	350	284,889.0	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	361	346,853.9	5.5	2.3	0.3	5.0	1.0	2.2	1.3	14.5	18.8
	362	364,907.6	7.0	21.0	18.2	8.3	9.3	13.7	15.2	26.5	26.5
	363	176,353.3	2.4	0.0	0.0	0.6	0.0	0.8	0.7	7.3	0.0
	360	411,562.8	6.7	8.3	8.0	24.8	11.2	16.3	36.8	47.2	56.1
	361	264,900.7	9.5	19.6	24.3	29.8	41.0	34.1	31.2	35.4	37.3
	362	346,853.9	6.8	6.4	1.0	0.3	1.0	12.1	6.0	27.6	16.8
	363	244,858.7	0.7	0.1	0.2	0.0	0.0	0.6	0.4	0.2	3.9
	371	164,206.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	372	338,400.3	0.6	0.8	0.6	1.1	0.0	0.6	1.8	1.1	1.2
	373	346,853.9	0.2	0.5	0.0	0.0	0.9	1.0	0.0	4.2	5.4
	374	128,069.4	0.0	0.1	-	0.0	0.0	0.0	1.1	0.8	1.0
	383	92,716.2	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0
	384	164,068.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	785	63,866.9	-	-	-	-	-	-	0.0	0.0	0.0
TOTAL			42.2	66.1	53.4	72.3	64.7	90.2	96.5	174.9	176.3
93 - 183	328	208,955.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	329	236,742.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	332	144,026.5	0.1	0.0	0.1	1.0	0.4	0.1	0.2	0.0	0.0
	337	130,407.9	0.0	0.1	0.0	0.0	0.0	0.0	1.3	0.1	0.2
	339	80,473.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	341	216,521.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	342	80,473.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	343	72,219.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	348	291,629.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	349	290,804.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	65,204.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	369	57,913.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	364	387,509.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	365	143,201.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	370	181,690.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	377	13,756.1	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	382	89,002.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	385	324,093.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	390	203,728.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	786	11,555.1	-	-	-	-	-	-	0.0	0.0	0.0
	787	84,325.0	-	-	-	-	-	-	0.0	0.0	0.0
	788	35,903.4	-	-	-	-	-	-	0.0	0.0	0.0
	790	12,242.9	-	-	-	-	-	-	0.0	0.0	0.0
	793	9,904.4	-	-	-	-	-	-	0.0	0.0	0.0
	794	29,713.2	-	-	-	-	-	-	0.0	0.0	0.0
	797	13,481.0	-	-	-	-	-	-	0.0	0.0	0.0
	799	9,904.4	-	-	-	-	-	-	0.0	0.0	0.0
TOTAL			0.2	0.2	0.2	1.0	0.4	0.1	1.5	0.1	0.3
184 - 274	333	20,221.5	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
	336	16,644.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	344	217,621.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	347	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	365	14,168.8	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	369	30,951.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	366	191,760.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	369	132,196.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	378	19,121.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	381	25,036.1	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0
	386	135,222.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	389	112,937.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	391	39,792.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	795	22,660.0	-	-	-	-	-	-	0.0	0.0	0.0
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 29 Con'd												
Depth Range (m)	Stratum	No. of trawlable Units	1990 WT 101,102	1991 WT 113-115	1992 WT 128-130 GA 226	1993 WT 144-146	1994 WT 160-162	1995 WT 170-179,181 TEL 22,23	1996 WT196-98,200 TEL 41, 42 AN 253	1997 WT 212-17 TEL 57,58	1998 WT229-33 3EL 75,76	
184 - 365	789	9,904.4	-	-	-	-	-	-	0.0	0.0	0.0	
	791	31,226.4	-	-	-	-	-	-	0.0	0.0	0.0	
	798	13,756.1	-	-	-	-	-	-	0.0	0.0	0.0	
	TOTAL								0.0	0.0	0.0	
275 - 365	394	13,205.9	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	
	335	7,978.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	345	186,987.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	346	118,990.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	356	8,391.2	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	357	22,950.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	368	45,945.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	379	14,591.5	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	380	15,957.1	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	
	387	98,768.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	
	388	49,659.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	
	392	19,946.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	
	796	24,073.2	-	-	-	-	-	-	0.0	0.0	0.0	
	TOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
357 - 549	717	22,836.1	0.0	-	-	0.0	0.0	0.0	-	0.0	0.0	
	719	10,454.6	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	
	721	10,454.6	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	
	723	21,322.0	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	
	725	14,443.9	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	727	22,009.8	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	
	729	25,926.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	731	29,713.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	733	64,378.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	735	37,416.6	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	792	6,879.1	-	-	-	-	-	-	0.0	0.0	0.0	
	TOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	550 - 731	718	16,433.2	-	-	-	0.0	0.0	0.0	-	0.0	0.0
		720	14,443.9	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0
722		12,793.2	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	
724		17,057.6	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	
726		9,904.4	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	
728		21,459.5	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	
730		23,386.4	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
732		31,776.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
734		31,363.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
736		24,073.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
732 - 914	737	31,226.4	-	-	-	-	-	-	0.0	0.0	0.0	
	741	30,676.1	-	-	-	-	-	-	0.0	0.0	0.0	
	745	47,871.3	-	-	-	-	-	-	0.0	0.0	0.0	
	748	21,872.2	-	-	-	-	-	-	0.0	0.0	0.0	
	TOTAL								0.0	0.0	0.0	
915 - 1097	738	30,401.0	-	-	-	-	-	0.0	0.0	0.0	0.0	
	742	20,337.6	-	-	-	-	-	-	0.0	0.0	0.0	
	746	53,924.0	-	-	-	-	-	-	0.0	0.0	0.0	
	749	17,332.7	-	-	-	-	-	-	0.0	0.0	0.0	
	TOTAL							0.0	0.0	0.0	0.0	
1098 - 1280	739	34,940.5	-	-	-	-	-	-	0.0	0.0	0	
	743	29,025.4	-	-	-	-	-	-	0.0	0.0	0	
	747	99,594.2	-	-	-	-	-	-	0.0	0.0	0	
	750	76,484.0	-	-	-	-	-	-	0.0	0.0	0	
	TOTAL								0.0	0.0	0.0	
1301 - 1463	740	36,316.1	-	-	-	-	-	-	0.0	0.0	0	
	744	39,517.1	-	-	-	-	-	-	0.0	0.0	0	
	751	31,901.5	-	-	-	-	-	-	0.0	0.0	0	
	TOTAL								0.0	0.0	0	
Biomass ('000t)			65.8	82.4	64.5	112.8	106.4	129.8	134.3	222.9	231.6	
Upper C.I.			99.8	117.5	103.8	168.0	171.0	164.3	178.3	272.5	285.2	
Lower C.I.			31.8	47.3	25.2	57.6	41.9	95.2	90.3	173.4	178.1	

