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Divisions 3LNO Yellowtail Flounder (*Limanda ferruginea*) in the 2013 and 2014 Canadian Stratified Bottom Trawl Surveys

by

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Abstract

Abundance and biomass indices of Grand Bank yellowtail flounder in NAFO Divisions 3LNO were derived from annual multi-species, random-stratified bottom trawl surveys conducted by Canada during the spring of 1984-2014 and during the autumn from 1990 to 2013. The autumn 2014 survey was incomplete due to survey vessel problems. The majority of the stock is found in depths less than 93 m and in Div. 3NO. Stock size and geographical range of yellowtail flounder declined from the mid-1980s to the mid-1990s, but since 1995 surveys show that the stock size has increased dramatically and expanded its northward range in 3L to re-occupy habitats on the northern Grand Bank. Abundance and biomass estimates from the spring surveys declined in 2013 and 2014, but have remained high. Fall survey estimates of abundance and biomass have remained stable at a high level in recent surveys.

Introduction

Annual multi-species, stratified-random bottom trawl surveys have been conducted by the Newfoundland region of the Canadian Department of Fisheries and Oceans on the Grand Bank, in NAFO Divs. 3LNO, during the spring (April-June) of each year since 1971. Since 1990, a second series of surveys has been carried out on the Grand Bank during the fall period, from October to December. However, since 1971 there have been two changes in survey gears and only one set of conversion factors has been developed for the 1984-1995 time series. Consequently only data from 1984 to 2014 will be presented here.

From both the spring and fall surveys, swept area abundance and biomass estimates are derived for yellowtail flounder (*Limanda ferruginea*) and serve as fishery-independent indices of stock size. Because catchability of the standard survey trawl is unknown and assumed to be <=1.0 (Walsh, 1996), the indices are considered to be relative estimates of stock size.

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 timing of the spring surveys, the frequency of fishing sets in the inshore strata (beginning in 1997) and the range of depths surveyed are shown in Table 1.

The 1984-2012 spring and the 1990-1994 fall surveys covered depths from 45 to 731 m. Beginning in the fall of 1995 with the use of the new Campelen survey trawl, the coverage of the fall surveys extended to 1 500m. Due to mechanical problems with the CCG *Teleost* survey vessel, only sets in the deepwater strata of Div. 3L were fished in 1995 (Table 2). Fall surveys of Divisions 3NO have had poor coverage in deep water strata in several years (see Brodie and Stansbury, 2007 and Healey and Brodie, 2009), but this is thought to have negligible effect on the abundance and biomass estimates of yellowtail flounder in most years, because the stock is found almost exclusively in depths less than 93m. Nevertheless, the exclusion of these deepwater sets does slightly overestimate the overall mean catch per tow by NAFO division in affected years. In the 2006 spring survey, there were also fewer sets in some strata in 3N, and stratum 373 was not surveyed. In recent years, this stratum contributed significant biomass to the total index and missing this stratum, coupled with reduced coverage in other important strata, the 2006 estimates of abundance and biomass may not be comparable to estimates in other years. In addition, in years 1995, 2002-2005, some northern portions of the surveys have overlapped into January of the following calendar year due to mechanical problems with the survey vessels. The 2014 fall survey was incomplete due to problems with the research vessel. These delays are not expected to affect yellowtail flounder estimates because of its shallow water distribution in the southern section of the survey area.

Survey gears and vessels

From 1971 to 1982 the surveys of the Grand Bank were conducted by the 54 m side trawler, 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, at the same time, the A.T. Cameron was replaced by the 50 m stern trawler, the CCGS Wilfred Templeman (WT). Occasionally the W. Templeman's sister ship, the CCGS 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 35 cm diameter rockhopper footgear. The Yankee and the Engel trawls were both towed at 3.5 kts, while the Campelen is towed at 3.0 kts (McCallum and Walsh, 1996). The Campelen trawl surveys of the Grand Bank began in the fall of 1995 aboard the CCGS Wilfred Templeman. The Campelen trawl also replaced the Yankee 41 shrimp trawl used in the annual fall juvenile groundfish surveys from 1985-94 (McCallum and Walsh, 1996). Beginning in the fall of 1996, the 63 m stern trawler, CCGS Teleost, began fishing mostly the deepwater survey sets of the annual fall surveys beyond 731 m in Div. 3LNO; however, shallower sets have also been fished when necessary (Table 2). In addition, the CCGS Alfred Needler has taken part in the fall surveys in some years. The Campelen trawl onboard the 2 other survey vessels is identical in construction and rigging as the one on the Wilfred Templeman. Since 1993, the geometry and performance of all bottom trawl surveys have been monitored by Scanmar trawl mounted acoustic instrumentation (Walsh and McCallum, 1995; McCallum and Walsh, 2001).

Time series

Conversion factors have been derived from comparative fishing trials to convert the 1984-95 spring and 1990-94 fall Engel trawl survey data into Campelen trawl units and were presented in Walsh *et al.* (1998a, 1998b). Survey data from 1971-82 have not been converted to Campelen trawl units and the unconverted time series can be found in the 1997 assessment paper (see Walsh *et al*., 1997). Conversion factors into Campelen trawl units for yellowtail flounder have also been derived for the 1985-94 late summer-early fall juvenile groundfish series and the abundance and biomass data are found in a 2005 NAFO SCR paper (see Walsh, 2005). However, additional conversions of the database will be needed and consequently only annual spring and fall survey data from 1984 and 1990 onward will be reported here.

Fishing and catch protocols

The Campelen carries out 15 minute tows using a towing speed of 3.0 knots and covers an average tow distance of 0.75 nautical miles. The catches are standardized to distance towed. The average wingspread used in estimating swept area abundance indices is 16.84 m and the average swept area is estimated to be 24 950 m^2. After each set, all species in the catch are separated, counted and weighed. From each haul, the total catch or a sub-sample is taken to collect biological data on size, age, maturity and feeding for all commercial species.

Results

Canadian Spring Surveys 1984-2014

Abundance and biomass trends:
Tables 4 to 15 give the survey catch rates by NAFO division in the form of stratified mean number and weight-per-tow, abundance and biomass indices with confidence limits. The large majority of the biomass is found in shallow strata (< 93m), and for brevity, only data for strata less than 184m are shown. Totals in each table are calculated using all sampled strata in each division, and percent of biomass in strata deeper than 183m are included in the biomass table for each division. Biomass > 183m was negligible in all years surveyed. Table 16 gives combined estimates for Div. 3LNO from 1984-2014. Figures 2 and 3 show plots of the abundance and biomass estimates, as well as mean number and weight per tow, of spring and fall surveys from 1984-2014. The 1999 survey estimate was thought to be a 'year effect' (Walsh *et al*., 2000; STACFIS, 2000). Table 3 identifies large fishing sets that may contribute to variation seen around some of the estimates of stock size in a given year. In 2006, problems with the survey vessel resulted in reduced coverage. Although priority was given to surveying important yellowtail flounder habitat, several key strata (eg 373 and 338) that had significant catch in previous surveys, were not sampled. Estimates from this survey should not be compared with other surveys in the time series which covered the majority of the yellowtail flounder stock area.

In Div. 3L, there was a continuous decline in abundance and biomass from 1985 to "0.0 t" in 1995 (Tables4-7, and 16; Fig. 2). From 1996 to 1998, the stock showed a marginal increase to stabilize at an average biomass level of 500 t and then increased (by 5550%) to a level of 28 kt in 1999. From 2000-2002 the abundance and biomass declined once more and by 2002 the biomass index was 600 t (1.6 million fish). From 2002 the abundance and biomass indices were variable but increased dramatically to the highest estimates in the time series in 2006 at 251.5 million fish and 85.7 kt biomass. Biomass and abundance estimates then declined in 3L and in 2009 were 13.2 Kt and 47 million fish. From 2010-2012 estimates increased steadily to 89 Kt and 238 million fish, and were the highest biomass (and second highest abundance) estimate in the series. In 2013 and 2014 biomass and abundance indices decreased each year, but still remain well above the levels of the early 90s. When the estimates are high most of the yellowtail flounder are generally found in stratum 363 and stratum 372.

Most of the 3LNO yellowtail flounder stock is found in NAFO division 3N. Here, the majority of the stock was distributed in and around the Southeast Shoal area (strata 375, 376, 360 and 361 in Fig. 1), although in recent surveys, the abundance and biomass increased in strata north of the Shoal, in particular strata 362 and 373 (Tables 4-7 and 16) and in several recent years, large sets were taken in the 93-183m depth range (strata 359 and 377). The biomass index declined gradually from 168 kt (435 million fish) in 1984 to 46 kt (135 million fish) by 1994, a decline of 73% (Fig. 2). For the same period, the high abundance estimate of 478 million fish in 1989, was mainly due to the strong 1985 and 1986 year-classes which was not reflected in the biomass estimate for that survey. After a slight increase from 1994 to 1995, the survey biomass in 1996 jumped by 80% to 104 kt (475 million fish) followed by a continued increase to a high of 238 500 t (965 million fish) in 1999. Since 1999, the survey abundance and biomass estimates were variable, but have shown a general increasing trend. The 2012 abundance estimate is the highest in the series (1.19 trillion fish) and second highest biomass estimate (315 kt). The 2006 survey results may not be comparable to other years since several strata were not surveyed that have had large yellowtail catch in the past (eg. strata 373). Estimates declined in this division as well in 2013 and 2014, but also remain in the range of the high estimates that have been observed since 1999.

Large catches in several strata in some years have contributed to the high variability seen around some estimates in the time series. Table 3 outlines large sets (> 400kg or >900 fish) in surveys since 1996.

In Div. 3O, the abundance and biomass estimates were somewhat stable but declined slightly from 1984 to 1995, excepting 1993 which has a higher value, but wide confidence limits (Tables 4-7 and 16; Fig. 2). The biomass index showed moderate fluctuations around an average value of 26 kt (59 million fish) for the period 1984-95. In 1996, the survey biomass dramatically increased by 492 % from 12 kt (29 million fish) in 1995 to

71 kt (162 million fish). Since 1996, estimates of biomass and abundance were variable but showed a general increase to 2011, with the exception of 2009, in which survey catches were low in 2 important strata (351 and 352). In Div. 3O most of the biomass is generally found in these two strata (see Fig.1) which border Div. 3N. In 2005, for example, 83% of the biomass estimate is due to catch in strata 351 and 352. Whether some of the annual fluctuations are related to movement between Div. 3N and 3O is unknown. The estimates of biomass and abundance were lower in 2013 and 2014 than in the previous surveys, but they remain high, and within the range of variability seen since the mid-90s.

In the spring surveys of Div. 3LNO the majority of the survey abundance and biomass was found in Div. 3N so total stock trends mimic that of Div. 3N. From 1989-1998 there were negligible amounts of yellowtail flounder in Div. 3L until the 1999 survey (Tables 4-7 and 16; Fig. 2) and, in recent years, there has been a substantial increase in the biomass estimate compared to the first two years of the survey. Biomass in Div. 3LNO increased rapidly in the late 1990s from the lowest levels in the mid-1990s. Between 1999 and 2011, abundance and biomass estimates were variable but showed a general increasing trend. Estimates for 2013 and 2014 declined slightly each year, but remain high, and within the range of variability of the series. Large catches probably contributed to the high variability around the estimates in several years, although only 1999 was thought to be a year effect (Walsh *et al*., 2000; STACFIS, 2000).

Canadian Fall Surveys, 1990-2014

Several recent surveys have had problems resulting in reduced coverage, particularly in deep water strata and also reduced sampling of some strata (see Table 2 and Healey and Brodie, 2009). The 2014 survey was not completed due to problems with the research vessel. Abundance and biomass indices of yellowtail flounder are generally unaffected by the reduced coverage, given that the majority of the stock is found in strata that have been sampled consistently. But mean number and mean weight per tow indices will be overestimated in years of poor survey coverage in deep water strata.

Abundance and biomass trends:

Tables 12-15 show stratified mean number and weight per tow, and abundance and biomass indices with 95% confidence limits, by stratum and division for the fall surveys, 1990-2014. Again, for brevity, only data for strata less than 184m are shown. Totals for the entire division are given in each table, and percent of biomass in strata deeper than 183m are included in the biomass table for each division, and those amounts were negligible in all years surveyed. Figure 3 shows plots of the abundance and biomass estimates, mean numbers and weights per tow by division from 1990-2013. Overall estimates by division and for 3LNO combined are given in Table 17.

In Div. 3L, abundance and biomass were very low and variable without trend from 1990-1995, reaching an estimate close to zero in 1994 (Fig. 3). Noteworthy is that a "0.0" t biomass was also estimated for the 1995 spring series. From 1990 to 95 the abundance varied around an average level of 2 million fish and then tripled to 6 million fish in 1995 and 1996. The biomass varied around an average level of 1 kt from 1990-1997 before increasing to about 26 kt in 2001 (Table 17). Abundance increased from 1997 (6M) to 75 million fish in 2001. A drop in both the abundance and biomass indices (of 56% and 46% respectively) in 2002 was followed by a general increase to the series high in 2010 (36k t; 135 million fish). There was an exception to the increasing trend in 2009, when there was a considerable drop in abundance and biomass (to 17kt and 45 million fish). In this year, 4 of 5 main strata showed declines. Estimates in 2011 to 2013 remain high. Estimates have wide confidence limits since 2001, and may be due in part to most of the biomass occurring in 2 strata (363 and 372, which border 3N, account for upwards of 90% of biomass estimates in some years (Table 12)). These increases in biomass in Div. 3L are thought to be the result of an extension of the range of yellowtail flounder with increasing stock size. There are obvious within year differences in the amount of yellowtail flounder caught in this Division and this is reflected in the high variability around the estimates for 1999-2001 and 2003-2013.

From 1990-92, the Div. 3N stock size fluctuated around an average value of 47 kt before doubling in size in 1993 to 94 kt (Table 17). The stock increased steadily to 369 kt in 2001 (Table 17; Fig. 3). Values have varied around 250 kt since, with the estimates in 2007 highest in the series at 378 kt. Similarly, the survey abundance from 1990-94 fluctuated around an average size of 222 million fish before showing a strong increasing in 1995 to 509 million fish and reaching 1.3 billion fish in 2001, representing an overall increase of 160% (Table 17; Fig 3). From 2001-2013, both the abundance and biomass estimates have varied around a level of 1.0 billion fish and 270 kt biomass, respectively (Fig. 3).

Large survey sets (>900 fish or >400kg per tow) are given in Table 3. In Div. 3N most large sets were taken in strata 360 and 376 between 1996 and 2000. Since then, the number of large sets has been increasing and found in more strata. In 2010 for example, 5 large sets were recorded in strata 376, and one in 360, and two other stata also had large sets. Similar to the spring surveys strata 360, 361, 362, 373 and 376 account for most of the biomass in this Division.

In Div. 3O, both the abundance and biomass index showed no obvious trend from 1990-96, with abundance fluctuating around an average value of 55 million fish and biomass fluctuating around an average level of 20 kt (Tables 12-15, and 17; Fig. 3). Then in 1997, the biomass level jumped by 205% to 26 kt (159 million fish). Since then estimates have been stable but variable at about 600 million fish and 60 kt. In 2012 abundance and biomass increased to the highest obsevered level in the series (113 kt; 342 million fish). Although confidence limits were wide for these estimates, the increases were seen in several strata. The 2013 estimates were lower, but still in the range of the 2009-2011 levels.

In several years, there were catches (>1 000 fish) (Table 3) taken in the surveys (weight range of 200-400 kg) and these large sets likely contributed to wide confidence limits in those years. For example, a large catch of 1200 fish (463 Kg) in the western stratum 338, may have contributed to the large variability around the 2001 fall estimate. Even though the estimate of stock size was low in 2002 there were 3 large catches taken on the Southeast shoal strata. Similar to the spring surveys, most of the biomass in this division was found in strata 351 and 352 which borders Div. 3N.

In the fall surveys of Div. 3LNO, similar to the spring surveys, the majority of the stock was found in Div. 3N. The abundance and biomass in this division has shown a general upward trend since the start of the surveys (Table 17 and Fig. 3). Since 1993, when the survey biomass was estimated to be 113 kt (372 million fish), estimates increased to a high of 476 kt (1.2 billion fish) in 2001, representing a 321% increase in stock biomass. The biomass in the Southeast Shoal's strata, 375 and 376, contribute significantly to the overall biomass: 22% on average in the last 3 years, and the large catches in these strata contribute to the high variability around these two survey estimates. Since 2001, indices have been variable but stable about 350kt and (1.2 billion fish). 2013 estimates of biomass and abundance remain high.

Distribution

Yellowtail flounder are concentrated mainly in Div. 3N and the bordering areas of Div. 3O and to a lesser extent the border of Div. 3LN, similar to most years in the time series. Figures 4 to7 show the standard number and weight from the catches of individual fishing sets from the spring and fall Campelen surveys for 2011-2014. A time series of distribution plots for previous surveys (1984-2010) can be found in Maddock Parsons (2011).

In the 2005-2014 surveys, yellowtail flounder were most abundant in Division 3N, particularly in strata on the Southeast Shoal (375 & 376) and those immediately to the west (strata 360 & 361). These strata straddle the Canadian 200 mile (360 km) limit and extend into the Regulatory Area (Fig. 1). Observed distributions were comparable with earlier descriptions of the distribution of this stock (see Maddock Parsons, 2011). Yellowtail flounder also appear to be more abundant in the Regulatory Area of Division 3N in recent surveys than years previous to 1999 and the northward distribution of the stock has extended to Div. 3L, similar to mid-1980s when the stock size was high (Simpson and Walsh 2004). Brodie *et al.* (1998) noted that the northward range extension of yellowtail flounder on the Grand Bank contracted with decreasing stock size during the mid to late 1980s and early 1990s so that the bulk of the stock was south of 45°N. Simpson and Walsh (2004) have shown that the observed range contraction of yellowtail flounder at low population levels represents selection for preferred habitats in the southern area of the Bank where depth and temperature are important covariates affecting the spatial pattern. During periods of large increases in stock size, the range of yellowtail flounder expanded into less favourable habitats to north and to a lesser extent, westward in support of MacCall's Basin hypothesis. Depth, but not temperature, played an influential role. Recent tag returns from the 1998-2000 fisheries also confirmed the northward extension of the stock in recent years (Walsh *et al*., 2001b; Walsh *et al*., 2006).

Figure 8 shows a plot of the proportion of biomass north of 45° N from 1973 to 2014. The range of the stock has extended northward since 1995. In most years since 1996, the proportion of biomass north of 45° N is higher in the spring than in the fall. One obvious exception is the spring of 2002, when the proportion of biomass is much lower than in fall 2002, and is close to the low values in the early 1990s. The surrounding data suggest that the 2002 spring point is anomalous. With the exception of the 2009 spring survey, which only estimated 21% of the biomass north of 45°N, recent surveys showed 30 to 40% of the biomass in the northern part of the stock area.

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Table 1. Summary of the Canadian RV Spring surveys 1984-2014. Survey gear changed from Engel to Campelen in autumn of 1995.

		3L		3N		3O		3LNO	
Year	Ship	Nsets	Depth Range	Nsets	Depth Range	Nsets	Depth Range	1st set	Last set
1984	A. Needler	37	67 - 185 m	61	39 - 360 m	56	66 - 350 m	28-Apr	21-May
1985	W. Templeman	221	63 - 705 m	36	52 - 310 m			11-Apr	26-May
	A. Needler			49	46 - 320 m	93	67 - 355 m		
1986	W. Templeman	211	64 - 339 m	101	41 - 354 m	102	66 - 326 m	18-Apr	25-May
1987	W. Templeman	181	61 - 356 m	91	46 - 344 m	100	65 - 356 m	23-Apr	01-Jun
1988	W. Templeman	160	65 - 558 m	77	41 - 330 m	84	66 - 335 m	21-Apr	24-May
1989	W. Templeman	205	64 - 350 m	94	45 - 352 m	101	66 - 337 m	20-Apr	28-May
1990	W. Templeman	156	63 - 346 m	85	42 - 320 m	93	65 - 340 m	22-Apr	04-Jun
1991	W. Templeman	143	66 - 685 m	93	40 - 645 m	116	65 - 635 m	19-Apr	29-May
1992	W. Templeman	178	64 - 710 m	94	44 - 625 m	91	66 - 630 m	22-Apr	07-Jun
1993	W. Templeman	181	64 - 680 m	85	40 - 695 m	81	66 - 620 m	27-Apr	10-Jun
1994	W. Templeman	160	64 - 911 m	76	44 - 895 m	81	66 - 862 m	30-Apr	10-Jun
1995	W. Templeman	151	65 - 646 m	89	42 - 668 m	85	65 - 640 m	03-May	14-Jun
1996	W. Templeman	188	66 - 664 m	82	42 - 665 m	86	65 - 685 m	07-May	27-Jun
1997	W. Templeman	158	60 - 681 m	71	35 - 689 m	81	62 - 669 m	30-Apr	26-Jun
1998	W. Templeman	163	53 - 721 m	88	38 - 682 m	93	64 - 657 m	12-May	30-Jun
1999	W. Templeman	177	41 - 692 m	82	40 - 659 m	86	62 - 679 m	11-May	29-Jun
2000	W. Templeman	134	61 - 681 m	81	45 - 664 m	83	61 - 694 m	11-May	29-Jun
2001	W. Templeman	154	34 - 695 m	79	40 - 650 m	79	64 - 699 m	29-Apr	24-Jun
2002	W. Templeman	146	42 - 710 m	79	40 - 641 m	79	63 - 628 m	27-Apr	22-Jun
2003	W. Templeman	156	62 - 698 m	79	39 - 681 m	79	63 - 726 m	08-May	26-Jun
2004	W. Templeman	151	47 - 710 m	79	44 - 675 m	79	61 - 636 m	12-May	26-Jun
2005	W. Templeman	133	64 - 672 m	78	45 - 691 m	79	66 - 719 m	09-May	29-Jun
2006	W. Templeman	141	60 - 701 m	4	68 - 77 m	3	75 - 84 m	10-Jun	30-Jun
	A. Needler			18	46 - 68 m	29	64 - 103 m		
2007	W. Templeman	97	61 - 702 m	79	44 - 636 m	79	64 - 719 m	03-May	12-Jul
	Teleost	40	66 - 171 m						
2008	W. Templeman	79	60 - 684 m	71	40 - 623 m	80	64 - 704 m	23-May	30-Jun
	Teleost	43	97 - 641 m						
2009	A. Needler	61	63 - 676 m	78	44 - 668 m	79	64 - 674 m	13-May	23-Jun
	Teleost	81	61 - 694 m						
2010	A. Needler	130	59 - 715 m	78	39 - 714 m	80	60 - 673 m	08-May	25-Jun
2011	A. Needler	179	57 - 723 m	133	40 - 673 m	121	63 - 716 m	08-May	22-Jun
2012	A. Needler	177	60 - 723 m	133	38 - 666 m	123	63 - 656 m	27-Apr	19-Jun
2013	A. Needler	134	62 - 632 m	79	40 - 684 m	79	64 - 650 m	23-Apr	20-Jun
2014	A. Needler	72	65 - 702 m					29-May	22-Jun
	Teleost	63	64 - 321 m	60	47 - 662 m	59	61 - 662 m		

Table 2. Summary of the Canadian RV Autumn surveys 1990-2014. Survey gear changed from Engel to Campelen in autumn 1995.

		3L		3N		3O		3LNO	
Year	Ship	Nsets	Depth Range	Nsets	Depth Range	Nsets	Depth Range	1st set	Last set
1984	G. Atlantica							26-Jul	03-Sep
	W. Templeman	209	62 - 688 m						
1985	G. Atlantica							09-Oct	18-Nov
	W. Templeman	232	63 - 710 m						
1986	G. Atlantica							13-Nov	30-Nov
	A. Needler	142	65 - 715 m						
1987	G. Atlantica							15-Oct	01-Nov
	W. Templeman	165	62 - 346 m						
1988	G. Atlantica							26-Oct	13-Nov
	W. Templeman	189	62 - 338 m						
1989	G. Atlantica							12-Oct	29-Oct
	W. Templeman	174	64 - 354 m						
1990	G. Atlantica							18-Oct	09-Dec
	W. Templeman	161	65 - 695 m	80	47 - 310 m	91	63 - 495 m		
1991	G. Atlantica							19-Oct	02-Dec
	W. Templeman	219	63 - 680 m	67	42 - 638 m	84	65 - 715 m		
1992	G. Atlantica							20-Oct	29-Nov
	W. Templeman	215	63 - 693 m	34	40 - 437 m	54	66 - 450 m		
1993	G. Atlantica							24-Oct	04-Dec
	W. Templeman	153	64 - 670 m	70	44 - 670 m	75	64 - 676 m		
1994	G. Atlantica							25-Oct	07-Dec
	W. Templeman	200	65 - 715 m	73	42 - 641 m	75	65 - 696 m		
1995	W. Templeman	161	63 - 640 m	90	40 - 650 m	81	63 - 730 m	26-Sep	25-Jan
	Teleost	5	733 - 1210 m						
1996	W. Templeman	180	51 - 671 m			19	65 - 139 m	09-Oct	12-Dec
	A. Needler			54	37 - 309 m	15	63 - 304 m		
	Teleost	31	805 - 1433 m	13	390 - 1147 m	24	68 - 690 m		
1997	W. Templeman	134	35 - 714 m	74	41 - 769 m	73	64 - 611 m	26-Sep	20-Dec
	Teleost	71	161 - 1436 m						
1998	W. Templeman	172	34 - 675 m	78	42 - 1079 m	87	61 - 1076 m	10-Oct	16-Dec
	Teleost	32	691 - 1437 m	12	834 - 1447 m				
1999	W. Templeman	169	63 - 1407 m	68	39 - 664 m	75	58 - 692 m	13-Oct	12-Dec
	Teleost	1	1366 - 1366 m						
2000	W. Templeman	102	42 - 447 m	70	46 - 642 m	76	62 - 654 m	11-Oct	18-Dec
	Teleost	74	152 - 1430 m	24	747 - 1419 m	24	752 - 1424 m		
2001	W. Templeman	169	38 - 702 m	70	45 - 660 m	75	67 - 703 m	22-Sep	06-Dec
	A. Needler	2	187 - 203 m						
	Teleost	34	146 - 1457 m	24	739 - 1410 m	22	803 - 1391 m		
2002	W. Templeman	176	35 - 670 m	70	44 - 675 m	75	65 - 696 m	05-Oct	02-Dec
	Teleost	30	763 - 1431 m	24	811 - 1429 m	24	775 - 1504 m		
2003	W. Templeman	175	32 - 702 m	70	43 - 727 m	75	63 - 650 m	23-Sep	20-Jan
	Teleost	30	753 - 1446 m			8	761 - 1382 m		
2004	W. Templeman	143	44 - 653 m	69	40 - 659 m	76	63 - 634 m	31-Oct	19-Dec
	Teleost	4	151 - 522 m						
2005	W. Templeman	120	50 - 706 m	69	42 - 633 m	75	60 - 649 m	04-Oct	29-Jan
	A. Needler	57	121 - 667 m						
	Teleost	7	803 - 1351 m	17	776 - 1445 m	24	754 - 1410 m		
2006	W. Templeman	151	61 - 641 m	70	46 - 650 m	74	63 - 674 m	30-Sep	18-Dec
	Teleost	34	111 - 1401 m						
2007	W. Templeman	120	61 - 694 m	69	48 - 652 m	75	64 - 632 m	06-Oct	20-Dec
	Teleost	48	81 - 1424 m	25	775 - 1419 m	24	753 - 1410 m		
2008	W. Templeman	83	62 - 664 m	64	38 - 643 m	66	60 - 661 m	03-Oct	13-Nov
	A. Needler	43	71 - 332 m						
	Teleost								
2009	A. Needler	130	62 - 682 m	64	42 - 708 m	76	60 - 696 m	02-Oct	20-Dec
	Teleost	30	784 - 1385 m	11	798 - 1409 m	24	768 - 1397 m		
2010	A. Needler	141	58 - 657 m	68	40 - 614 m	75	61 - 667 m	30-Sep	20-Dec
	Teleost	55	100 - 1448 m	4	855 - 1219 m				
2011	A. Needler	129	61 - 663 m	113	43 - 673 m	115	64 - 692 m	29-Sep	18-Dec
	Teleost	12	201 - 529 m						
2012	A. Needler	168	65 - 725 m	114	39 - 641 m	117	62 - 631 m	30-Sep	03-Dec
2013	A. Needler	142	57 - 657 m	70	42 - 681 m	75	66 - 630 m	19-Sep	15-Nov
	Teleost	6	100 - 304 m						
2014	Teleost	170	62 - 1388 m	3	313 - 692 m			06-Dec	17-Jan

Table 3.Large sets for Canadian spring and fall surveys 1996-2014. Sets with >900 fish or >400 kg are included in the total for each stratum.

			year	Data																										
			1996			1997			1998			1999			2000			2001			2002			2003			2004		
season	div	strata	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets
Spring	3N	360	1340	191	1				1685	310	1	7504	2238	4				3455	810	3	7341	2076	6	2027	579	2	2992	1283	3
		361	977	148	1				1164	251	1	1140	146	1				998	243	1							990	220	1
		362							2832	892	2	3027	1236	3	1274	400	1	3045	588	2									
		373													2294	901	2	9648	3308	2				906	319	1			
		375	1150	119	1	1261	221	1	1226	292	1	1029	130	1															
		376				3273	417	2	1007	188	1	3858	598	3				7218	1586	4				4657	1076	3	1227	316	1
Fall	3N	360				4260	1518	2	1006	211	1	972	253	1	1060	238	1				4474	1799	3	2720	985	2	2052	683	2
		361	950	307	1	2066	905	2	2978	858	2							1275	376	1	1977	534	2	2327	579	2			
		362										2710	438	2				2866	848	2	1289	296	1				1492	225	1
		373																									943	385	1
		375													1020	232	1				1103	296	1				9990	2167	5
		376	2080	270	2	4281	669	3	1281	307	1	1753	360	1	15158	4503	6	19004	4474	6	2732	556	2	3255	950	2	2934	603	2
	3O	338																2384	927	2									
		351																						1345	255	1	929	233	1
		352													924	235	1												
		353																						993	340	1			

			year	Data																														
			2005			2006			2007			2008			2009			2010			2011			2012			2013			2014		
season	div	strata	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets	#	wt (kg)	# sets
Spring	3L	363																						4525	1817	4						
	3N	360	2386	838	2	5649	1762	4	5313	1081	3	9248	3009	4				4750	1221	3	5812	2123	4	13070	3396	8	5242	1333	3			
		361	1014	266	1							944	132	1																		
		362	964	328	1	1366	396	1	982	302	1	1063	357	1										1622	312	1						
		373	934	376	1				1843	770	2	2056	811	2	2550	825	2	2892	990	2	1260	389	1	3694	1011	2	981	272	1			
		374																2634	1073	2	918	247	1				1100	415	1			
		375													1128	302	1															
		376	3338	963	2	3248	821	2	2307	512	2	2755	635	2	3980	1062	3	6851	1782	5	2412	488	2	4622	1118	2	1203	350	1	1360	326	1
		377																									1094	326	1			
	3O	338																1302	391	1												
Fall	3L	372																948	207	1												
	3N	360				3518	1543	2	9159	2571	6	955	220	1				1033	233	1	1241	316	1	1015	188	1						
		361							946	167	1																1078	202	1			
		362										1107	253	1																		
		373							1292	365	1							3244	897	2												
		374																			3682	1725	2				2224	716	1			
		375	1515	293	1				1201	302	1	1070	316	1	2395	544	2	6321	1126	3				1131	259	1	936	323	1			
		376	25510	4750	8	7776	1648	4	8418	1988	5	3578	1117	2	1081	243	1	10246	2462	5	903	155	1	1274	374	1	4624	1272	3			
		377																						3320	830	2						
	3O	351																						4474	1540	2						
		352	1001	388	1							1084	212	1																		

Table 4. Biomass (kt) of yellowtail flounder by stratum and NAFO Division (strata <184m only) from Spring surveys 1984-1999.

NAFO Div	Max depth (m)	Stratum	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
3L	55m	784															0.0	0.0
	91m	350	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	4.6
		363	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	12.6
		371		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	0.2
		372	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	8.2
		384		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	0.0
		785															0.0	0.0
	183m	328	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	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		0.0	0.0	0.0	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		0.0	0.0	0.0	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	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	2.3
		364	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	0.5
		365		0.0	0.0	0.0	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		0.0	0.0	0.0	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		0.0	0.0	0.0	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		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		786															0.0	0.0
		787															0.0	0.0
		788																0.0
		790																0.0
		793																0.0
		794																0.0
		797																0.0
		799																
3L Total			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	28.5
3L Upper CL			38.1	32.0	18.3	8.5	5.4	6.7	4.0	1.8	0.4	0.3	0.1		1.7	0.8	1.3	46.2
3L Lower CL			5.6	10.2	6.9	3.1	2.1	1.2	0.5	0.4	-0.1	-0.1	0.0		0.5	0.1	-0.3	10.9
3N	55m	375	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	21.9
		376	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	31.0
	91m	360	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	76.5
		361	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	31.4
		362	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	57.6
		373	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	11.1
		374	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	8.8
		383	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	0.0
	183m	359	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3N Total			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	238.5
3N Upper CL			223.1	111.9	135.1	108.5	71.3	115.4	108.0	95.1	79.1	86.5	80.9	87.1	129.7	171.5	192.5	305.7
3N Lower CL			112.3	64.5	55.2	46.6	31.5	41.3	43.4	43.0	20.1	15.0	11.7	28.6	78.2	71.1	94.8	171.2
3O	91m	330	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	0.1
		331	1.4	1.9	0.2	0.8	0.3	0.9		0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0	1.7
		338	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	7.2
		340	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	1.0
		351	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	31.1
		352	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	39.1
		353	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	18.2
	183m	329	0.0	0.0	0.0	0.0	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	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	0.3
		337	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	0.1
		339	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	0.0
		354	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	0.0
3O Total			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	98.7
3O Upper CL			45.3	50.7	41.4	58.9	36.2	28.5	37.8	36.3	17.0	83.2	17.9	22.2	96.2	82.7	80.1	130.6
3O Lower CL			11.1	24.3	19.5	23.6	15.5	14.4	12.4	10.3	6.2	1.6	0.6	3.3	44.9	23.7	36.0	66.8
3LNO Overall			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	365.7
3LNO Upper CL			276.1	175.2	179.6	159.5	103.0	141.4	137.4	121.8	91.1	143.7	89.8	100.9	210.8	231.3	254.8	440.2
3LNO Lower CL			159.3	118.3	96.8	89.7	59.0	66.1	68.8	65.1	31.7	42.8	21.5	40.4	140.4	118.6	149.6	291.2

Table 5. Biomass (kt) of yellowtail flounder by stratum and NAFO Division (strata <184m only) from Spring surveys 2000-2014.