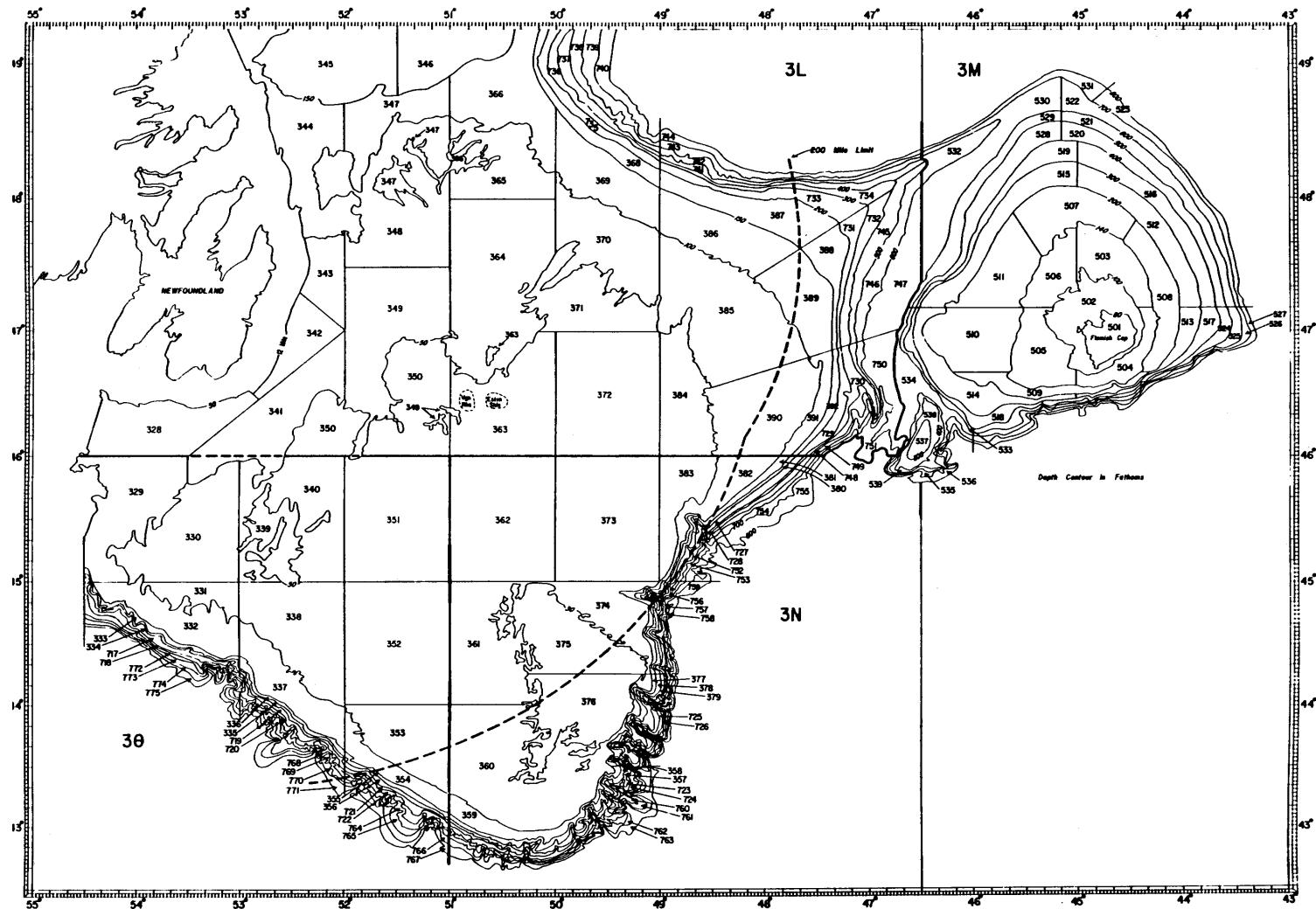


Fig. 1. Stratification chart of the Grand Banks, NAFO Divisions 3LNO, used in annual Canadian spring and fall bottom trawl surveys.