NAFO Div	Max depth (m)	Stratum	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784		0.0	0.0		0.0										
	91m	350	2.4	0.6	0.0	0.7	1.3	2.3	1.1	1.1	4.4	0.3	0.0	8.9	6.6	9.8	0.9
		363	10.7	1.3	0.0	19.0	5.8	20.6	35.3	33.1	17.4	5.5	4.0	18.5	58.0	18.7	10.0
		371	0.0	0.0	0.0	0.4	0.0	3.2	0.7	0.2	0.0	0.0	1.1	1.0	0.9	6.8	0.9
		372	4.1	2.4	0.5	14.5	8.0	17.2	41.2	18.9	15.5	7.5	22.9	26.2	16.3	21.6	15.8
		384	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.3	0.1	0.0	0.6	0.9	3.6	8.8	1.8
		785		0.0	0.0		0.0										
	183m	328	0.0	0.0	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	0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.2	1.5	0.0	0.0	0.1	0.7	0.1	0.0
		342	0.0	0.0	0.0	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	0.0	0.0	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	0.0	0.0	0.0	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	0.3	0.0	0.0	0.0	0.0	0.0	1.5	7.0	0.2	0.0	0.0	0.1	0.5	0.5	4.9
		364	0.1	0.0	0.0	0.0	0.0	0.3	3.7	0.1	4.1	0.0	0.1	0.0	1.9	0.0	0.1
		365	0.0	0.0	0.0	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	0.0	0.0	0.0	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	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
		390	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		786		0.0			0.0							0.0			
		787		0.0			0.0							0.0			
		788															
		790															
		793															
		794				0.0											
		797				0.0											
		799					0.0										
3L Total			17.5	4.4	0.6	34.7	15.3	43.6	85.7	60.9	43.2	13.2	28.6	55.8	88.6	66.3	34.5
3L Upper CL			25.7	8.9	1.2	59.5	29.0	73.9	116.4	86.9	69.6	25.3	46.0	81.5	133.9	95.3	55.3
3L Lower CL			9.3	0.0	-0.1	10.0	1.6	13.3	54.9	34.9	16.9	1.1	11.2	30.1	43.2	37.3	13.7
3N	55m	375	15.4	18.5	14.4	29.3	20.6	17.8	21.6	31.9	22.3	30.2	12.2	22.9	29.1	27.7	35.3
		376	15.0	52.3	10.4	54.8	43.2	50.7	44.2	43.3	43.9	56.8	58.6	43.7	46.2	44.5	49.7
	91m	360	26.2	60.2	87.9	78.7	73.4	62.6	125.0	52.2	135.3	40.3	85.1	89.8	112.4	90.2	32.1
		361	32.9	41.9	26.2	41.7	33.6	26.1	31.5	30.3	21.9	22.9	13.0	28.8	24.3	18.8	14.9
		362	56.3	42.9	4.3	29.2	27.2	47.9	85.2	45.0	35.4	17.7	27.0	34.3	35.1	31.6	57.1
		373	42.0	79.0	2.8	33.1	5.9	43.4		49.4	51.4	23.6	46.0	23.2	44.5	30.0	25.6
		374	9.5	3.1	1.3	13.2	12.7	14.7	11.5	37.7	16.3	22.0	33.0	22.1	9.7	22.6	16.9
		383	0.0	0.0	0.0	0.0	0.0	0.2		0.4	2.7	0.0	1.8	1.3	7.6	5.8	0.5
	183m	359	0.1	0.0	0.0	0.0	0.0	0.0		0.4	0.7	0.0	0.1	0.1	4.9	0.8	0.0
		377	0.0	0.0	0.0	0.0	0.0	0.0		2.3	0.3	0.0	0.1	0.8	1.4	2.3	0.3
		382	0.0	0.0	0.0	0.0	0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
3N Total			197.3	297.9	147.3	280.2	216.7	263.7	319.1	292.8	330.4	213.5	276.9	266.9	315.3	274.9	232.4
3N Upper CL			248.4	446.2	192.0	332.2	276.3	327.5	403.0	353.8	442.2	267.0	347.5	338.9	391.0	347.6	295.8
3N Lower CL			146.3	149.6	102.6	228.2	157.2	199.8	235.1	231.7	218.5	160.0	206.3	194.8	239.5	202.2	169.1
3O	91m	330	6.8	0.2	0.5	0.6	0.9	0.9	1.9	3.4	2.9	0.7	1.2	5.0	1.2	1.4	0.6
		331	1.2	0.6	0.4	2.4	0.8	1.2		0.7	2.3	1.0	5.0	3.4	2.0	0.5	1.6
		338	4.7	14.1	3.3	3.0	1.6	2.4	5.0	13.0	4.6	26.4	27.9	7.4	16.9	4.2	1.6
		340	4.2	1.0	0.7	4.8	0.5	3.9	10.2	6.9	9.0	1.9	2.4	6.6	8.2	8.0	6.8
		351	12.1	15.4	4.8	9.7	21.1	35.0	27.7	20.5	34.6	0.8	14.7	32.9	27.2	13.5	30.8
		352	35.5	26.7	33.2	48.4	34.6	31.6	42.0	38.0	22.7	13.1	21.4	36.9	14.5	21.6	18.9
		353	7.4	4.4	6.6	2.5	16.4	6.0	11.5	6.5	6.9	0.5	16.1	7.5	14.8	6.8	4.6
	183m	329	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
		332	0.0	0.3	1.4	0.3	0.0	0.1		0.1	0.2	0.0	0.2	0.2	0.1	0.0	0.0
		337	0.1	0.0	0.5	0.0	0.0	0.2		0.0	0.1	0.0	0.3	0.2	0.0	0.0	0.0
		339	0.1	0.9	0.0	0.2	0.0	0.2	0.8	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.1
		354	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
3O Total			72.1	63.6	51.6	72.0	75.8	81.5	99.1	89.3	83.3	44.4	89.2	100.2	85.6	56.2	65.2
3O Upper CL			93.9	91.7	83.7	90.7	100.7	114.3	140.6	117.2	113.7	84.9	132.3	132.9	112.8	75.7	92.4
3O Lower CL			50.4	35.6	19.5	53.3	50.9	48.6	57.7	61.5	52.8	4.0	46.1	67.5	58.5	36.7	37.9
3LNO Overall			287.0	366.0	199.5	386.9	307.9	388.8	503.8	443.0	456.9	271.2	394.7	422.9	489.4	397.3	332.1
3LNO Upper CL			342.2	515.7	252.1	445.6	372.4	463.8	596.8	513.3	573.0	334.8	475.3	503.8	577.6	476.2	401.1
3LNO Lower CL			231.8	216.2	146.9	328.3	243.3	313.7	410.8	372.7	340.7	207.5	314.2	342.0	401.3	318.5	263.1

Table 6. Abundance (millions)of yellowtail flounder by stratum for Division 3L (strata <184m only) from Spring surveys 1984-1999.

NAFO Div	Max depth (m)	Stratum	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
3L	55m	784															0.0	0.0
	91m	350	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	9.4
		363	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	23.2
		371		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	0.0	0.4
		372	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	16.0
		384		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	0.0
		785															0.0	0.0
	183m	328	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	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	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	0.0
		343		0.0	0.0	0.0	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		0.0	0.0	0.0	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	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	5.2
		364	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	1.1
		365		0.0	0.0	0.0	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		0.0	0.0	0.0	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		0.0	0.0	0.0	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		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		786															0.0	0.0
		787															0.0	0.0
		788																0.0
		790																0.0
		793																0.0
		794																0.0
		797																0.0
		799																
3L Total			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	55.4
3L Upper CL			79.3	77.3	39.6	18.3	11.9	13.2	8.3	3.6	0.7	0.7	0.3		3.8	2.0	4.3	89.8
3L Lower CL			11.5	22.5	14.2	6.3	4.3	2.7	1.1	0.8	-0.1	-0.2	0.0		1.2	0.4	-1.1	21.0
3N	55m	375	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	104.4
		376	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	187.9
	91m	360	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	280.0
		361	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	149.5
		362	78.7	25.8	55.4	35.8	25.4	17.7	27.5	18.6	2.6	30.1	0.8	0.2	58.7	73.0	104.0	176.1
		373	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	35.7
		374	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	31.8
		383	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	0.0
	183m	359	0.0	0.0	0.0	0.0	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	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	0.0
		382	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3N Total			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	965.4
3N Upper CL			576.1	310.0	325.0	458.4	197.9	770.0	472.1	395.8	302.6	248.6	217.4	242.4	611.7	828.9	778.0	1199.8
3N Lower CL			294.5	170.1	134.0	123.6	72.6	186.7	138.9	140.4	75.8	41.3	35.4	75.2	338.9	280.9	376.4	731.0
3O	91m	330	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	0.2
		331	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	4.4
		338	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	16.6
		340	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	2.1
		351	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	112.4
		352	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	99.3
		353	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	33.2
	183m	329	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	0.1
		332	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	0.7
		337	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	0.1
		339	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	0.1
		354	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	0.0
3O Total			63.5	84.1	70.1	90.9	59.7	46.7	57.3	50.0	28.0	101.1	21.9	28.5	161.7	139.4	154.5	269.1
3O Upper CL			102.9	113.8	97.2	129.4	85.1	64.1	87.5	76.2	40.4	201.7	44.6	49.0	222.6	227.0	211.5	360.2
3O Lower CL			24.0	54.5	43.0	52.4	34.2	29.2	27.0	23.7	15.6	0.4	-0.8	8.1	100.7	51.9	97.5	177.9
3LNO Overall			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	733.3	1289.9
3LNO Upper CL			690.8	453.2	425.6	564.2	269.3	825.0	535.8	449.4	331.3	380.6	238.2	272.6	785.8	974.5	940.7	1539.8
3LNO Lower CL			397.5	295.0	227.5	224.1	136.8	240.9	199.1	191.1	103.6	112.1	58.6	102.2	493.1	416.6	526.0	1039.9

Table 7. Abundance (millions) of yellowtail flounder by stratum by Division (strata <184m only) from Spring surveys 2000-2014.

NAFO Div	Max depth (m)	Stratum	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784		0.0	0.0		0.0										
	91m	350	6.1	1.3	0.1	2.4	3.4	6.3	2.8	3.0	12.5	0.7	0.0	26.2	18.6	27.1	2.6
		363	24.0	3.3	0.2	50.8	13.6	51.4	95.7	94.6	43.5	20.1	10.1	53.5	150.5	63.1	29.6
		371	0.0	0.0	0.0	0.0	0.1	8.6	1.5	0.5	0.0	0.0	2.6	2.2	2.0	16.1	2.6
		372	9.6	6.5	1.3	38.5	21.4	48.2	133.4	55.0	42.7	26.1	96.1	75.7	51.5	75.7	42.5
		384	0.1	0.1	0.0	0.0	0.0	0.0	3.6	0.5	0.3	0.0	1.2	2.0	6.9	26.6	4.4
		785		0.0	0.1		0.1										
	183m	328	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.1	0.1	0.0	0.0
		341	0.0	0.3	0.0	0.0	0.0	0.3	0.8	0.8	4.5	0.1	0.0	0.3	2.0	0.2	0.1
		342	0.0	0.0	0.0	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	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
		349	0.8	0.0	0.0	0.1	0.0	0.1	4.9	22.8	0.5	0.0	0.0	0.2	1.8	1.5	18.8
		364	0.2	0.0	0.0	0.0	0.0	0.7	8.7	0.1	10.9	0.0	0.2	0.1	5.0	0.1	0.5
		365	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
		385	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
		390	0.0	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	0.0
		786		0.0			0.0							0.0			
		787		0.0			0.0							0.0			
		788															
		790															
		793															
		794				0.0											
		797				0.0											
		799					0.0										
3L Total			40.7	11.5	1.6	92.0	38.7	115.6	251.5	177.5	115.3	47.0	110.3	160.3	238.5	210.6	101.0
3L Upper CL			60.3	23.1	3.1	163.3	71.8	198.2	341.8	256.4	179.3	89.0	185.1	235.6	349.9	313.2	163.6
3L Lower CL			21.0	-0.1	0.1	20.6	5.5	33.0	161.3	98.7	51.2	4.9	35.5	85.0	127.0	108.0	38.4
3N	55m	375	78.7	66.1	46.8	86.6	62.7	52.6	66.3	101.7	92.1	114.8	40.6	73.3	111.9	89.5	96.7
		376	72.1	236.3	50.3	225.3	158.5	171.3	155.4	175.6	181.0	205.5	231.5	193.3	184.2	157.2	193.1
	91m	360	88.8	226.1	300.8	247.0	193.6	191.7	401.4	215.2	416.8	147.0	310.7	284.7	429.6	328.2	117.8
		361	138.7	162.9	95.7	134.1	120.4	105.8	113.0	98.4	107.5	91.0	53.8	132.6	106.6	96.1	51.0
		362	180.0	181.1	19.3	91.2	106.7	158.1	268.2	141.0	121.6	60.4	90.9	126.0	137.8	96.3	197.9
		373	108.1	236.0	11.4	94.8	19.2	109.4		126.8	141.3	73.4	134.5	74.1	144.4	100.3	72.3
		374	28.9	11.3	4.0	35.8	28.9	32.5	30.7	87.0	44.4	59.3	83.3	76.3	25.6	61.0	42.4
		383	0.0	0.0	0.0	0.0	0.0	0.2		0.9	6.5	0.2	4.8	3.9	22.7	15.0	1.3
	183m	359	0.1	0.0	0.0	0.0	0.0	0.0		1.0	2.2	0.0	0.4	0.3	17.3	2.6	0.0
		377	0.0	0.0	0.0	0.0	0.0	0.1		5.8	1.2	0.0	0.3	2.7	4.6	7.7	1.0
		382	0.0	0.0	0.0	0.0	0.0	0.3		0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0
3N Total			695.3	1119.9	528.3	914.9	690.1	822.0	1035.0	953.5	1114.6	751.6	950.9	967.3	1184.6	955.5	773.6
3N Upper CL			855.5	1583.7	689.6	1121.2	858.6	1012.9	1363.6	1178.5	1468.2	932.4	1174.5	1175.8	1490.0	1216.7	969.4
3N Lower CL			535.1	656.2	367.1	708.5	521.6	631.2	706.4	728.5	760.9	570.8	727.2	758.7	879.1	694.2	577.8
3O	91m	330	13.6	0.5	1.7	3.0	2.6	2.4	4.2	10.5	7.1	1.6	4.2	9.8	2.6	3.8	1.7
		331	2.7	1.9	1.1	5.4	2.3	2.9		1.6	5.2	2.4	12.5	8.6	4.3	1.4	4.3
		338	11.3	38.9	7.5	7.9	4.1	5.5	14.0	37.8	11.5	56.3	84.2	17.9	38.4	12.4	4.3
		340	10.4	2.7	3.2	19.4	1.8	9.3	31.0	22.9	31.5	6.3	8.8	25.7	26.7	28.7	24.0
		351	36.5	51.1	24.5	36.7	69.2	103.3	83.5	79.9	105.3	3.2	49.5	109.0	108.2	57.0	104.4
		352	95.3	77.3	104.3	162.8	117.5	87.9	134.6	138.0	66.8	46.1	65.4	106.4	41.3	71.9	53.3
		353	16.3	22.0	14.2	6.3	40.3	14.6	25.9	18.4	22.4	1.7	46.5	19.6	45.2	20.9	12.3
	183m	329	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.1	0.8	0.3	0.2
		332	0.0	0.6	3.2	0.8	0.0	0.2		0.1	0.4	0.1	0.2	0.7	0.1	0.0	0.1
		337	0.3	0.0	1.1	0.0	0.0	0.6		0.0	0.2	0.0	0.7	0.5	0.1	0.0	0.1
		339	0.2	2.2	0.1	0.9	0.0	0.5	2.6	0.2	0.1	0.1	0.1	0.0	1.3	0.1	0.2
		354	0.1	0.0	0.0	0.0	0.1	0.0		0.3	0.1	0.0	0.1	0.2	0.0	0.0	0.0
3O Total			186.5	197.2	161.0	243.2	237.9	227.1	295.9	309.7	250.6	117.9	272.2	298.6	269.1	196.5	204.7
3O Upper CL			247.0	288.9	261.3	312.8	331.6	317.1	415.7	411.5	341.4	199.0	413.2	396.8	364.5	272.4	286.3
3O Lower CL			126.0	105.4	60.6	173.7	144.2	137.2	176.0	207.9	159.9	36.8	131.2	200.3	173.6	120.7	123.2
3LNO Overall			922.5	1328.5	690.9	1250.1	966.7	1164.8	1582.4	1440.7	1480.4	916.4	1333.3	1426.1	1692.1	1362.6	1079.3
3LNO Upper CL			1092.6	1798.6	873.6	1471.9	1156.8	1383.2	1927.4	1693.5	1845.5	1113.1	1594.7	1663.0	2022.6	1646.3	1292.0
3LNO Lower CL			752.4	858.5	508.2	1028.2	776.5	946.3	1237.5	1187.9	1115.4	719.8	1071.9	1189.2	1361.6	1079.0	866.5

Table 8. Mean weight (kg) per tow of yellowtail flounder by stratum and NAFO Division (strata <184m only) from Spring surveys 1984-1999.

NAFO Div	Max depth (m)	Stratum	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
3L	55m	784															0.0	0.0
	91m	350	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	16.3
		363	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	51.6
		371		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	1.4
		372	46.5	48.2	28.7	11.2	6.2	9.9	4.0	2.0	0.3	0.3	0.1	0.0	1.1	0.7	1.4	24.2
		384		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	0.0
		785															0.0	0.0
	183m	328	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	0.0
		341	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	0.0
		342	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	0.0
		343		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	0.0
		348		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	0.0
		349	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	7.9
		364	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	1.4
		365		0.0	0.0	0.0	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		0.0	0.0	0.0	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		0.0	0.0	0.0	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		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
		786															0.2	0.0
		787															0.0	0.0
		788																0.0
		790																0.0
		793																0.0
		794																0.0
		797																0.0
		799																
3L Average			10.7	4.0	2.5	1.1	0.7	0.8	0.4	0.2	0.0	0.0	0.0	0.0	0.2	0.1	0.1	5.0
3L Upper CL			18.6	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	8.0
3L Lower CL			2.7	1.9	1.4	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	1.9
3N	55m	375	150.0	78.2	181.6	103.8	50.6	21.2	84.3	11.7	118.4	49.5	12.1	59.7	78.7	87.5	90.8	100.2
		376	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	150.2
	91m	360	106.6	46.3	11.2	7.4	2.5	61.0	12.1	12.1	25.3	8.8	2.5	39.6	68.1	39.1	77.8	186.0
		361	126.7	59.9	38.3	58.1	70.2	43.5	105.0	82.3	29.6	82.5	163.9	108.5	106.1	102.5	122.4	123.3
		362	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	111.8	166.3
		373	52.9	26.4	13.9	17.8	18.2	11.1	0.9	7.1	0.0	0.0	0.9	0.0	1.9	1.0	3.2	31.9
		374	30.1	21.1	8.9	4.3	2.3	0.1	0.5	0.2	0.6	0.0	0.0	1.1	7.1	3.0	1.2	69.0
		383	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	0.0
	183m	359	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	0.0
		377	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	0.0
		382	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3N Average			73.1	38.4	41.5	34.1	22.4	34.1	33.0	28.8	20.8	21.1	18.9	24.1	43.3	51.0	59.8	99.3
3N Upper CL			97.2	48.7	58.9	47.7	31.1	50.3	47.1	39.6	33.2	36.0	33.0	36.3	54.0	72.1	80.2	127.3
3N Lower CL			48.9	28.1	24.0	20.5	13.7	18.0	18.9	17.9	8.4	6.3	4.8	11.9	32.6	29.9	39.5	71.3
3O	91m	330	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	0.3
		331	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	27.3
		338	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	27.6
		340	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	4.2
		351	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	89.7
		352	28.1	24.5	30.0	42.9	21.3	22.7	31.5	38.3	19.9	93.0	22.7	15.4	129.7	72.0	83.5	110.1
		353	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	56.3	90.8	103.2
	183m	329	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	0.1
		332	0.0	0.3	7.7	5.0	0.1	11.9	0.8	0.7	0.5	6.1	0.2	0.9	3.5	0.5	2.3	1.8
		337	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	0.5
		339	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	0.5
		354	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	0.1
3O Average			11.4	15.2	12.4	16.7	10.5	8.7	10.5	9.2	4.6	16.7	3.6	5.0	27.6	20.8	22.7	38.7
3O Upper CL			18.4	20.6	16.8	23.9	14.7	11.6	15.8	14.3	6.7	32.8	6.9	8.7	37.7	32.4	31.4	51.2
3O Lower CL			4.5	9.9	7.9	9.6	6.3	5.9	5.2	4.1	2.4	0.6	0.2	1.3	17.6	9.3	14.1	26.2
3LNO Overall			32.0	14.6	14.1	12.7	8.2	10.6	10.6	9.5	6.0	9.1	5.3	6.9	17.1	17.0	19.3	34.1
3LNO Upper CL			40.5	17.4	18.3	16.3	10.5	14.4	14.1	12.4	8.9	14.0	8.6	9.8	20.5	22.5	24.3	41.1
3LNO Lower CL			23.4	11.7	9.9	9.2	6.0	6.7	7.1	6.6	3.1	4.2	2.0	3.9	13.7	11.6	14.3	27.2

Table 9. Mean weight (kg) per tow of yellowtail flounder by stratum and NAFO Division (strata <184m only) from Spring surveys 2000-2014.

NAFO Div	Max depth (m)	Stratum	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784		0.0	0.0		0.0										
	91m	350	8.4	2.1	0.0	2.6	4.6	7.9	3.7	3.9	15.4	0.9	0.0	31.4	23.2	34.5	3.3
		363	43.6	5.3	0.1	77.6	23.7	84.0	144.1	135.2	71.0	22.4	16.1	75.5	236.8	76.2	40.9
		371	0.0	0.0	0.0	2.7	0.3	20.9	4.4	1.2	0.1	0.0	7.1	6.4	5.6	43.9	5.9
		372	12.0	7.0	1.5	43.0	23.8	50.9	121.9	55.8	45.9	22.0	67.5	77.3	48.3	63.9	46.8
		384	0.2	0.3	0.3	0.0	0.2	0.0	11.8	1.8	0.6	0.0	3.6	6.0	23.4	57.1	11.4
		785		0.0	0.2		0.8										
	183m	328	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0		0.0	0.2	0.2	0.2	0.0	0.0
		341	0.0	0.5	0.0	0.0	0.1	0.3	1.2	1.1	7.1	0.1	0.0	0.6	3.2	0.2	0.1
		342	0.0	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	0.0
		343	0.0	0.0	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	0.0	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	0.0
		349	1.0	0.0	0.0	0.1	0.0	0.1	5.3	24.0	0.5	0.0	0.1	0.4	1.7	1.6	16.8
		364	0.2	0.0	0.0	0.0	0.0	0.7	9.5	0.1	10.5	0.0	0.2	0.0	4.8	0.1	0.4
		365	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0
		385	0.0	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	0.1
		390	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1
		786		0.0			0.0							0.0			
		787		0.0			0.0							0.2			
		788															
		790															
		793															
		794				0.0											
		797				0.0											
		799					0.0										
3L Average			3.3	0.8	0.1	6.4	2.8	8.2	16.0	11.4	8.5	2.5	5.5	10.3	17.2	12.4	6.5
3L Upper CL			4.8	1.6	0.2	10.9	5.2	13.8	21.8	16.3	13.6	4.7	8.8	15.1	26.0	17.8	10.4
3L Lower CL			1.7	0.0	0.0	1.8	0.3	2.5	10.3	6.5	3.3	0.2	2.1	5.6	8.4	7.0	2.6
3N	55m	375	70.1	84.6	65.6	133.9	94.2	81.4	98.7	145.4	101.8	137.8	55.5	104.6	132.9	126.5	161.2
		376	72.8	253.5	50.4	266.0	209.3	245.6	214.2	210.1	212.8	275.5	284.1	211.8	224.2	215.8	240.9
	91m	360	63.5	146.3	213.5	191.2	178.4	152.2	303.8	126.8	328.7	97.9	206.8	218.1	273.2	219.1	78.0
		361	129.2	164.5	102.8	163.7	131.9	102.6	123.4	118.9	85.7	89.7	50.9	113.0	95.3	73.7	58.6
		362	162.4	123.6	12.5	84.3	78.5	138.3	245.8	129.8	102.3	51.1	77.8	98.9	101.3	91.2	164.6
		373	121.1	228.0	8.1	95.6	17.1	125.2		142.5	148.4	68.0	132.8	66.8	128.3	86.7	73.8
		374	74.3	23.9	10.3	103.4	99.2	115.1	90.1	294.1	127.6	172.2	257.4	172.6	75.9	176.4	131.8
		383	0.0	0.0	0.0	0.0	0.0	1.7		4.1	29.6	0.3	19.7	14.0	81.5	62.6	5.7
	183m	359	1.1	0.0	0.0	0.0	0.0	0.0		6.3	12.3	0.0	1.8	1.4	85.0	13.2	0.2
		377	0.0	0.0	0.3	0.0	0.0	1.7		165.9	25.2	0.2	8.2	54.6	102.1	165.4	20.8
		382	0.0	0.0	0.0	0.0	0.0	1.1		0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.3
3N Average			82.2	124.1	61.4	116.7	90.3	109.8	203.7	121.9	138.6	88.9	115.3	111.1	132.2	114.5	96.8
3N Upper CL			103.4	185.8	80.0	138.4	115.1	136.4	257.3	147.4	185.5	111.2	144.7	141.2	164.0	144.8	123.2
3N Lower CL			60.9	62.3	42.7	95.0	65.5	83.2	150.1	96.5	91.7	66.6	85.9	81.1	100.5	84.2	70.4
3O	91m	330	23.7	0.7	1.9	2.0	3.0	3.0	6.7	11.9	10.0	2.3	4.0	17.5	4.2	4.7	2.2
		331	19.1	10.0	6.5	38.7	12.3	19.5		10.9	37.3	16.1	80.3	53.6	32.6	7.8	26.2
		338	18.1	53.9	12.6	11.5	5.9	9.1	19.0	49.8	17.7	101.3	106.9	28.2	64.7	16.1	6.3
		340	17.8	4.4	3.1	20.3	2.3	16.4	43.2	29.2	38.2	7.9	10.0	27.9	34.7	33.9	28.9
		351	34.9	44.3	13.7	28.1	60.8	100.9	79.9	59.1	99.7	2.2	42.5	94.9	78.4	39.1	88.9
		352	100.0	75.3	93.6	136.5	97.5	89.1	118.3	107.1	63.9	36.9	60.2	104.0	40.9	60.9	53.3
		353	41.8	24.9	37.7	14.0	92.7	33.9	65.2	36.8	39.1	2.9	91.3	42.7	84.0	38.5	25.9
	183m	329	0.1	0.0	0.0	0.0	0.0	0.0		0.1	0.0	0.0	0.0	0.2	1.2	0.5	0.2
		332	0.0	2.2	10.0	2.4	0.0	0.8		0.7	1.1	0.2	1.3	1.6	0.4	0.3	0.0
		337	1.0	0.0	4.2	0.0	0.0	1.9		0.0	0.4	0.2	2.5	1.5	0.3	0.0	0.4
		339	0.7	11.7	0.4	2.9	0.0	2.6	10.4	0.9	0.6	0.3	0.4	0.1	5.1	0.4	0.9
		354	0.6	0.0	0.0	0.0	0.7	0.0		1.9	0.4	0.0	0.4	0.7	0.0	0.0	0.0
3O Average			28.3	24.9	20.2	28.2	29.7	31.9	56.9	35.0	32.6	17.4	35.0	39.5	33.6	22.0	25.5
3O Upper CL			36.8	35.9	32.8	35.5	39.5	44.8	80.7	45.9	44.6	33.3	51.8	52.4	44.2	29.7	36.2
3O Lower CL			19.7	13.9	7.7	20.9	19.9	19.1	33.1	24.1	20.7	1.6	18.1	26.6	22.9	14.4	14.9
3LNO Overall			27.9	34.9	19.2	37.2	29.3	37.8	58.3	43.0	45.5	26.3	38.7	40.9	48.5	38.6	32.3
3LNO Upper CL			33.3	49.1	24.3	42.8	35.4	45.1	69.0	49.9	57.1	32.5	46.6	48.7	57.3	46.3	39.0
3LNO Lower CL			22.5	20.6	14.1	31.6	23.2	30.5	47.5	36.2	34.0	20.2	30.8	33.1	39.8	30.9	25.6

Table 10. Mean number per tow of yellowtail flounder by stratum and NAFO Division (strata <184m only) from Spring surveys 1984-1999.

NAFO Div	Max depth (m)	Stratum	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
3L	55m	784															0.0	0.0
	91m	350	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	33.2
		363	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	94.8
		371		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	0.0	2.5
		372	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	4.5	47.3
		384		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	0.0
		785															0.5	0.0
	183m	328	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	0.0
		341	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	0.0
		342	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	0.0
		343		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	0.0	0.0
		348		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	0.0
		349	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	18.0
		364	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	2.9
		365		0.0	0.0	0.0	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		0.0	0.0	0.0	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		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	0.0
		390		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
		786															0.5	0.0
		787															0.0	0.0
		788																0.0
		790																0.0
		793																0.0
		794																0.0
		797																0.0
		799																
3L Average			22.1	9.4	5.3	2.4	1.6	1.6	0.9	0.4	0.1	0.0	0.0	0.0	0.5	0.2	0.3	9.6
3L Upper CL			38.6	14.5	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	15.6
3L Lower CL			5.6	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	3.6
3N	55m	375	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	476.4
		376	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	1029.8	524.8	911.0
	91m	360	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	680.3
		361	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	586.7
		362	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	507.9
		373	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	103.1
		374	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	248.7
		383	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	0.0
	183m	359	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	0.0
		377	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	0.0
		382	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3N Average			189.7	104.6	100.0	128.1	58.9	208.4	133.1	111.7	79.3	60.4	51.5	66.1	198.0	233.2	240.4	402.1
3N Upper CL			251.1	135.1	141.6	201.8	86.2	335.5	205.7	164.9	126.8	103.6	88.6	100.9	254.8	348.4	324.0	499.7
3N Lower CL			128.3	74.1	58.4	54.4	31.6	81.4	60.5	58.5	31.7	17.2	14.4	31.3	141.1	118.1	156.8	304.5
3O	91m	330	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	0.6
		331	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	69.8
		338	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	63.7
		340	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	8.8
		351	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	324.2
		352	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	279.7
		353	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	188.2
	183m	329	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	0.3
		332	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	4.8
		337	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	0.9
		339	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	0.9
		354	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	0.4
3O Average			25.8	34.2	28.5	36.9	24.2	18.9	23.9	19.7	11.0	39.8	8.5	11.2	63.3	54.6	60.5	105.4
3O Upper CL			41.8	46.2	39.5	52.6	34.6	26.0	36.5	30.0	15.9	79.5	17.2	19.2	87.2	88.9	82.9	141.2
3O Lower CL			9.7	22.1	17.5	21.3	13.9	11.9	11.2	9.3	6.1	0.2	-0.3	3.2	39.5	20.3	38.2	69.7
3LNO Overall			79.9	37.1	33.3	40.2	20.7	54.3	37.7	32.5	21.2	24.0	14.1	18.2	62.2	67.7	69.9	120.4
3LNO Upper CL			101.4	44.9	43.4	57.6	27.4	84.0	54.9	45.6	32.3	37.1	22.7	26.5	76.4	94.9	89.7	143.8
3LNO Lower CL			58.4	29.3	23.2	22.9	13.9	24.5	20.4	19.4	10.1	10.9	5.6	9.9	48.0	40.6	50.2	97.1

Table 11. Mean number per tow of yellowtail flounder by stratum and NAFO Division (strata <184m only) from Spring surveys 2000-2014.

NAFO Div	Max depth (m)	Stratum	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784		0.0	0.0		0.0										
	91m	350	21.5	4.5	0.3	8.4	11.9	22.2	9.7	10.5	44.0	2.5	0.0	92.0	65.1	95.3	9.1
		363	97.9	13.7	0.7	207.7	55.7	209.8	390.7	386.3	177.8	82.0	41.1	218.5	614.6	257.8	120.8
		371	0.0	0.0	0.0	0.0	0.8	56.0	9.8	3.5	0.3	0.0	16.7	14.5	13.0	104.7	16.8
		372	28.2	19.1	3.8	113.8	63.1	142.5	394.3	162.6	126.1	77.1	284.0	223.8	152.1	223.6	125.6
		384	0.5	0.8	0.3	0.3	0.3	0.0	23.3	3.3	2.0	0.0	8.0	13.1	44.5	172.7	28.3
		785		0.0	1.0		1.5										
	183m	328	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0		0.0	0.2	0.4	0.3	0.1	0.0
		341	0.0	1.2	0.0	0.2	0.2	1.3	3.8	3.6	21.0	0.4	0.0	1.2	9.5	1.1	0.3
		342	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
		343	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0
		349	2.6	0.0	0.0	0.4	0.0	0.3	16.9	78.3	1.7	0.0	0.2	0.6	6.3	5.2	64.6
		364	0.5	0.0	0.0	0.0	0.0	1.9	22.3	0.3	28.0	0.0	0.6	0.1	12.9	0.3	1.2
		365	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.2	0.0	0.0
		385	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
		390	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.2
		786		0.0			0.0							0.0			
		787		0.0			0.0							0.5			
		788															
		790															
		793															
		794				0.0											
		797				0.0											
		799					0.0										
3L Average			7.6	2.1	0.3	16.9	7.0	21.7	47.1	33.3	22.6	8.8	21.0	29.7	46.3	39.5	18.9
3L Upper CL			11.3	4.2	0.6	30.0	12.9	37.1	64.0	48.0	35.2	16.7	35.3	43.6	68.0	58.7	30.6
3L Lower CL			3.9	0.0	0.0	3.8	1.0	6.2	30.2	18.5	10.1	0.9	6.8	15.7	24.7	20.2	7.2
3N	55m	375	359.0	301.6	213.4	395.0	286.2	240.0	302.3	463.9	420.3	523.8	185.2	334.6	510.7	408.4	441.4
		376	349.5	1145.8	243.8	1092.6	768.7	830.8	753.7	851.7	878.0	996.4	1122.5	937.2	893.2	762.2	936.3
	91m	360	215.7	549.4	730.8	600.1	470.3	465.8	975.2	522.9	1012.6	357.2	754.9	691.8	1043.8	797.5	286.2
		361	544.0	639.2	375.3	526.2	472.4	415.1	443.5	386.0	421.6	357.2	211.2	520.1	418.0	377.1	200.3
		362	519.1	522.6	55.6	263.2	307.9	456.0	773.8	406.8	350.7	174.3	262.2	363.6	397.5	277.7	570.8
		373	311.8	680.9	32.9	273.6	55.4	315.6		365.9	407.8	211.6	388.0	213.8	416.4	289.4	208.6
		374	225.5	88.3	31.3	279.7	225.3	254.0	240.0	679.1	346.5	463.3	650.3	595.5	199.7	476.0	331.0
		383	0.0	0.0	0.0	0.0	0.0	2.3		10.0	70.0	1.8	52.0	42.0	244.5	161.7	13.9
	183m	359	2.5	0.0	0.0	0.0	0.0	0.0		17.5	38.5	0.0	6.2	5.3	298.0	44.9	0.5
		377	0.0	0.0	2.0	0.0	0.0	4.0		423.9	84.5	0.5	22.5	195.7	334.0	556.1	72.5
		382	0.0	0.0	0.0	0.0	0.0	3.5		0.0	0.0	0.0	0.0	0.0	0.0	16.0	0.5
3N Average			289.6	466.4	220.0	381.0	287.4	342.4	660.7	397.1	467.5	313.0	396.0	402.9	496.9	397.9	322.2
3N Upper CL			356.3	659.6	287.2	467.0	357.6	421.8	870.5	490.8	615.9	388.3	489.2	489.7	625.0	506.7	403.7
3N Lower CL			222.9	273.3	152.9	295.1	217.3	262.9	451.0	303.4	319.2	237.7	302.9	316.0	368.8	289.2	240.6
3O	91m	330	47.2	1.6	6.0	10.3	8.9	8.4	14.7	36.4	24.7	5.5	14.7	34.2	9.1	13.4	5.8
		331	43.5	30.0	17.0	86.5	36.5	45.5		25.5	83.5	39.0	199.0	136.5	69.0	22.1	68.0
		338	43.2	148.8	28.7	30.2	15.6	21.0	53.6	144.8	44.0	215.7	322.3	68.7	147.3	47.3	16.3
		340	44.0	11.4	13.6	82.2	7.8	39.4	131.5	97.0	133.3	26.8	37.2	109.1	113.2	121.4	101.7
		351	105.3	147.5	70.8	105.9	199.7	297.9	241.0	230.4	303.9	9.3	142.8	314.5	312.0	164.4	301.2
		352	268.4	217.9	294.0	458.8	331.0	247.6	379.2	388.9	188.1	129.8	184.4	299.9	116.4	202.5	150.2
		353	92.4	124.9	80.6	36.0	228.7	82.8	147.1	104.3	126.8	9.8	263.8	110.9	256.3	118.8	69.5
	183m	329	0.2	0.0	0.0	0.0	0.0	0.0		0.2	0.0	0.0	0.0	0.4	3.2	1.4	0.7
		332	0.0	4.3	22.0	5.7	0.0	1.7		1.0	3.0	0.7	1.7	4.7	1.0	0.3	0.5
		337	2.0	0.0	8.7	0.0	0.0	4.4		0.0	1.7	0.3	5.0	3.6	0.7	0.0	1.0
		339	2.0	27.0	1.0	11.0	0.0	6.5	32.0	2.9	1.5	1.0	1.5	0.4	16.0	1.5	2.5
		354	1.0	0.0	0.0	0.0	1.0	0.0		4.0	1.5	0.0	1.1	2.7	0.0	0.0	0.0
3O Average			73.1	77.3	63.1	95.3	93.2	89.0	169.8	121.4	98.2	46.2	106.7	117.7	105.4	77.0	80.2
3O Upper CL			96.8	113.2	102.4	122.6	129.9	124.2	238.5	161.3	133.8	78.0	161.9	156.4	142.8	106.7	112.2
3O Lower CL			49.4	41.3	23.7	68.1	56.5	53.8	101.0	81.5	62.7	14.4	51.4	78.9	68.0	47.3	48.3
3LNO Overall			89.6	126.6	66.5	120.2	92.0	113.2	183.0	140.0	147.5	89.0	130.8	137.9	167.8	132.4	104.9
3LNO Upper CL			106.2	171.4	84.1	141.5	110.1	134.4	222.9	164.6	183.9	108.2	156.4	160.8	200.6	160.0	125.5
3LNO Lower CL			73.1	81.8	48.9	98.8	73.9	91.9	143.1	115.4	111.2	69.9	105.2	115.0	135.0	104.8	84.2

Table 12. Biomass (kt) of yellowtail flounder by stratum and NAFO Division (strata <184m only) from fall surveys 1990-2014.