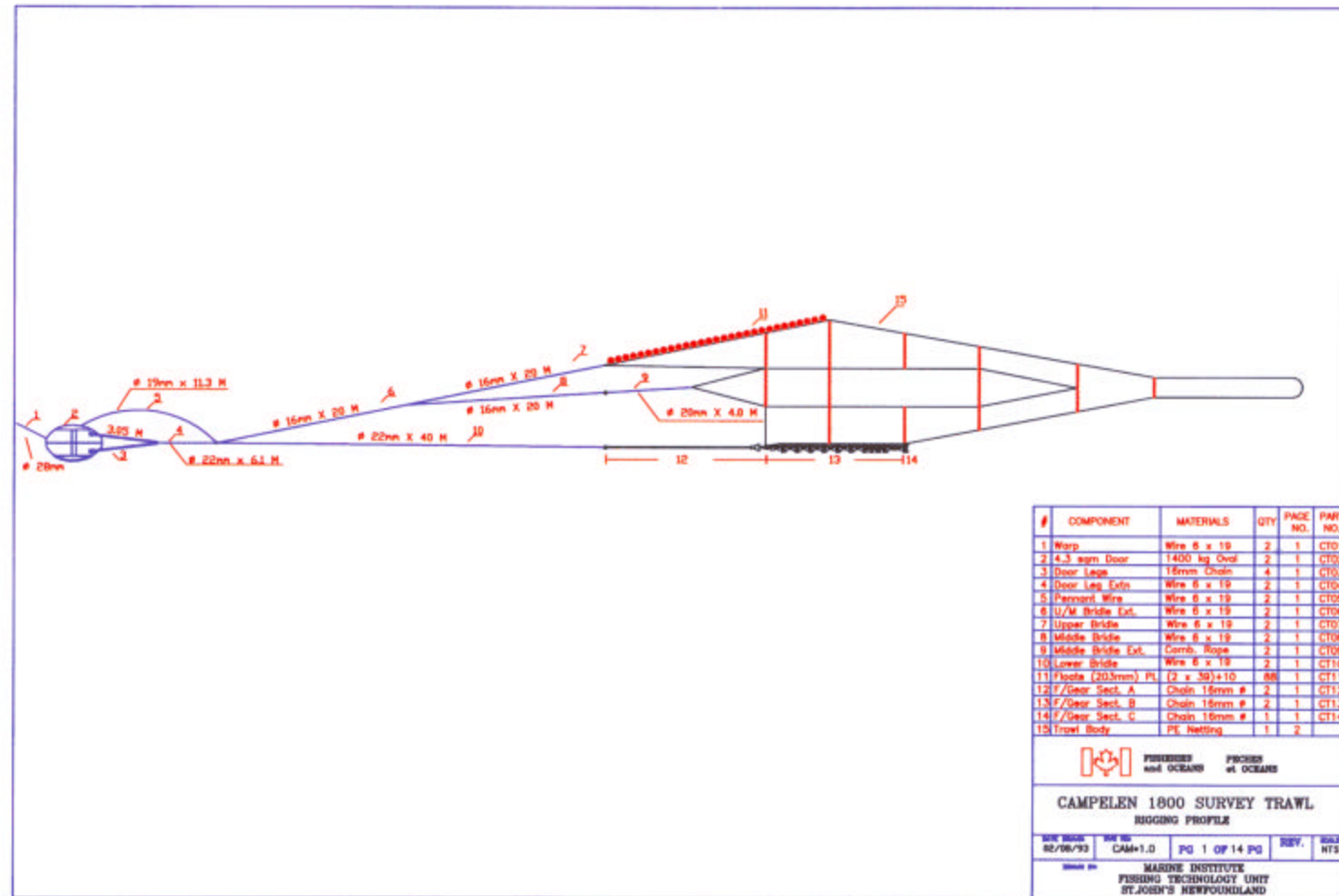


Fig. 2. Rigging profile of the Campelen 1800 shrimp trawl used in annual surveys of the Grand Bank