NAFO Div	Max depth	Stratum	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784							0.0	0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.0									
	91m	350	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	1.2	1.7	2.6	1.6	0.3	0.4	0.0	2.9	0.0	0.9	4.6	7.4	0.6	1.9
		363	0.7	0.1	0.2	0.0	0.0	0.6	0.4	0.2	3.9	8.9	10.2	10.1	3.1	8.6	8.8	7.9	2.7	8.6	7.4	10.5	10.8	7.3	3.1	11.0	1.6
		371	0.0	0.0	0.0	0.0	0.0	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	0.9	0.0	0.3	1.6	1.4	0.7	0.7
		372	0.6	0.8	0.6	1.1	0.0	0.6	1.8	1.1	1.2	0.5	1.8	14.2	8.6	7.4	11.7	4.1	15.7	19.3	9.8	3.6	23.0	13.6	13.8	13.6	9.6
		384	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.7	0.0	6.7	2.3	0.8	8.0	0.1	10.1	5.8
		785							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0									
	183m	328	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.1
		364	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	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1
		365	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		786							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0									
		787							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0								
		788							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		790							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0					0.0				
		793							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0					0.0				
		794							0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		797							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		799							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
3L Total			2.1	1.0	0.9	1.1	0.0	1.2	2.2	1.3	5.2	9.6	12.5	25.5	13.6	18.6	22.2	14.1	21.2	28.0	27.8	16.5	35.9	35.3	25.8	36.4	19.8
3L Upper CL			4.1	1.6	1.5	2.7		2.2	5.3	3.1	12.8	23.5	23.2	39.7	21.7	34.1	35.4	24.6	33.5	46.1	41.7	34.0	63.6	53.8	42.8	53.7	32.4
3L Lower CL			0.0	0.4	0.4	-0.5		0.3	-0.8	-0.5	-2.4	-4.4	1.8	11.3	5.4	3.1	9.0	3.7	9.0	9.9	13.8	-1.1	8.1	16.8	8.9	19.1	7.1
3N	55m	375	3.2	5.1		8.0	31.1	14.8	12.0	15.4	19.1	24.6	25.4	39.0	32.7	31.1	76.2	42.9	20.9	41.7	31.8	41.8	66.2	20.3	35.0	31.6	
		376	20.1	10.9	10.8	31.3	10.2	24.4	24.2	32.5	35.9	37.7	125.2	123.2	47.4	57.5	49.9	122.4	67.0	69.9	52.7	35.6	90.8	19.7	44.1	75.4	
	91m	360	6.7	8.3	8.0	24.8	11.2	16.3	36.8	47.2	56.1	60.7	61.0	42.2	83.8	71.6	69.3	37.8	70.8	122.8	46.6	34.6	63.2	54.7	31.4	28.9	
		361	9.5	19.6	24.3	29.8	41.0	34.1	31.2	36.4	37.3	17.7	10.4	59.8	47.2	39.1	21.2	7.8	8.5	34.4	9.3	9.5	31.4	12.9	9.4	22.8	
		362	6.8	6.4	1.0	0.3	1.0	12.1	8.0	27.6	18.8	35.1	17.5	54.8	33.9	31.7	36.2	22.1	23.6	19.0	24.5	22.4	16.7	30.4	26.5	29.9	
		373	0.2	0.5	0.0	0.0	0.9	1.0	0.0	4.2	5.4	7.1	8.1	41.3	23.0	17.8	27.4	14.8	23.0	52.6	21.4	19.0	54.7	23.3	28.4	23.5	
		374	0.0	0.1		0.0	0.0	0.0	1.1	0.8	1.0	10.0	5.2	8.6	4.4	3.2	10.8	10.8	15.5	23.8	21.8	17.1	7.6	43.9	27.9	33.8	
		383	0.0	0.0		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	0.1	7.6	5.4	0.0	5.7	10.8	11.3	1.5	
	183m	359	0.0	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	0.3	0.0	0.5	0.4	0.5	0.3	0.0	0.0	1.9	1.6	
		377	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.7	2.4	3.1	0.4	0.2	0.1	1.2	2.9	0.0	
		382	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.3	0.2	0.0	0.4	0.0	2.8	
3N Total			46.5	50.9	44.1	94.2	95.5	102.8	113.2	164.2	173.6	193.0	252.8	368.9	272.7	252.0	291.6	261.5	232.3	377.8	214.8	180.7	336.4	217.7	218.7	251.9	0.0
3N Upper CL			79.9	84.3	79.7	148.5	159.3	135.7	156.1	209.2	222.7	242.0	379.3	471.9	364.8	323.5	363.2	321.5	326.7	456.0	317.7	239.8	404.8	330.0	270.0	348.1	0.0
3N Lower CL			13.1	17.6	8.5	40.0	31.6	69.9	70.3	119.1	124.5	144.0	126.3	265.8	180.5	180.5	219.9	201.4	137.8	299.7	112.0	121.6	267.9	105.3	167.4	155.6	0.0
3O	91m	330	0.2	0.0	0.2	0.5	0.0	1.1	0.0	0.8	0.2	3.6	0.3	2.8	1.0	2.2	1.9	2.3	1.2	5.2	2.5	3.6	7.2	13.0	4.7	3.4	
		331	0.2	0.9	0.3	0.5	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.8	0.1	1.3	0.9	0.8	1.1	0.3	0.1	0.4	0.3	1.2	0.1	
		338	1.0	2.0	0.2	1.1	0.1	7.2	0.0	5.7	2.8	2.8	6.4	25.9	0.6	6.5	0.3	0.9	9.9	0.7	4.0	0.6	0.8	1.7	15.9	1.6	
		340	0.6	4.0	0.0	0.3	0.2	0.5	0.0	2.6	2.2	2.6	0.5	3.3	9.2	2.1	6.7	8.0	2.6	16.2	14.2	8.4	0.6	1.7	13.2	7.0	
		351	5.5	2.3	0.3	5.0	1.0	2.2	1.3	14.5	18.8	11.9	24.0	17.5	15.2	32.5	22.3	13.7	18.9	26.3	24.4	9.4	7.9	15.0	45.6	10.2	
		352	7.0	21.0	18.2	8.3	9.3	13.7	15.2	26.5	28.5	23.5	36.5	27.1	22.2	38.6	26.8	38.1	15.4	24.6	31.2	12.1	21.7	19.4	29.4	34.0	
		353	2.4	0.0	0.0	0.6	0.0	0.8	0.7	7.3	0.0	3.8	1.8	3.8	2.9	15.3	1.1	2.4	2.4	2.2	1.8	6.4	6.2	5.0	2.0	1.1	
	183m	329	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	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	
		332	0.1	0.0	0.1	1.0	0.4	0.1	0.2	0.0	0.0	0.1	0.1	0.5	0.9	0.0	0.4	0.1	0.2	0.1	1.0	0.0	0.0	0.0	0.3	0.0	
		337	0.0	0.1	0.0	0.0	0.0	0.0	1.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.7	0.4	0.0	0.0	0.0	0.0	0.3	0.0	0.0	
		339	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.2	0.7	0.4	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.9	0.0	0.1	
		354	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.5	0.0	
3O Total			17.3	30.5	19.4	17.5	10.9	25.7	18.9	57.5	52.8	48.4	69.7	81.4	53.5	97.7	60.9	67.1	52.0	76.5	79.4	40.7	44.9	57.4	112.9	57.8	0.0
3O Upper CL			25.9	45.1	43.0	28.1	20.6	38.3	31.5	80.5	74.8	64.4	98.5	146.3	76.3	145.5	92.5	111.6	74.4	114.4	119.3	57.7	63.7	91.1	206.3	91.4	0.0
3O Lower CL			8.6	15.9	-4.3	6.9	1.3	13.2	6.2	34.5	30.8	32.3	40.9	16.5	30.7	50.0	29.3	22.6	29.6	38.7	39.4	23.6	26.2	23.7	19.4	24.3	0.0
3LNO Overall			65.8	82.4	64.5	112.8	106.4	129.8	134.3	222.9	231.6	250.9	335.0	475.8	339.7	368.3	374.7	342.7	305.5	482.4	322.0	237.8	417.2	310.4	357.4	346.1	19.8
3LNO Upper CL			99.8	117.5	103.6	167.7	170.5	164.3	178.3	272.5	285.2	302.8	460.6	587.2	434.0	452.0	452.2	413.2	401.8	568.5	427.0	298.9	490.9	419.2	460.6	444.4	32.4
3LNO Lower CL			31.9	47.3	25.4	57.9	42.4	95.3	90.3	173.4	178.1	199.0	209.4	364.4	245.5	284.7	297.2	272.2	209.3	396.3	217.0	176.8	343.5	201.6	254.1	247.7	7.1

Table 13. Abundance (millions) of yellowtail flounder by stratum and NAFO Division (strata <184m only) from fall surveys 1990-2014.

NAFO Div	Max depth (m)	Stratum	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784							0.0	0.0	0.0		1.5	0.0	0.0	0.0	0.0	0.1									
	91m	350	1.7	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.4	0.9	3.5	5.3	8.3	4.9	0.8	0.9	0.1	10.2	0.1	2.8	14.0	24.4	1.8	7.1
		363	1.3	0.3	0.5	0.0	0.1	1.3	0.9	0.3	9.4	18.1	29.3	28.0	8.5	23.4	24.9	24.4	7.4	27.3	23.7	30.6	34.8	25.9	10.5	32.1	5.5
		371	0.0	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	0.0	0.0	0.1	0.0	2.3	0.0	0.6	3.5	3.9	1.2	1.8
		372	1.3	1.6	1.3	2.6	0.0	2.2	5.7	5.8	3.4	2.2	6.1	42.6	18.9	27.0	33.3	9.8	46.1	63.3	28.3	9.7	95.5	38.0	54.0	39.3	28.3
		384	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	1.6	0.0	17.3	4.7	1.5	20.6	0.1	27.6	14.4
		785							0.0	0.0	0.0		0.1	0.2	0.1	0.1	0.0	0.0									
	183m	328	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0	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	0.0	0.1	0.0	0.0	0.0	0.0
		349	0.0	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	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.2	0.0	1.0	0.4
		364	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	0.2	0.2	0.0	0.1	0.1	0.0	0.3	0.6	0.4	0.2	0.3
		365	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1
		385	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		786							0.0	0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.0									
		787							0.0	0.0	0.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0								
		788							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		790							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0					0.0				
		793							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0					0.0				
		794							0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		797							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		799							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
3L Total			4.4	2.1	2.0	2.6	0.1	3.6	6.7	6.1	13.1	20.6	37.9	74.5	33.1	58.9	63.4	38.8	61.9	91.0	81.9	45.1	135.7	103.0	93.4	103.2	57.9
3L Upper CL			8.7	3.3	3.1	6.6		6.8	14.1	16.9	31.6	50.1	68.1	117.0	51.2	102.6	101.2	72.7	96.7	154.2	125.7	94.2	239.2	158.8	156.2	153.7	92.0
3L Lower CL			0.1	1.0	0.9	-1.4		0.3	-0.7	-4.7	-5.4	-8.8	7.8	32.0	15.1	15.2	25.6	4.9	27.1	27.7	38.1	-3.9	32.3	47.3	30.5	52.8	23.8
3N	55m	375	8.9	12.7		16.8	72.3	87.3	47.5	46.6	68.1	81.7	100.9	141.0	119.5	107.1	340.1	185.8	76.8	146.4	117.5	171.6	302.0	61.7	143.2	95.4	
		376	66.7	70.7	66.6	139.1	42.5	146.7	171.4	180.1	161.3	149.0	422.1	523.6	206.6	204.9	226.7	657.5	297.7	307.2	196.0	152.4	380.4	98.3	159.0	276.4	
	91m	360	34.3	38.2	20.4	90.4	41.5	70.5	161.4	167.2	205.3	201.9	188.6	131.4	238.0	224.9	211.2	104.2	188.1	457.8	190.8	117.2	226.7	218.9	123.5	108.3	
		361	21.8	68.7	68.8	80.7	98.2	114.7	106.0	101.3	134.7	66.8	37.4	188.0	176.4	157.4	91.6	31.7	34.6	141.7	35.5	46.7	129.3	52.5	43.0	107.0	
		362	16.5	21.0	2.3	0.6	2.3	84.9	26.2	106.5	48.3	198.3	70.3	198.1	150.7	117.6	185.9	86.8	96.7	80.1	99.9	115.0	72.9	115.3	110.9	120.6	
		373	0.4	0.9	0.0	0.0	2.5	4.8	0.0	12.2	12.3	22.0	24.2	106.7	65.5	49.6	76.8	54.1	67.8	182.6	74.2	63.7	188.5	77.1	92.3	76.6	
		374	0.0	0.1		0.0	0.0	0.0	3.8	2.3	2.0	23.4	16.7	25.9	13.9	8.3	24.6	19.9	46.4	63.2	55.9	41.1	22.0	102.4	105.8	101.8	
		383	0.0	0.0		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	0.1	16.5	13.9	0.0	13.6	27.2	30.7	4.1	
	183m	359	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.6	0.1	1.0	1.3	1.8	0.8	0.1	0.0	7.4	5.3	
		377	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5	6.4	4.9	9.1	1.0	0.7	0.4	4.6	11.4	0.0	
		382	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.5	0.6	0.0	1.0	0.0	6.3	
3N Total			148.5	212.3	158.0	327.7	259.3	509.0	516.3	616.2	632.1	743.1	860.3	1314.7	971.3	869.6	1158.6	1146.7	814.1	1414.2	787.1	709.9	1335.9	759.2	827.5	901.9	0.0
3N Upper CL			243.5	348.6	346.5	538.6	430.4	706.3	727.2	771.6	822.2	1004.5	1300.5	1780.2	1241.4	1107.6	1458.8	1467.7	1111.0	1704.6	1087.3	913.2	1642.8	994.5	1016.4	1210.2	0.0
3N Lower CL			53.5	76.0	-30.4	116.7	88.3	311.6	305.4	460.8	442.0	481.7	420.1	849.2	701.1	631.7	858.4	825.7	517.1	1123.9	486.9	506.5	1029.1	523.8	638.5	593.7	0.0
3O	91m	330	0.4	0.0	0.4	1.0	0.0	2.4	0.0	2.1	0.5	6.8	1.0	5.7	2.4	6.4	5.2	4.4	2.9	15.9	6.8	10.6	18.4	22.9	15.2	9.7	
		331	0.4	1.8	0.5	1.0	0.0	0.1	0.0	0.1	0.2	0.9	0.2	1.8	2.6	0.2	3.2	2.6	1.8	3.0	0.7	0.3	1.0	0.8	5.0	0.2	
		338	2.2	5.2	0.5	2.3	0.1	25.3	0.1	10.0	8.1	9.3	20.4	67.9	1.7	18.9	0.7	2.6	20.0	2.2	9.4	2.1	2.8	4.6	37.9	4.8	
		340	1.3	8.5	0.1	1.2	0.4	1.1	0.0	6.7	5.5	8.8	1.1	11.2	22.3	7.3	17.5	25.3	8.6	41.6	46.5	31.0	1.8	5.9	37.9	26.5	
		351	12.8	5.5	0.6	12.2	2.4	5.5	4.0	37.2	71.9	46.9	94.5	59.3	59.2	154.7	85.9	39.8	66.5	99.5	91.7	39.7	40.6	65.1	146.2	36.1	
		352	17.0	61.2	53.4	20.1	24.7	43.3	47.7	88.4	95.8	90.5	131.2	102.2	68.2	100.5	90.7	105.4	62.8	82.3	136.6	44.6	101.8	58.3	91.1	98.1	
		353	4.9	0.0	0.0	1.5	0.0	1.5	1.2	14.6	0.1	13.0	5.3	12.3	9.3	44.6	4.2	8.2	7.6	6.7	5.6	16.7	18.2	14.8	6.5	3.6	
	183m	329	0.2	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	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.8	
		332	0.1	0.0	0.3	2.3	0.7	0.5	0.4	0.0	0.0	0.2	0.1	1.4	2.7	0.0	1.3	0.1	0.4	0.1	2.9	0.0	0.0	0.1	0.7	0.0	
		337	0.0	0.1	0.0	0.0	0.0	0.0	2.5	0.2	0.7	0.0	0.1	0.0	0.0	0.0	0.4	2.1	1.0	0.0	0.0	0.0	0.0	1.2	0.1	0.1	
		339	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0		0.1	0.7	1.9	1.5	0.1	0.2	1.0	0.3	0.0	0.0	0.0	2.6	0.0	0.3	
		354	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	0.0	0.0	0.2	0.0	0.0	0.0	0.0	1.4	0.0	
3O Total			39.5	82.7	55.8	41.6	28.5	79.6	56.2	159.2	183.0	176.5	254.1	262.7	170.4	334.1	209.1	190.8	172.5	252.0	300.2	145.0	184.7	176.5	342.1	180.2	0.0
3O Upper CL			59.0	130.3	126.9	69.0	54.3	128.2	93.5	214.2	262.0	240.3	363.1	428.9	240.4	502.3	327.7	303.5	252.7	364.8	458.1	201.8	280.7	251.7	609.1	272.5	0.0
3O Lower CL			20.1	35.0	-15.2	14.2	2.7	31.0	18.8	104.1	103.9	112.8	145.0	96.6	100.4	165.9	90.5	78.1	92.4	139.1	142.2	88.2	88.7	101.3	75.2	87.9	0.0
3LNO Overall			192.5	297.1	215.9	371.9	287.9	592.2	579.1	781.5	828.2	940.3	1152.3	1651.9	1174.8	1262.6	1431.0	1376.3	1048.5	1757.2	1169.2	900.0	1656.3	1038.7	1262.9	1185.4	57.9
3LNO Upper CL			288.7	438.2	397.9	583.6	459.7	793.2	791.7	945.3	1032.1	1207.3	1589.8	2116.1	1452.3	1545.3	1748.8	1701.2	1353.2	2068.1	1494.6	1111.2	1982.2	1283.7	1578.3	1500.5	92.0
3LNO Lower CL			96.2	156.0	33.9	160.1	116.1	391.1	366.6	617.8	624.3	673.2	714.8	1187.7	897.3	979.9	1113.2	1051.5	743.9	1446.2	843.7	688.8	1330.5	793.7	947.5	870.3	23.8

Table 14. Mean weight (kg) per tow of yellowtail flounder by stratum and NAFO Division (strata <184m only) from fall surveys 1990-2014.

NAFO Div	Max depth (m)	Stratum	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784							0.0	0.0	0.0		4.0	0.1	0.0	0.1	0.0	0.1									
	91m	350	2.6	0.3	0.3	0.0	0.0	0.2	0.2	0.0	0.3	0.7	1.1	4.1	5.8	9.1	5.8	1.1	1.2	0.2	10.2	0.2	3.3	16.0	26.0	2.2	6.5
		363	2.7	0.5	0.9	0.0	0.1	2.3	1.5	0.6	15.9	36.3	41.8	41.1	12.7	35.1	35.9	32.3	10.8	35.0	30.2	42.9	44.0	29.6	12.6	44.9	6.7
		371	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.1	0.1	0.4	0.0	5.8	0.0	1.7	10.4	8.8	4.3	4.2
		372	1.9	2.3	1.7	3.3	0.0	1.9	5.4	3.3	3.6	1.4	5.3	41.9	25.5	21.8	34.6	12.0	46.3	57.1	29.0	10.6	67.9	40.2	40.7	40.2	28.4
		384	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	10.8	4.3	0.0	43.4	14.9	5.2	51.9	0.5	65.4	37.6
		785							0.0	0.0	0.0		0.4	0.2	0.2	0.4	0.0	0.0									
	183m	328	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0
		341	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
		342	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0	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	0.0	0.1	0.0	0.0	0.0	0.0
		349	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	0.2	0.0	1.2	0.3
		364	0.0	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	0.2	0.3	0.0	0.1	0.1	0.0	0.2	0.5	0.3	0.2	0.2
		365	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.1
		385	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		786							0.0	0.0	0.2		0.3	0.0	0.0	0.0	0.0	0.1									
		787							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0								
		788							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		790							0.0	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0					0.0				
		793							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.9	0.0					0.0				
		794							0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		797							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		799							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.4	0.0	0.0				0.0				
3L Average			0.4	0.2	0.2	0.2	0.0	0.2	0.4	0.2	0.8	1.6	2.0	4.0	2.1	2.9	4.7	2.4	3.5	4.7	5.2	2.8	5.8	6.7	4.8	6.8	3.3
3L Upper CL			0.8	0.3	0.3	0.5	0.0	0.4	0.8	0.5	2.0	4.0	3.7	6.2	3.4	5.3	7.5	4.2	5.5	7.8	7.8	5.7	10.3	10.1	8.0	10.0	5.5
3L Lower CL			0.0	0.1	0.1	-0.1	0.0	0.0	-0.1	-0.1	-0.4	-0.7	0.3	1.8	0.9	0.5	1.9	0.6	1.5	1.7	2.6	-0.2	1.3	3.2	1.7	3.6	1.2
3N	55m	375	14.6	23.1		36.4	142.0	67.7	54.8	70.1	87.1	112.2	115.8	177.8	149.1	142.0	347.5	195.8	95.5	190.5	145.2	190.7	302.2	92.7	159.9	144.4	
		376	97.2	53.0	52.3	151.7	49.4	118.6	117.2	157.4	174.3	182.9	607.1	597.5	229.7	278.9	242.0	593.7	325.1	339.2	255.4	172.4	440.4	95.4	213.7	365.5	
	91m	360	16.4	20.1	19.5	60.3	27.3	39.6	89.4	114.8	136.4	147.5	148.2	102.6	203.7	174.0	168.3	91.8	171.9	298.3	113.3	84.0	153.5	132.9	76.3	70.3	
		361	37.3	77.0	95.3	116.9	161.0	133.7	122.5	142.9	146.3	69.6	40.7	234.5	185.3	153.4	83.3	30.7	33.3	135.0	36.6	37.4	123.4	50.5	36.8	89.6	
		362	19.5	18.6	3.0	1.0	3.0	35.0	23.0	79.7	54.1	101.3	50.6	157.9	97.8	91.5	104.4	63.7	68.2	54.7	70.8	64.7	48.1	87.7	76.3	86.1	
		373	0.6	1.4	0.0	0.0	2.5	2.8	0.0	12.2	15.6	20.5	23.4	119.2	66.4	51.2	79.2	42.8	66.3	151.8	61.8	54.7	157.7	67.3	81.9	67.8	
		374	0.0	0.9		0.0	0.0	0.0	8.2	6.2	7.9	78.1	40.6	67.4	34.1	24.6	84.2	84.4	121.1	186.0	170.1	133.8	59.0	343.0	218.0	263.8	
		383	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.7	82.0	58.8	0.0	61.0	116.8	121.4	16.5	
	183m	359	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.2	4.5	0.3	7.9	6.9	9.4	4.5	0.4	0.0	32.8	28.4	
		377	0.0		0.0	0.0	0.0	0.0	0.0	1.4	0.4	1.0	1.1	0.0	0.0	0.0	14.7	196.8	176.1	228.3	28.6	16.9	8.9	89.9	207.5	1.2	
		382	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.6	3.0	2.7	0.0	4.0	0.0	30.9	
3N Average			20.6	22.1	24.1	39.6	39.8	42.8	47.1	68.4	66.3	81.1	94.1	137.3	101.5	105.7	122.2	101.7	96.7	140.7	89.5	72.0	140.6	90.7	91.1	104.9	0.0
3N Upper CL			35.4	36.6	43.6	62.4	66.3	56.5	65.0	87.1	85.0	101.7	141.2	175.7	135.8	135.7	152.2	125.1	136.1	169.8	132.3	95.5	169.2	137.5	112.5	145.0	0.0
3N Lower CL			5.8	7.6	4.7	16.8	13.2	29.1	29.3	49.6	47.5	60.5	47.0	99.0	67.2	75.7	92.2	78.3	57.4	111.6	46.7	48.4	112.0	43.9	69.7	64.8	0.0
3O	91m	330	0.7	0.0	0.7	1.6	0.1	3.7	0.0	2.6	0.6	12.5	1.1	9.7	3.4	7.8	6.5	8.1	4.0	18.2	8.7	12.6	25.2	45.4	16.5	11.9	
		331	3.8	14.9	4.6	8.8	0.0	0.6	0.0	0.3	1.2	1.9	1.1	6.9	12.7	1.5	20.0	14.9	12.3	17.3	4.8	1.7	6.5	4.9	18.9	1.0	
		338	3.7	7.8	0.9	4.3	0.2	27.7	0.2	21.7	10.9	10.8	24.7	99.0	2.3	24.9	1.0	3.5	38.0	2.7	15.2	2.4	3.2	6.5	61.1	6.3	
		340	2.7	16.8	0.2	1.3	0.8	2.0	0.0	10.9	9.2	11.0	2.1	13.8	38.8	9.0	28.5	33.7	11.0	68.6	60.3	35.8	2.5	7.0	55.9	29.6	
		351	16.0	6.6	0.8	14.4	2.8	6.4	3.7	42.0	54.2	34.2	69.2	50.4	44.0	93.6	64.2	39.5	54.5	75.9	70.4	27.0	22.9	43.4	131.5	29.4	
		352	19.6	59.2	51.3	23.5	26.1	38.6	42.8	74.6	80.2	66.1	102.8	76.4	62.6	108.8	75.4	107.3	43.4	69.3	88.0	34.1	61.2	54.7	82.8	95.7	
		353	13.9	0.0	0.0	3.6	0.0	4.8	4.2	41.4	0.2	21.7	10.0	21.5	16.6	86.6	6.4	13.7	13.6	12.5	10.1	36.1	35.0	28.1	11.5	6.3	
	183m	329	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	1.3	
		332	0.4	0.2	1.0	7.3	2.6	0.9	1.7	0.0	0.0	0.5	0.4	3.4	6.2	0.0	2.9	0.4	1.1	0.4	6.7	0.1	0.0	0.2	1.8	0.0	
		337	0.0	0.6	0.0	0.0	0.0	0.0	10.2	0.9	1.6	0.1	0.2	0.0	0.0	0.0	1.2	5.1	3.0	0.0	0.0	0.0	0.0	2.6	0.2	0.2	
		339	0.5	1.1	0.0	0.0	0.5	0.0	0.1	0.3	0.0		0.6	2.6	8.2	4.9	0.4	0.7	4.0	1.1	0.0	0.0	0.2	11.0	0.0	1.6	
		354	0.3	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.2	0.2	7.6	0.2	
3O Average			7.0	12.2	7.9	6.9	4.3	10.1	7.6	22.7	19.9	19.6	25.1	29.5	19.3	37.2	23.9	24.2	20.5	27.6	31.1	14.7	17.6	22.5	44.2	22.7	0.0
3O Upper CL			10.5	18.1	17.5	11.1	8.1	15.0	12.7	31.7	28.2	26.1	35.5	53.1	27.5	55.3	36.2	40.2	29.4	41.2	46.8	20.9	24.9	35.7	80.9	35.8	0.0
3O Lower CL			3.5	6.4	-1.7	2.7	0.5	5.2	2.5	13.6	11.6	13.1	14.7	6.0	11.1	19.0	11.5	8.2	11.7	13.9	15.5	8.6	10.3	9.3	7.6	9.5	0.0
3LNO Overall			6.6	8.1	6.7	11.3	10.4	12.6	12.0	19.7	19.9	23.4	28.7	40.3	28.7	32.3	38.7	30.6	27.8	42.3	31.3	21.2	37.5	30.2	34.7	33.5	3.3
3LNO Upper CL			10.0	11.6	10.8	16.8	16.6	15.9	15.9	24.1	24.5	28.3	39.5	49.7	36.7	39.7	46.7	36.8	36.6	49.8	41.5	26.6	44.2	40.9	44.8	43.1	5.5
3LNO Lower CL			3.2	4.7	2.6	5.8	4.1	9.2	8.0	15.3	15.3	18.6	18.0	30.8	20.7	25.0	30.7	24.3	19.0	34.7	21.1	15.7	30.9	19.6	24.7	24.0	1.2

Table 15. Mean number per tow of yellowtail flounder by stratum and NAFO Division (strata <184m only) from fall surveys 1990-2014.

NAFO Div	Max depth (m)	Stratum	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
3L	55m	784							0.5	0.0	0.0		41.5	1.0	0.0	0.5	0.0	1.5									
	91m	350	5.9	0.7	0.5	0.0	0.1	0.4	0.3	0.0	0.4	1.3	3.1	12.4	18.4	29.3	17.3	2.9	3.3	0.5	35.8	0.4	10.0	49.3	85.7	6.5	25.0
		363	5.5	1.1	2.0	0.0	0.3	5.2	3.5	1.2	38.4	73.8	119.5	114.2	34.7	95.5	101.7	99.6	30.2	111.5	96.6	125.0	142.0	105.9	43.0	131.0	22.5
		371	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.3	0.3	0.3	0.3	0.8	0.0	14.7	0.0	3.8	22.7	25.0	7.8	11.8
		372	3.9	4.8	3.8	7.7	0.0	6.4	16.9	17.2	10.2	6.5	18.0	125.8	55.8	79.9	98.4	29.0	136.2	187.0	83.7	28.6	282.3	112.4	159.5	116.1	83.7
		384	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	0.0	22.0	10.5	0.0	112.3	30.3	10.0	133.7	0.8	179.2	93.3
		785							0.0	0.0	0.0		1.5	3.5	1.5	1.0	0.0	0.0									
	183m	328	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0
		341	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
		342	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0		0.0	0.0	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	0.3	0.0	0.0	0.0	0.0
		349	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.0	19.7	0.1	0.0	0.0	0.0	0.9	0.0	3.6	1.4
		364	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.6	0.0	0.2	0.4	0.0	0.8	1.6	1.0	0.4	0.8
		365	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.3	0.0	0.5
		385	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		786							0.5	0.0	0.5		5.5	0.0	0.0	0.0	0.0	0.5									
		787							0.0	0.0	1.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0								
		788							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		790							0.0	0.0	0.0		0.0	0.0	0.0	1.0	0.0	0.0					0.0				
		793							0.0	0.0	0.0		0.0	0.0	0.0	0.0	1.1	0.0					0.0				
		794							0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		797							0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0				
		799							0.0	0.0	0.0		0.0	0.0	0.0	0.0	1.5	0.0	0.0				0.0				
3L Average			0.8	0.4	0.4	0.5	0.0	0.7	1.1	1.0	2.1	3.5	6.1	11.7	5.2	9.2	13.4	6.6	10.2	15.3	15.3	7.6	22.0	19.4	17.5	19.2	9.7
3L Upper CL			1.6	0.6	0.6	1.3	0.1	1.3	2.2	2.7	5.0	8.6	11.0	18.4	8.0	16.1	21.3	12.4	16.0	25.9	23.5	15.8	38.8	29.9	29.3	28.7	15.5
3L Lower CL			0.0	0.2	0.2	-0.3	0.0	0.1	-0.1	-0.7	-0.8	-1.5	1.3	5.0	2.4	2.4	5.4	0.8	4.5	4.7	7.1	-0.7	5.2	8.9	5.7	9.8	4.0
3N	55m	375	40.7	58.0		76.5	329.8	398.5	216.7	212.6	310.9	372.8	460.5	643.3	545.5	488.5	1552.0	847.8	350.3	668.0	536.4	783.0	1378.3	281.5	653.6	435.2	
		376	323.3	342.8	323.0	674.8	206.3	711.6	831.3	873.3	782.2	722.5	2047.0	2539.0	1001.9	993.9	1099.3	3188.8	1443.8	1490.0	950.3	739.3	1844.8	476.7	771.3	1340.3	
	91m	360	83.3	92.8	49.5	219.7	100.9	171.3	392.1	406.2	498.8	490.6	458.3	319.4	578.3	546.3	513.3	253.3	457.0	1112.3	463.6	284.9	550.8	531.9	300.0	263.2	
		361	85.4	269.5	269.8	316.6	385.2	450.0	415.8	397.3	528.5	262.0	146.8	737.6	692.0	617.3	359.2	124.3	135.7	555.8	139.3	183.2	507.2	206.1	168.8	419.8	
		362	47.6	60.7	6.7	1.9	6.8	245.0	75.6	307.3	139.4	572.0	202.7	571.4	434.7	339.1	536.3	250.3	279.0	231.1	288.2	331.8	210.4	332.6	320.0	348.0	
		373	1.2	2.5	0.0	0.0	7.1	13.8	0.0	35.3	35.4	63.5	69.9	307.9	189.0	142.9	221.7	156.2	195.6	526.8	214.0	183.6	543.8	222.3	266.3	221.0	
		374	0.0	1.0		0.0	0.0	0.0	30.0	18.0	15.7	182.3	130.3	202.3	108.3	64.7	192.3	155.0	362.3	493.8	436.5	321.0	171.5	799.3	826.3	794.5	
		383	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	1.5	178.2	150.0	0.0	147.0	293.5	331.0	44.5	
	183m	359	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.5	10.5	1.0	17.5	22.7	31.5	14.5	1.0	0.0	128.5	91.6	
		377	0.0		0.0	0.0	0.0	0.0	0.0	3.0	2.0	3.5	4.5	0.0	0.0	0.0	38.0	467.7	355.0	660.0	74.5	48.5	28.4	338.0	830.0	3.5	
		382	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.9	6.0	6.7	0.0	10.9	0.0	71.0	
3N Average			65.9	92.1	86.4	137.7	108.0	212.0	215.0	256.7	241.2	312.4	320.3	489.5	361.7	364.8	485.5	446.1	339.1	526.6	327.8	282.7	558.4	316.2	344.6	375.7	0.0
3N Upper CL			108.1	151.2	189.5	226.4	179.2	294.2	302.9	321.4	313.7	422.3	484.2	662.9	462.2	464.6	611.2	571.0	462.7	634.7	452.8	363.7	686.7	414.2	423.3	504.1	0.0
3N Lower CL			23.8	33.0	-16.6	49.0	36.8	129.8	127.2	191.9	168.7	202.5	156.4	316.2	261.1	265.0	359.7	321.2	215.4	418.5	202.8	201.7	430.2	218.2	265.9	247.3	0.0
3O	91m	330	1.3	0.1	1.3	3.3	0.1	8.2	0.2	7.3	1.7	23.8	3.3	20.0	8.3	22.3	18.0	15.2	10.2	55.3	23.8	37.0	64.0	79.8	52.9	33.8	
		331	6.7	29.0	8.0	16.0	0.0	2.0	0.0	1.0	3.5	14.0	3.5	29.1	41.0	3.0	50.5	41.0	28.0	48.5	11.5	5.1	15.4	13.5	79.5	3.0	
		338	8.5	20.0	2.0	8.8	0.3	97.0	0.5	38.2	31.2	35.8	78.0	260.0	6.4	72.2	2.7	10.1	76.5	8.6	35.9	7.9	10.8	17.8	145.3	18.4	
		340	5.6	36.0	0.3	5.0	1.6	4.8	0.0	28.2	23.2	37.3	4.8	47.6	94.6	31.0	74.1	107.2	36.6	176.3	196.8	131.3	7.7	24.8	160.7	112.4	
		351	36.9	15.9	1.8	35.3	7.0	15.8	11.6	107.3	207.4	135.3	272.6	171.1	170.8	446.1	247.7	114.9	191.9	286.9	264.5	114.4	117.1	187.7	421.9	104.0	
		352	47.9	172.4	150.5	56.7	69.7	121.9	134.3	249.0	269.9	255.0	369.7	288.0	192.3	283.3	255.5	296.9	177.0	232.0	384.8	125.6	286.9	164.3	256.7	276.4	
		353	28.0	0.0	0.0	8.7	0.0	8.7	7.0	82.8	0.5	73.5	30.0	70.0	53.0	253.0	23.8	46.8	42.9	38.3	31.7	94.9	103.3	83.8	36.8	20.3	
	183m	329	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.2	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.7	0.2	3.4	
		332	0.8	0.3	2.3	15.7	5.0	3.3	3.0	0.0	0.3	1.7	1.0	10.0	19.0	0.0	9.0	1.0	3.0	0.7	20.5	0.3	0.0	0.7	4.6	0.0	
		337	0.0	1.0	0.0	0.0	0.0	0.0	19.0	1.3	5.3	0.3	0.9	0.0	0.0	0.0	3.4	16.0	7.3	0.0	0.0	0.0	0.0	9.0	0.7	0.7	
		339	1.0	2.5	0.0	0.0	1.0	0.0	0.3	0.5	0.0		1.5	9.0	23.0	18.5	1.1	3.0	12.0	4.0	0.0	0.0	0.5	32.0	0.0	4.0	
		354	1.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.5	0.5	22.0	0.5	
3O Average			16.1	33.1	22.7	16.4	11.2	31.2	22.7	62.7	69.0	71.4	91.5	95.3	61.4	127.1	81.9	68.7	68.1	90.8	117.6	52.6	72.4	69.2	134.1	70.6	0.0
3O Upper CL			23.9	52.2	51.5	27.2	21.3	50.3	37.7	84.4	98.8	97.2	130.8	155.6	86.6	191.1	128.4	109.3	99.7	131.4	179.5	73.1	110.0	98.6	238.7	106.8	0.0
3O Lower CL			8.2	14.0	-6.2	5.6	1.1	12.2	7.6	41.0	39.2	45.6	52.2	35.0	36.2	63.1	35.5	28.2	36.5	50.1	55.7	32.0	34.7	39.7	29.5	34.5	0.0
3LNO Overall			19.3	29.3	22.4	37.4	28.0	57.3	51.6	69.1	71.1	87.8	98.8	139.8	99.3	110.9	147.8	122.7	95.4	154.0	113.6	80.2	149.1	101.2	122.7	114.9	9.7
3LNO Upper CL			28.9	43.3	41.4	58.6	44.7	76.7	70.5	83.6	88.6	112.7	136.3	179.1	122.7	135.7	180.6	151.7	123.2	181.3	145.2	99.0	178.4	125.1	153.4	145.5	15.5
3LNO Lower CL			9.6	15.4	3.5	16.1	11.3	37.8	32.7	54.6	53.6	62.9	61.3	100.5	75.8	86.1	115.0	93.8	67.7	126.8	82.0	61.4	119.7	77.3	92.1	84.4	4.0