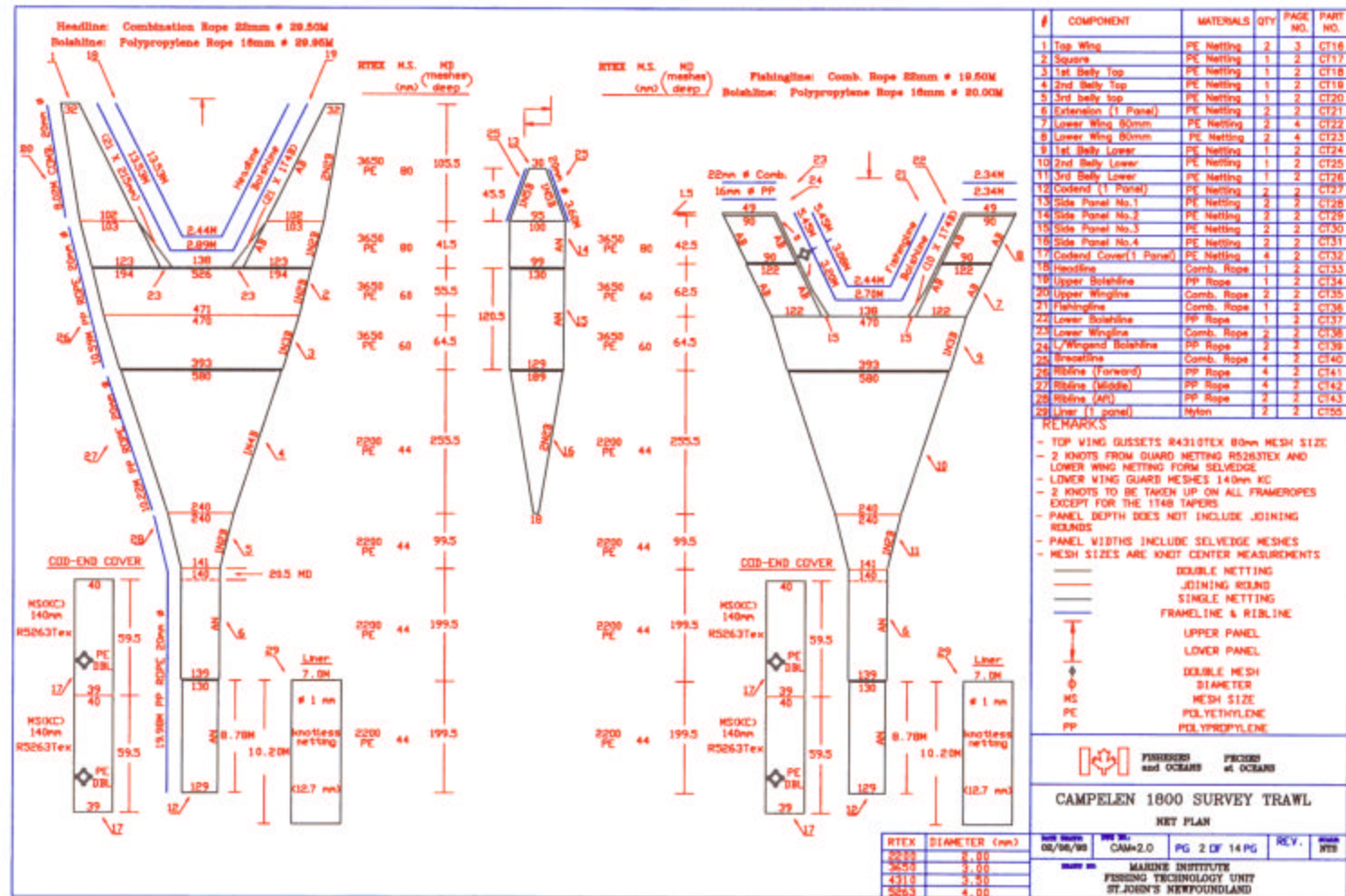


Fig. 3. Schematic diagram of net plan for the Campelen 1800 shrimp trawl.

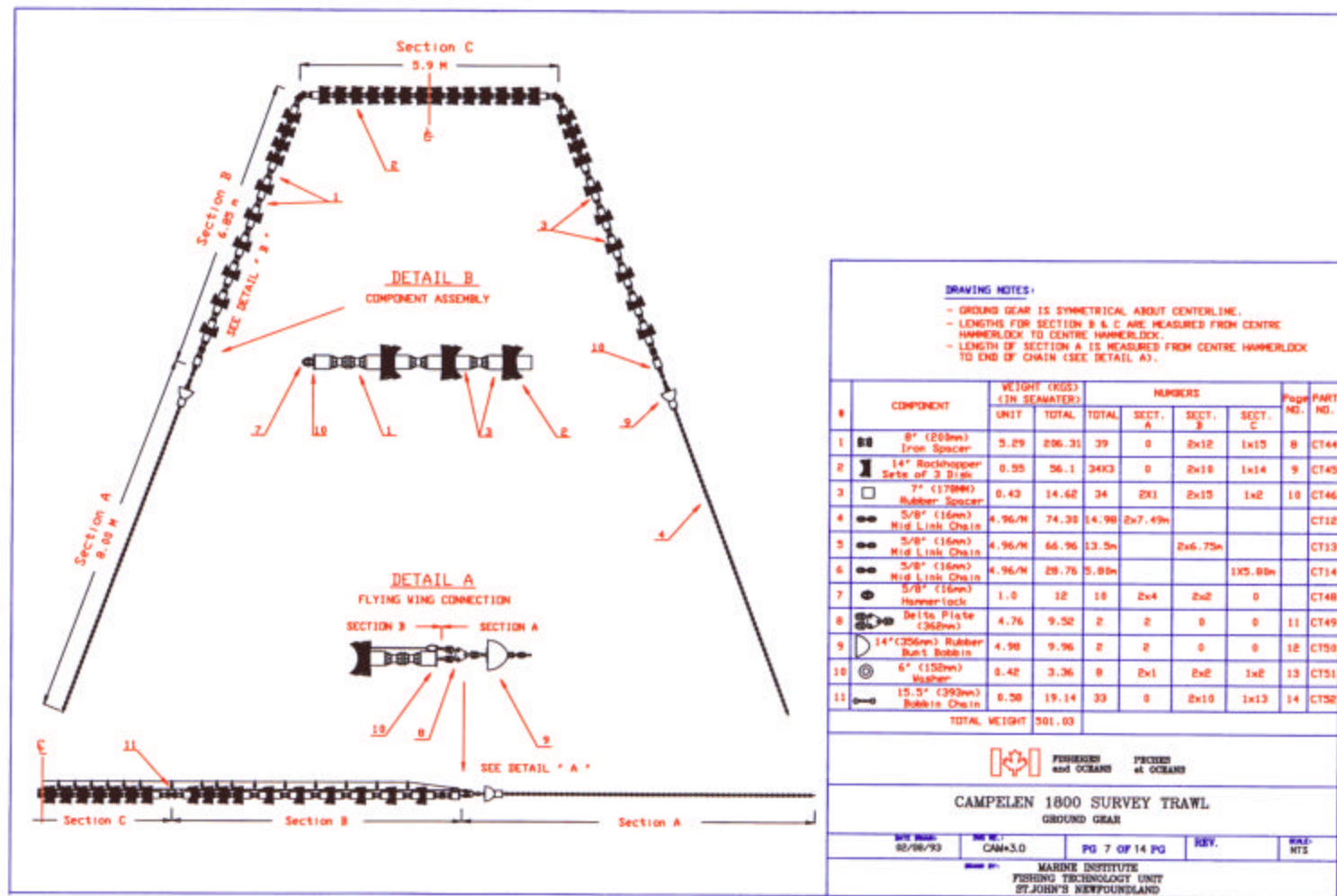


Fig. 4. Schematic plan of the rockhopper footgear of the Campelen 1800 shrimp trawl