Table 16. Estimates of abundance (millions), biomass ('000 tons), mean number and weight (kg) per tow for Spring surveys in NA

	Abundance				Biomass				Mean number per tow				Mean weight (kg) per tow			
	3L	3N	3O	3LNO	3L	3N	3O	3LNO	3L	3N	3O	3LNO	3L	3N	3O	3LNO
1984	45.4	435.3	63.5	544.2	21.9	167.7	28.2	217.7	22.1	189.7	25.8	79.9	10.7	73.1	11.4	32.0
1985	49.9	240.1	84.1	374.1	21.1	88.2	37.5	146.8	9.4	104.6	34.2	37.1	4.0	38.4	15.2	14.6
1986	26.9	229.5	70.1	326.5	12.6	95.1	30.5	138.2	5.3	100.0	28.5	33.3	2.5	41.5	12.4	14.1
1987	12.3	291.0	90.9	394.2	5.8	77.5	41.2	124.6	2.4	128.1	36.9	40.2	1.1	34.1	16.7	12.7
1988	8.1	135.3	59.7	203.1	3.7	51.4	25.8	81.0	1.6	58.9	24.2	20.7	0.7	22.4	10.5	8.2
1989	7.9	478.3	46.7	532.9	4.0	78.3	21.5	103.8	1.6	208.4	18.9	54.3	0.8	34.1	8.7	10.6
1990	4.7	305.5	57.3	367.4	2.2	75.7	25.1	103.1	0.9	133.1	23.9	37.7	0.4	33.0	10.5	10.6
1991	2.2	268.1	50.0	320.3	1.1	69.1	23.3	93.4	0.4	111.7	19.7	32.5	0.2	28.8	9.2	9.5
1992	0.3	189.2	28.0	217.4	0.2	49.6	11.6	61.4	0.1	79.3	11.0	21.2	0.0	20.8	4.6	6.0
1993	0.2	145.0	101.1	246.3	0.1	50.8	42.4	93.3	0.0	60.4	39.8	24.0	0.0	21.1	16.7	9.1
1994	0.1	126.4	21.9	148.4	0.0	46.3	9.2	55.6	0.0	51.5	8.5	14.1	0.0	18.9	3.6	5.3
1995	0.0	158.8	28.5	187.4	0.0	57.9	12.7	70.6	0.0	66.1	11.2	18.2	0.0	24.1	5.0	6.9
1996	2.5	475.3	161.7	639.4	1.1	103.9	70.6	175.6	0.5	198.0	63.3	62.2	0.2	43.3	27.6	17.1
1997	1.2	554.9	139.4	695.5	0.5	121.3	53.2	174.9	0.2	233.2	54.6	67.7	0.1	51.0	20.8	17.0
1998	1.6	577.2	154.5	733.3	0.5	143.7	58.0	202.2	0.3	240.4	60.5	69.9	0.1	59.8	22.7	19.3
1999	55.4	965.4	269.1	1289.9	28.5	238.5	98.7	365.7	9.6	402.1	105.4	120.4	5.0	99.3	38.7	34.1
2000	40.7	695.3	186.5	922.5	17.5	197.3	72.1	287.0	7.6	289.6	73.1	89.6	3.3	82.2	28.3	27.9
2001	11.5	1119.9	197.2	1328.5	4.4	297.9	63.6	366.0	2.1	466.4	77.3	126.6	0.8	124.1	24.9	34.9
2002	1.6	528.3	161.0	690.9	0.6	147.3	51.6	199.5	0.3	220.0	63.1	66.5	0.1	61.4	20.2	19.2
2003	92.0	914.9	243.2	1250.1	34.7	280.2	72.0	386.9	16.9	381.0	95.3	120.2	6.4	116.7	28.2	37.2
2004	38.7	690.1	237.9	966.7	15.3	216.7	75.8	307.9	7.0	287.4	93.2	92.0	2.8	90.3	29.7	29.3
2005	115.6	822.0	227.1	1164.8	43.6	263.7	81.5	388.8	21.7	342.4	89.0	113.2	8.2	109.8	31.9	37.8
2006	251.5	1035.0	295.9	1582.4	85.7	319.1	99.1	503.8	47.1	660.7	169.8	183.0	16.0	203.7	56.9	58.3
2007	177.5	953.5	309.7	1440.7	60.9	292.8	89.3	443.0	33.3	397.1	121.4	140.0	11.4	121.9	35.0	43.0
2008	115.3	1114.6	250.6	1480.4	43.2	330.4	83.3	456.9	22.6	467.5	98.2	147.5	8.5	138.6	32.6	45.5
2009	47.0	751.6	117.9	916.4	13.2	213.5	44.4	271.2	8.8	313.0	46.2	89.0	2.5	88.9	17.4	26.3
2010	110.3	950.9	272.2	1333.3	28.6	276.9	89.2	394.7	21.0	396.0	106.7	130.8	5.5	115.3	35.0	38.7
2011	160.3	967.3	298.6	1426.1	55.8	266.9	100.2	422.9	29.7	402.9	117.7	137.9	10.3	111.1	39.5	40.9
2012	238.5	1184.6	269.1	1692.1	88.6	315.3	85.6	489.4	46.3	496.9	105.4	167.8	17.2	132.2	33.6	48.5
2013	210.6	955.5	196.5	1362.6	66.3	274.9	56.2	397.3	39.5	397.9	77.0	132.4	12.4	114.5	22.0	38.6
2014	101.0	773.6	204.7	1079.3	34.5	232.4	65.2	332.1	18.9	322.2	80.2	104.9	6.5	96.8	25.5	32.3

Table 17. Estimates of abundance (millions), biomass ('000 tons), mean number and weight (kg) per tow for Fall surveys in NAFC
Divisions 3LNO from 1990-2014.

	Abundance				Biomass				Mean number per tow				Mean weight (kg) per tow			
	3L	3N	3O	3LNO	3L	3N	3O	3LNO	3L	3N	3O	3LNO	3L	3N	3O	3LNO
1990	4.4	148.5	39.5	192.5	2.1	46.5	17.3	65.8	0.8	65.9	16.1	19.3	0.4	20.6	7.0	6.6
1991	2.1	212.3	82.7	297.1	1.0	50.9	30.5	82.4	0.4	92.1	33.1	29.3	0.2	22.1	12.2	8.1
1992	2.0	158.0	55.8	215.9	0.9	44.1	19.4	64.5	0.4	86.4	22.7	22.4	0.2	24.1	7.9	6.7
1993	2.6	327.7	41.6	371.9	1.1	94.2	17.5	112.8	0.5	137.7	16.4	37.4	0.2	39.6	6.9	11.3
1994	0.1	259.3	28.5	287.9	0.0	95.5	10.9	106.4	0.0	108.0	11.2	28.0	0.0	39.8	4.3	10.4
1995	3.6	509.0	79.6	592.2	1.2	102.8	25.7	129.8	0.7	212.0	31.2	57.3	0.2	42.8	10.1	12.6
1996	6.7	516.3	56.2	579.1	2.2	113.2	18.9	134.3	1.1	215.0	22.7	51.6	0.4	47.1	7.6	12.0
1997	6.1	616.2	159.2	781.5	1.3	164.2	57.5	222.9	1.0	256.7	62.7	69.1	0.2	68.4	22.7	19.7
1998	13.1	632.1	183.0	828.2	5.2	173.6	52.8	231.6	2.1	241.2	69.0	71.1	0.8	66.3	19.9	19.9
1999	20.6	743.1	176.5	940.3	9.6	193.0	48.4	250.9	3.5	312.4	71.4	87.8	1.6	81.1	19.6	23.4
2000	37.9	860.3	254.1	1152.3	12.5	252.8	69.7	335.0	6.1	320.3	91.5	98.8	2.0	94.1	25.1	28.7
2001	74.5	1314.7	262.7	1651.9	25.5	368.9	81.4	475.8	11.7	489.5	95.3	139.8	4.0	137.3	29.5	40.3
2002	33.1	971.3	170.4	1174.8	13.6	272.7	53.5	339.7	5.2	361.7	61.4	99.3	2.1	101.5	19.3	28.7
2003	58.9	869.6	334.1	1262.6	18.6	252.0	97.7	368.3	9.2	364.8	127.1	110.9	2.9	105.7	37.2	32.3
2004	63.4	1158.6	209.1	1431.0	22.2	291.6	60.9	374.7	13.4	485.5	81.9	147.8	4.7	122.2	23.9	38.7
2005	38.8	1146.7	190.8	1376.3	14.1	261.5	67.1	342.7	6.6	446.1	68.7	122.7	2.4	101.7	24.2	30.6
2006	61.9	814.1	172.5	1048.5	21.2	232.3	52.0	305.5	10.2	339.1	68.1	95.4	3.5	96.7	20.5	27.8
2007	91.0	1414.2	252.0	1757.2	28.0	377.8	76.5	482.4	15.3	526.6	90.8	154.0	4.7	140.7	27.6	42.3
2008	81.9	787.1	300.2	1169.2	27.8	214.8	79.4	322.0	15.3	327.8	117.6	113.6	5.2	89.5	31.1	31.3
2009	45.1	709.9	145.0	900.0	16.5	180.7	40.7	237.8	7.6	282.7	52.6	80.2	2.8	72.0	14.7	21.2
2010	135.7	1335.9	184.7	1656.3	35.9	336.4	44.9	417.2	22.0	558.4	72.4	149.1	5.8	140.6	17.6	37.5
2011	103.0	759.2	176.5	1038.7	35.3	217.7	57.4	310.4	19.4	316.2	69.2	101.2	6.7	90.7	22.5	30.2
2012	93.4	827.5	342.1	1262.9	25.8	218.7	112.9	357.4	17.5	344.6	134.1	122.7	4.8	91.1	44.2	34.7
2013	103.2	901.9	180.2	1185.4	36.4	251.9	57.8	346.1	19.2	375.7	70.6	114.9	6.8	104.9	22.7	33.5
2014	57.9	0.0	0.0	57.9	19.8	0.0	0.0	19.8	9.7	0.0	0.0	9.7	3.3	0.0	0.0	3.3

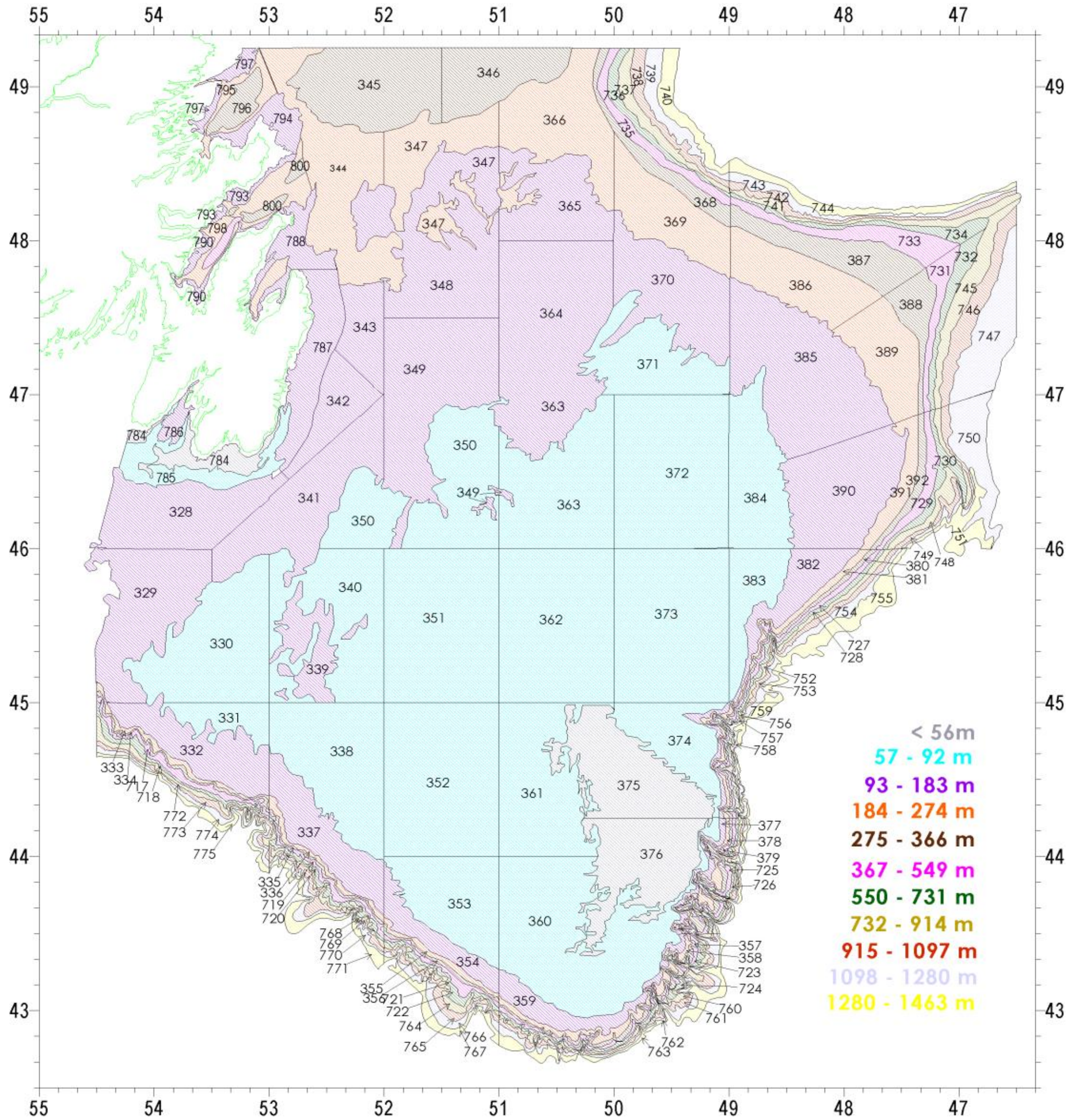

Figure 1. Designation of strata in NAFO divisions 3LNO.