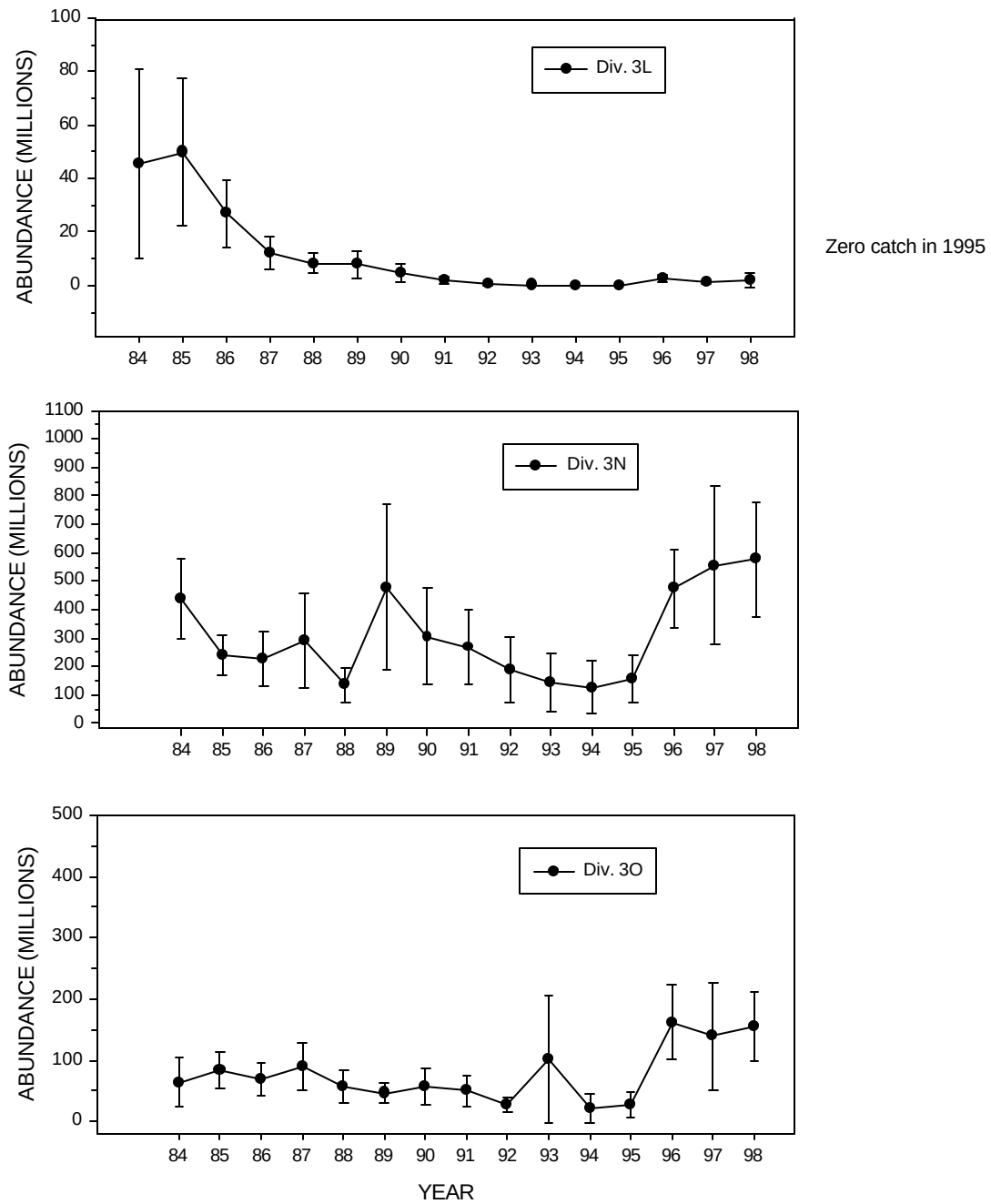


Fig. 5. Abundance estimates of yellowtail (with approx. 95% CI) from Canadian spring surveys in Campelen trawl units, 1984-98, by NAFO Division.

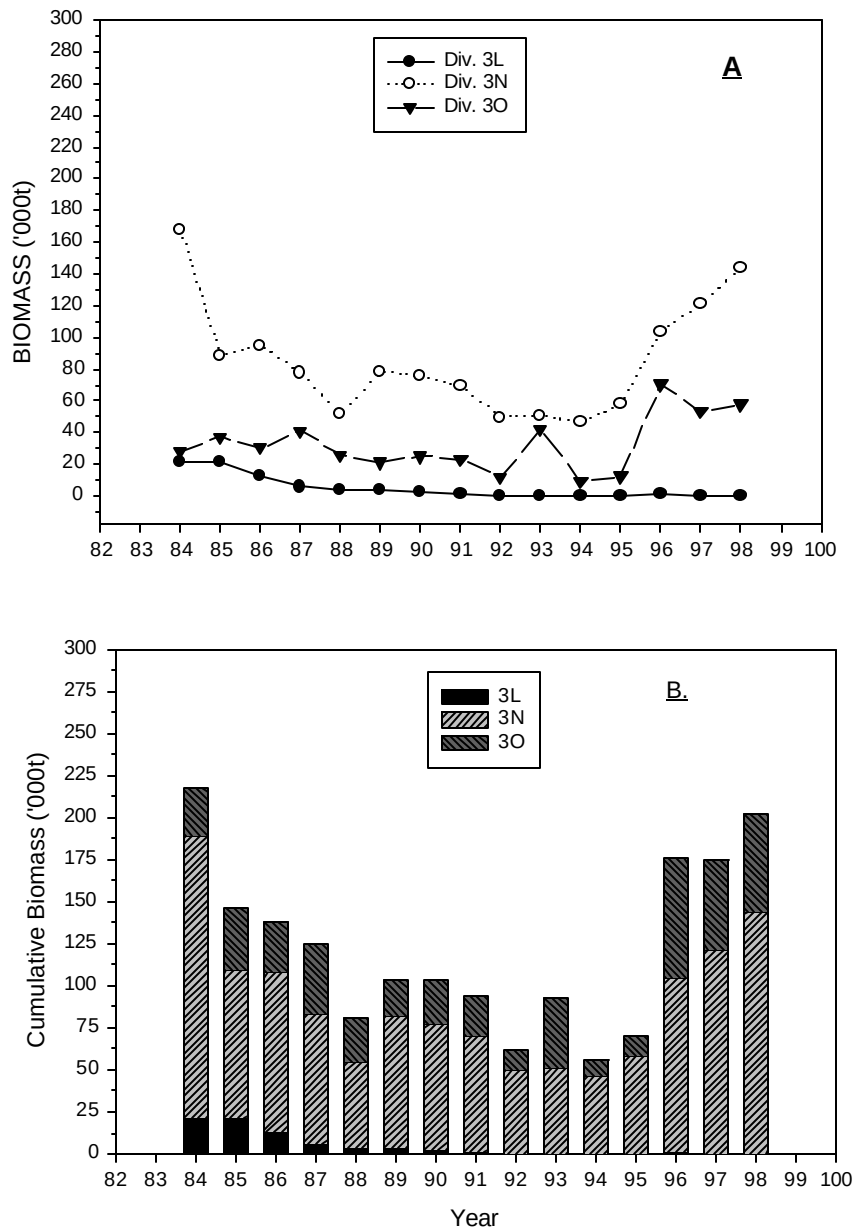


Fig. 6 **A.** Biomass estimates of yellowtail flounder by Division from the Canadian spring surveys from 1984-98.
B. Cumulative biomass estimates of yellowtail from Division 3LNO Canadian spring surveys from 1984-98.

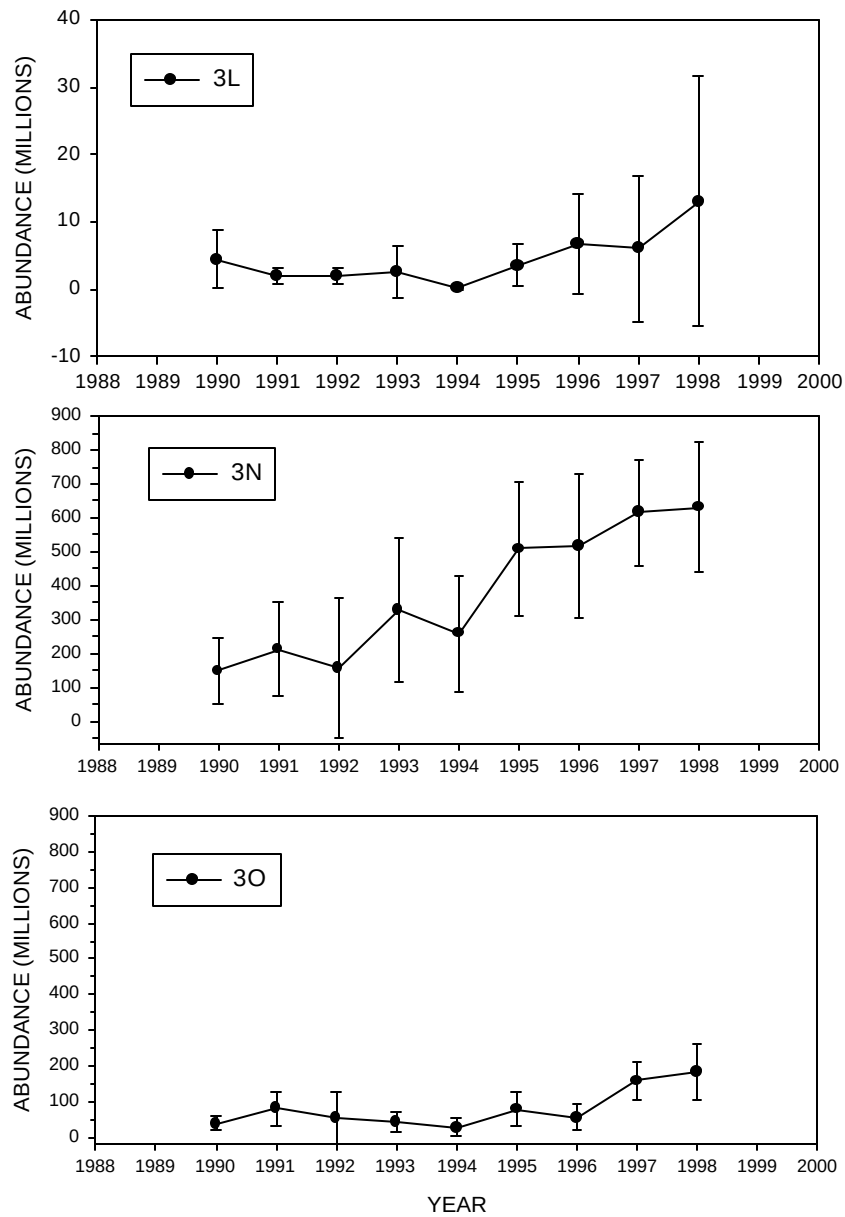


Fig. 7. Abundance estimates of yellowtail (with approx. 95% CI) from Canadian spring fall surveys in Campelen trawl units, 1990-98, by NAFO Division.

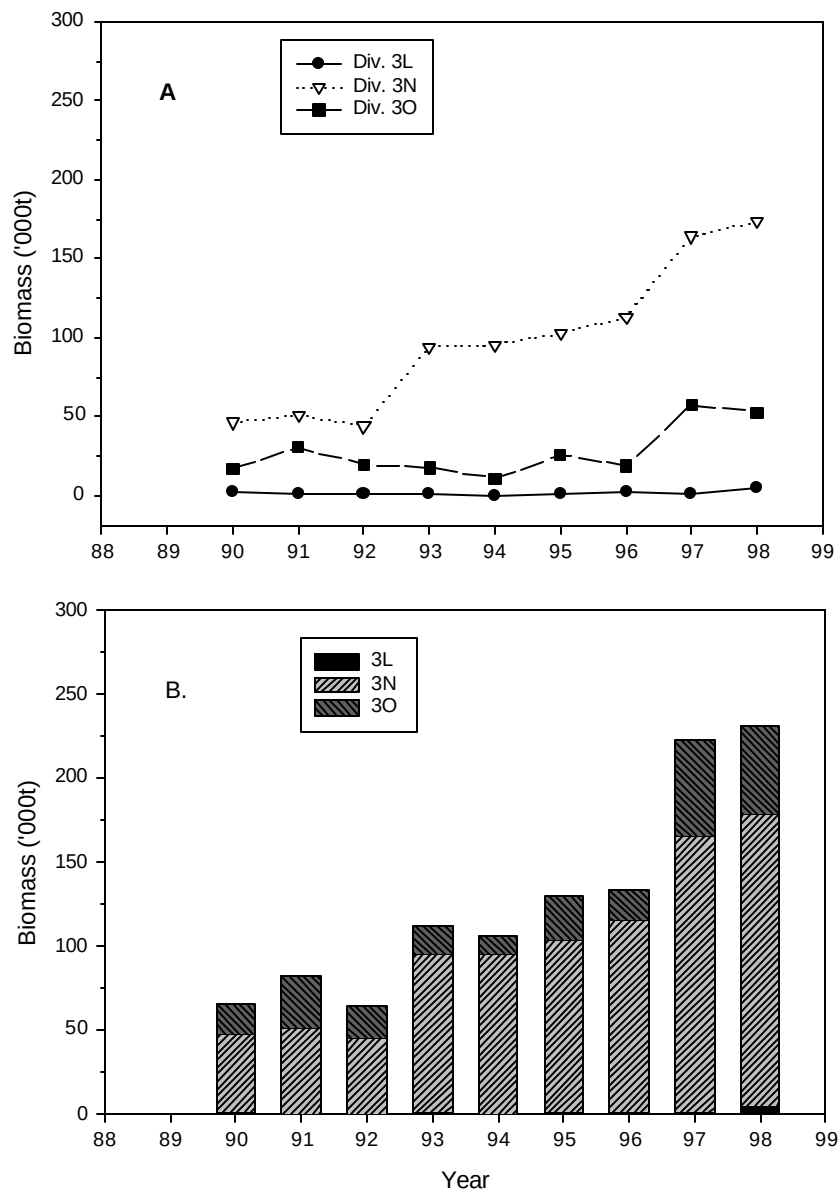


Fig.8. **A.** Biomass estimates of yellowtail flounder by Division from the Canadian fall surveys from 1990-98.
B. Cumulative biomass estimates of yellowtail flounder from Division 3LNO Canadian fall surveys from 1990-98.

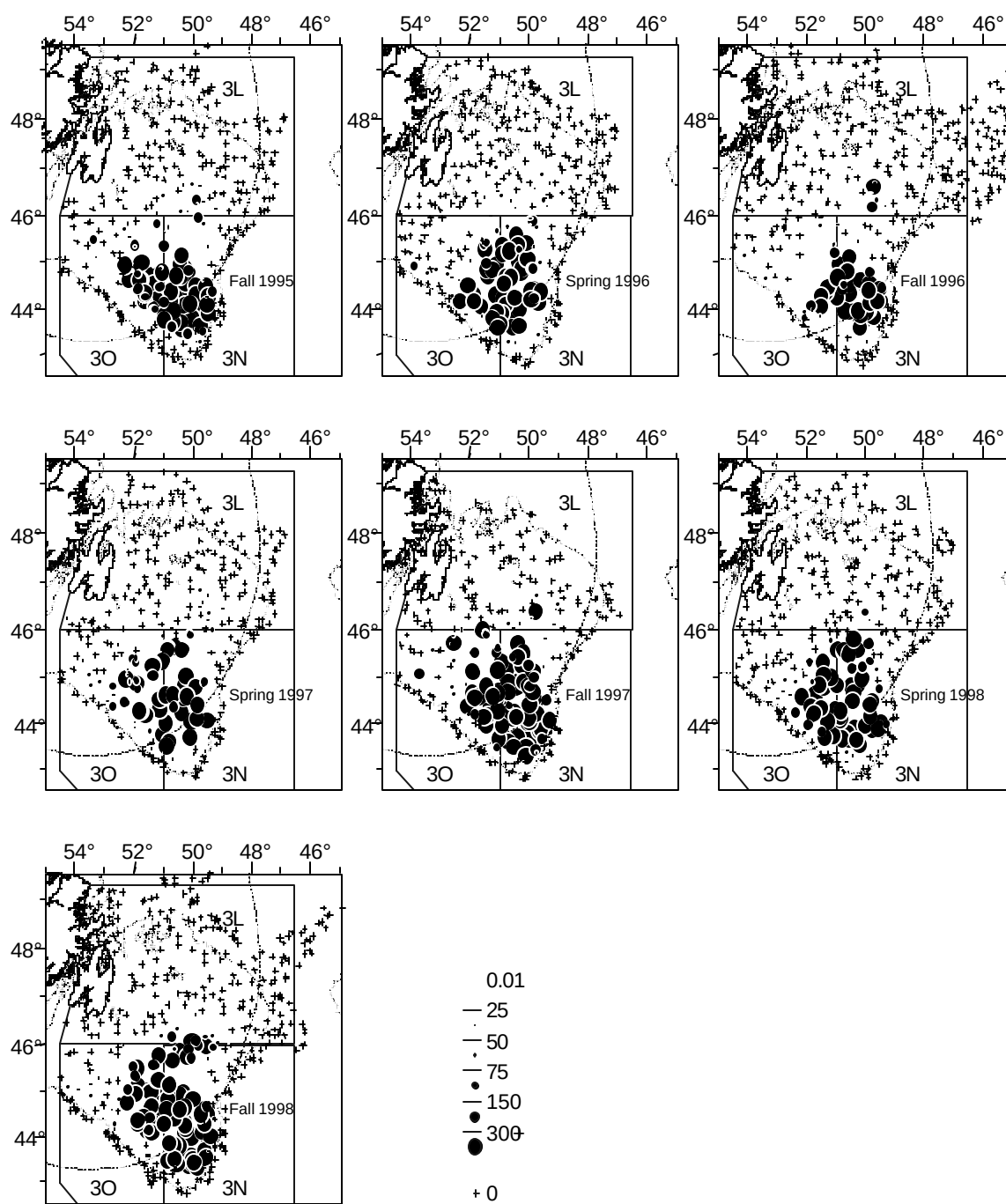


Fig. 9. Distribution of yellow tail flounder (standardized number per set) from stratified random surveys of the Grand Bank, NAFO Div. 3LNO from 1995-1998 based on Campelen trawl catches.

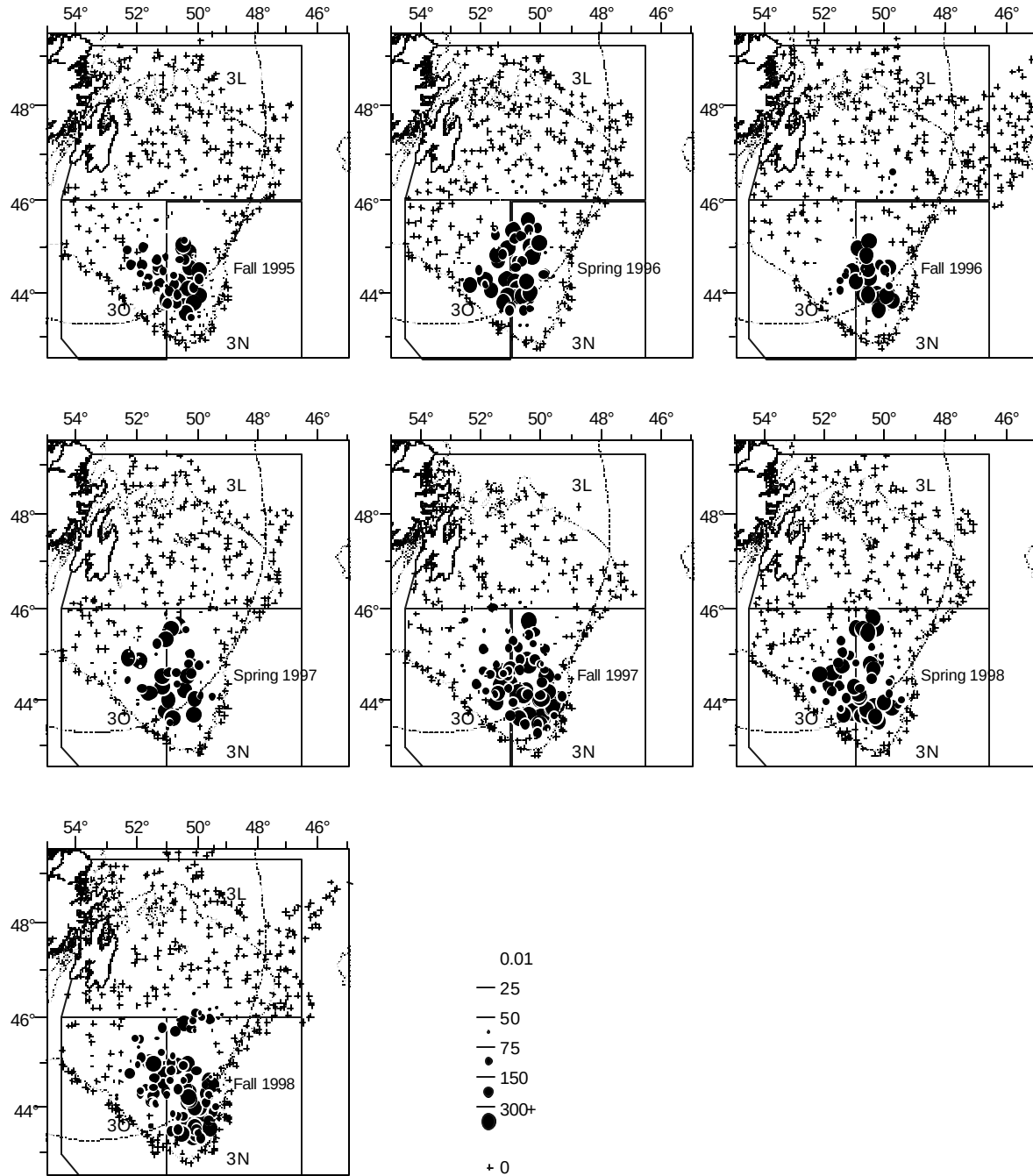


Fig. 10. Distribution of yellowtail flounder (standardized kg per tow) from stratified random surveys of the Grand Bank, NAFO Div. 3LNO from 1995-1998 based upon Campelen catches.