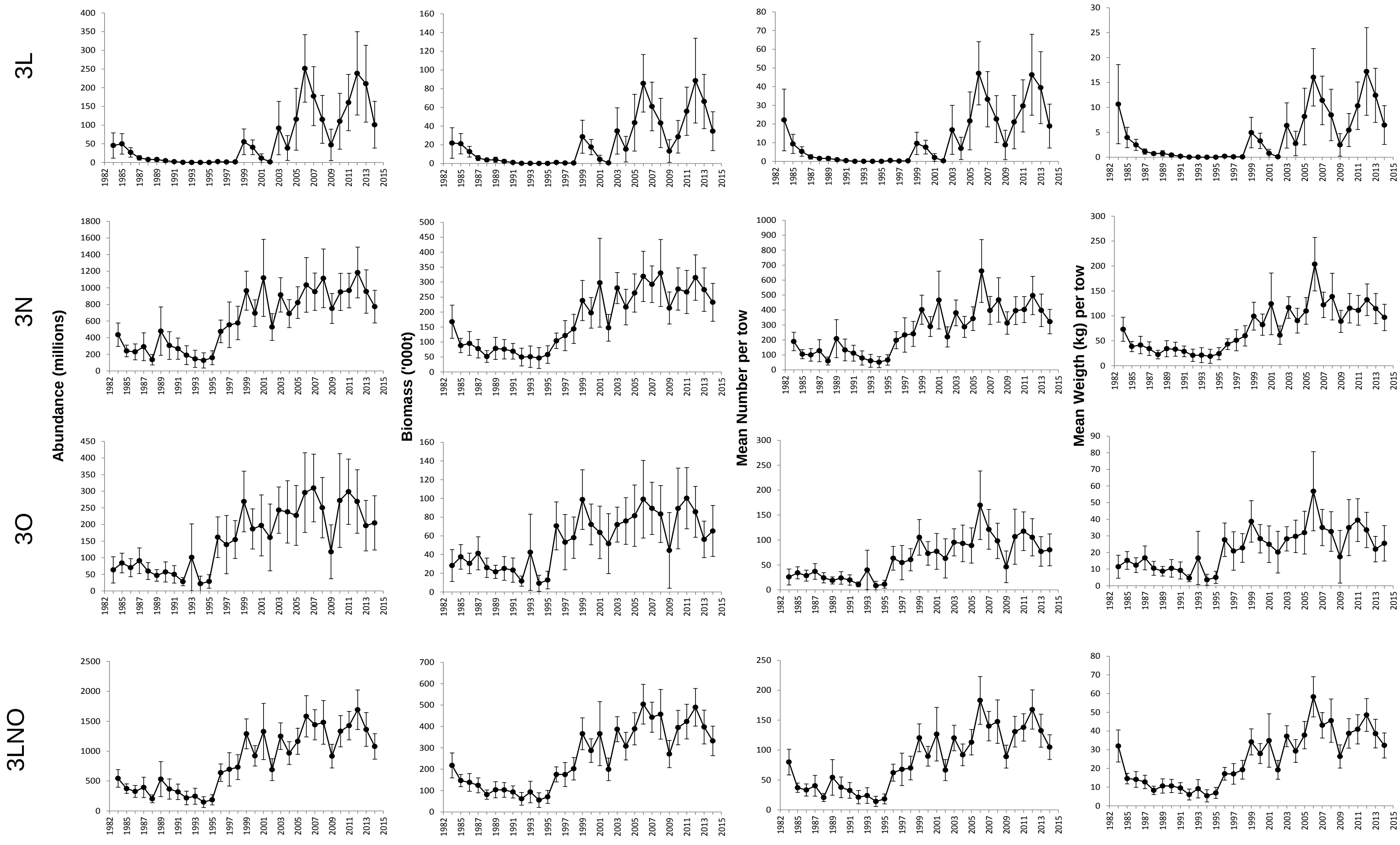

Figure 2. Abundance (millions), Biomass ('000 tons), Mean number and weight (kg) per tow for yellowtail flounder in spring surveys by NAFO division and for 3LNO combined from 1984-2014. Error bars are 95% confidence limits.

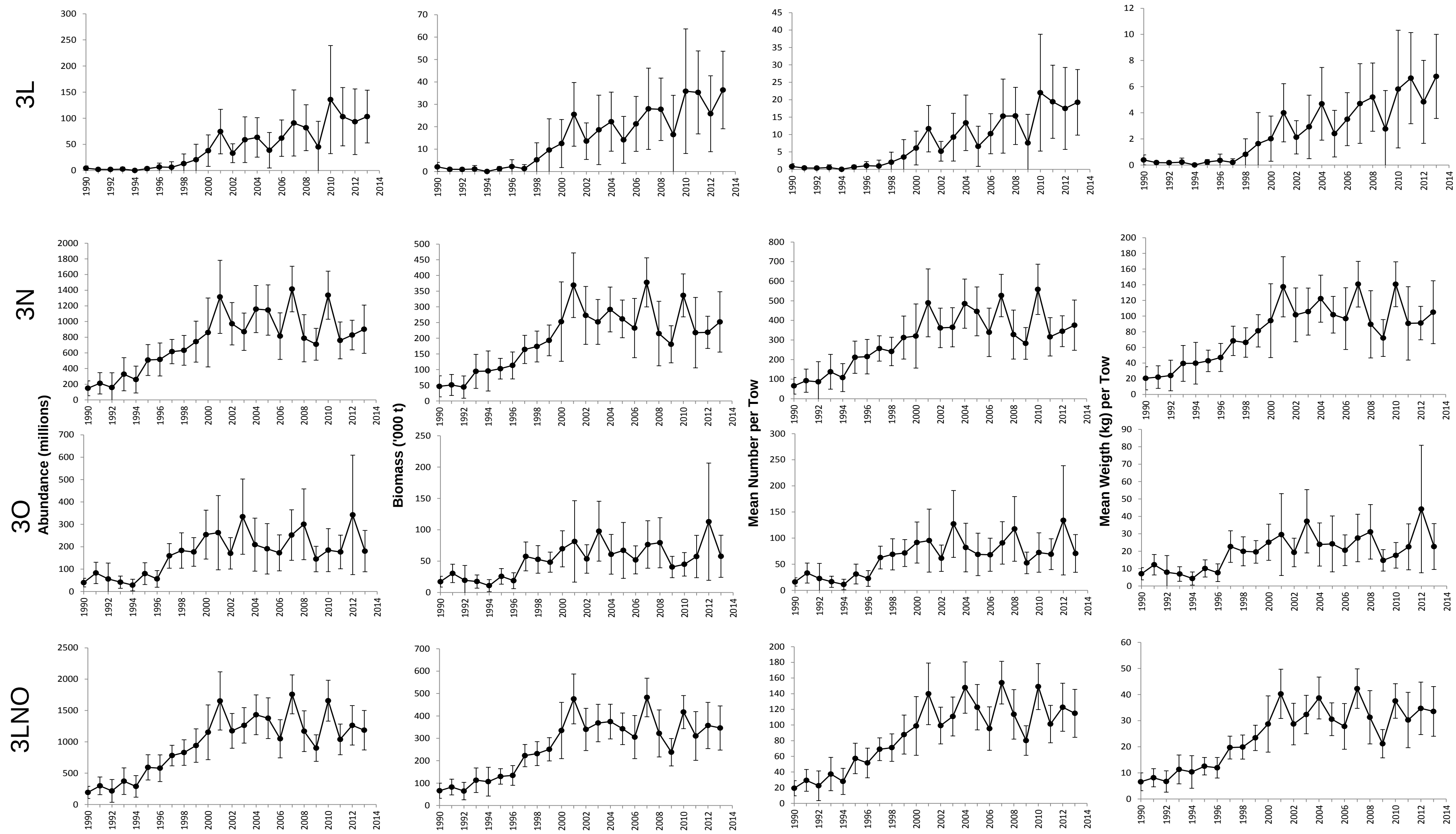

Figure 3. Abundance (millions), Biomass ('000 tons), Mean number and weight (kg) per tow for yellowtail flounder in autumn surveys by NAFO division and for 3LNO combined from 1990-2014. Error bars are 95% confidence limits.

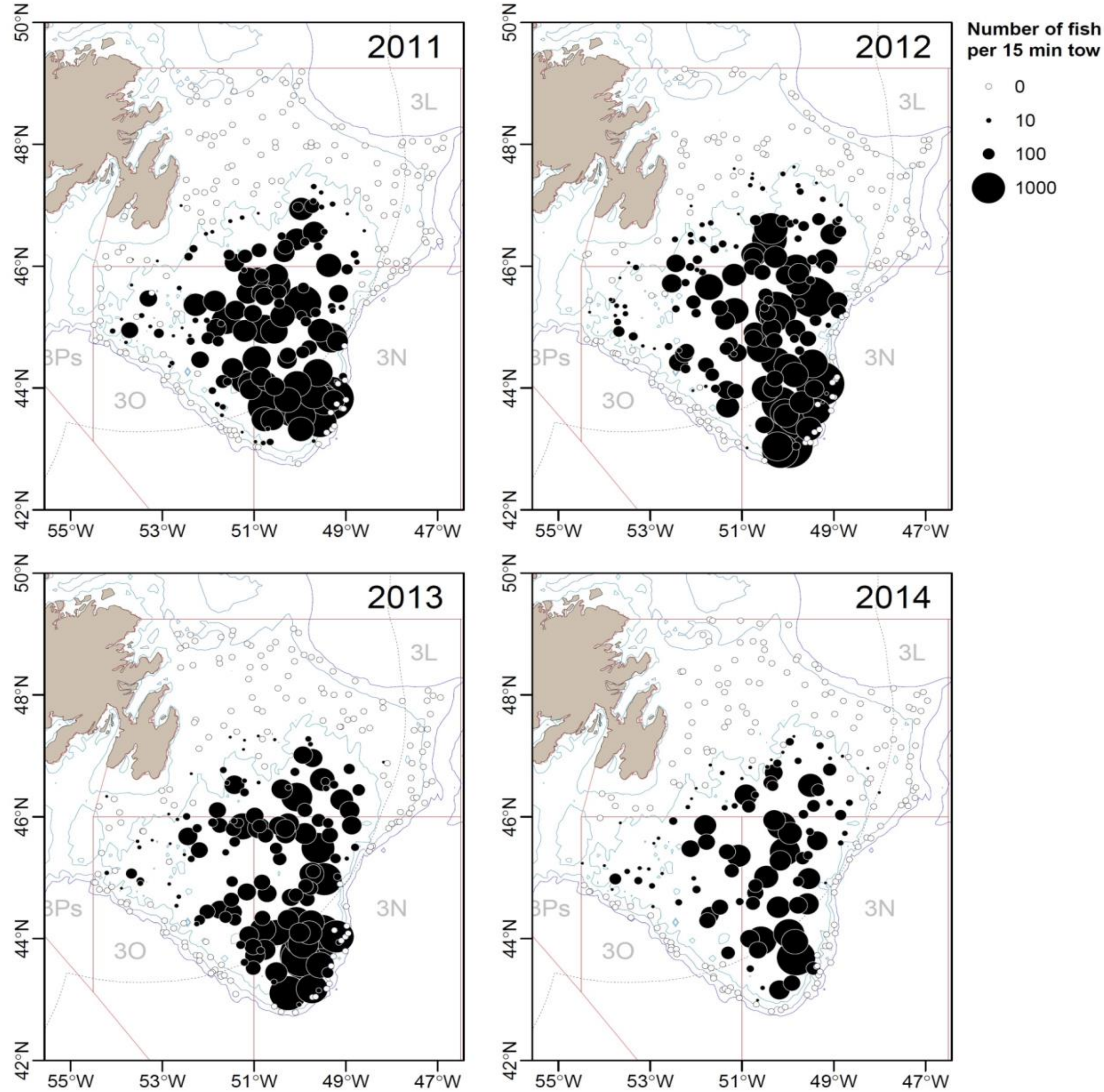

Figure 4. Distribution of Yellowtail flounder in NAFO Divs. 3LNO: number per tow for 2011-2014 spring Canadian surveys.

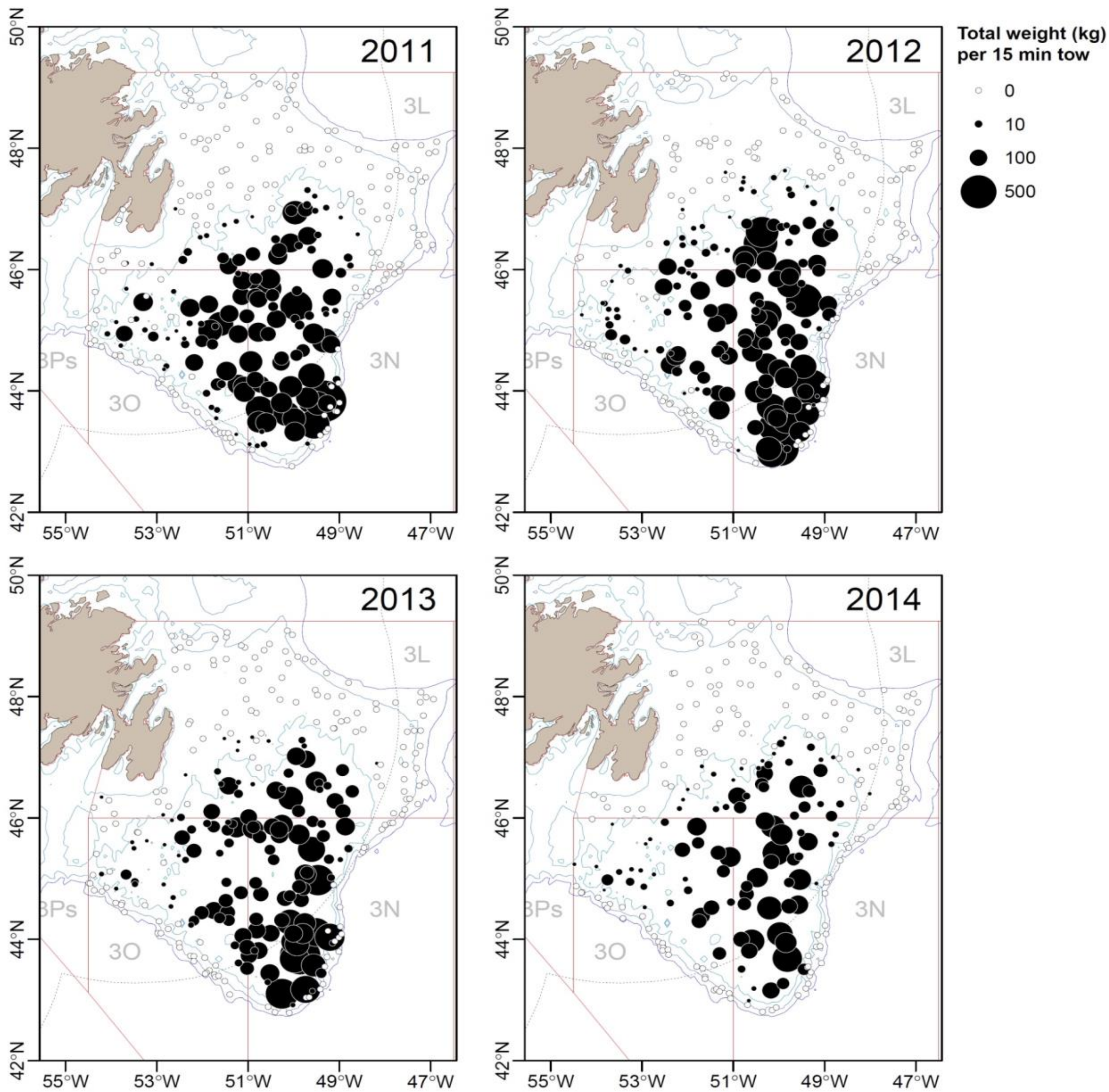

Figure 5. Distribution of yellowtail flounder (weight (kg) per tow) in Canadian spring surveys of NAFO divisions 3LNO from 2011-2014.

Figure 5. Distribution of Yellowtail flounder in NAFO Divs. 3LNO: weight (kg) per tow for 2011-2014 spring Canadian surveys.

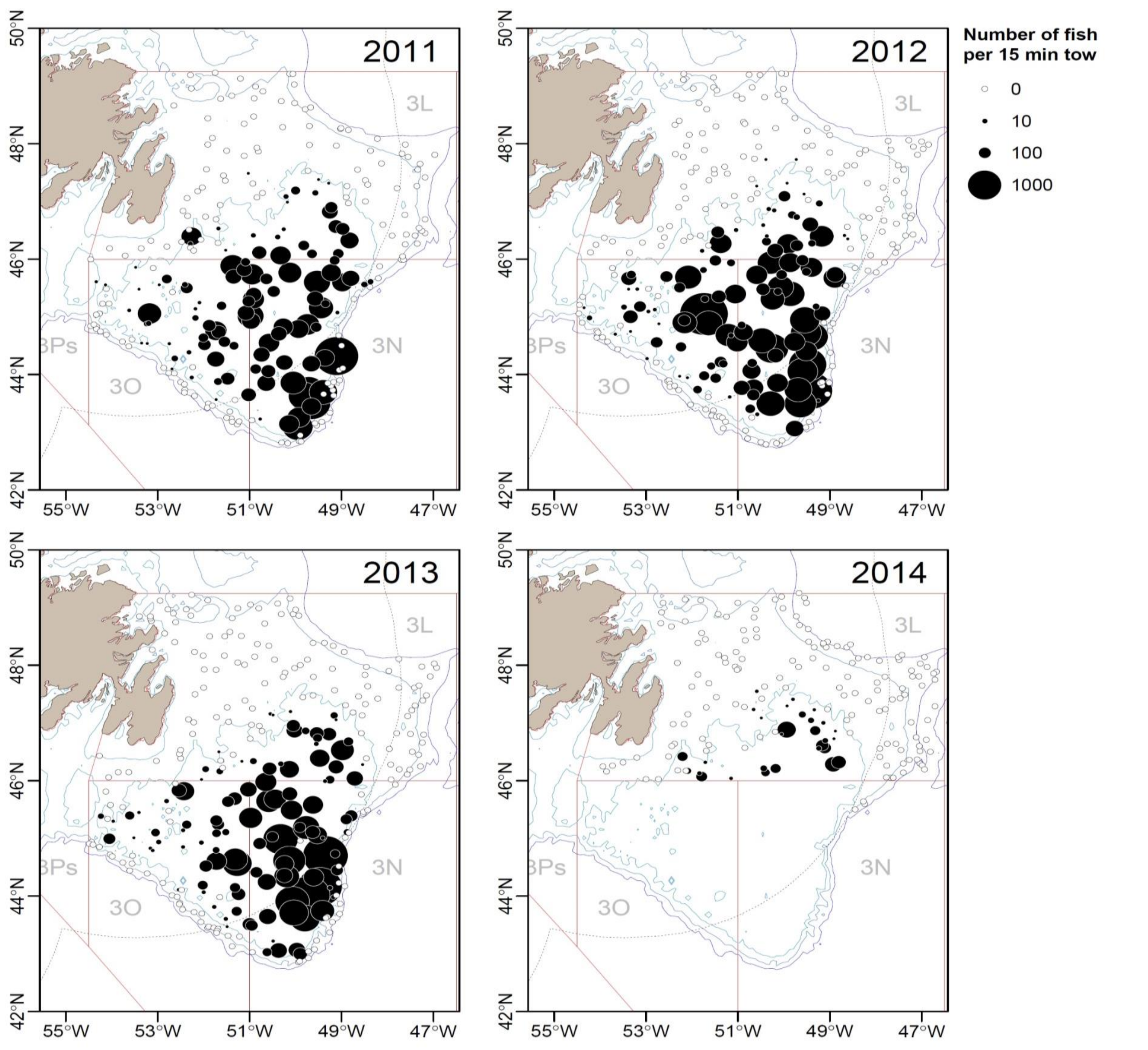

Figure 6. Distribution of Yellowtail flounder in NAFO Divs. 3LNO: number per tow for 2011-2014 fall Canadian surveys.

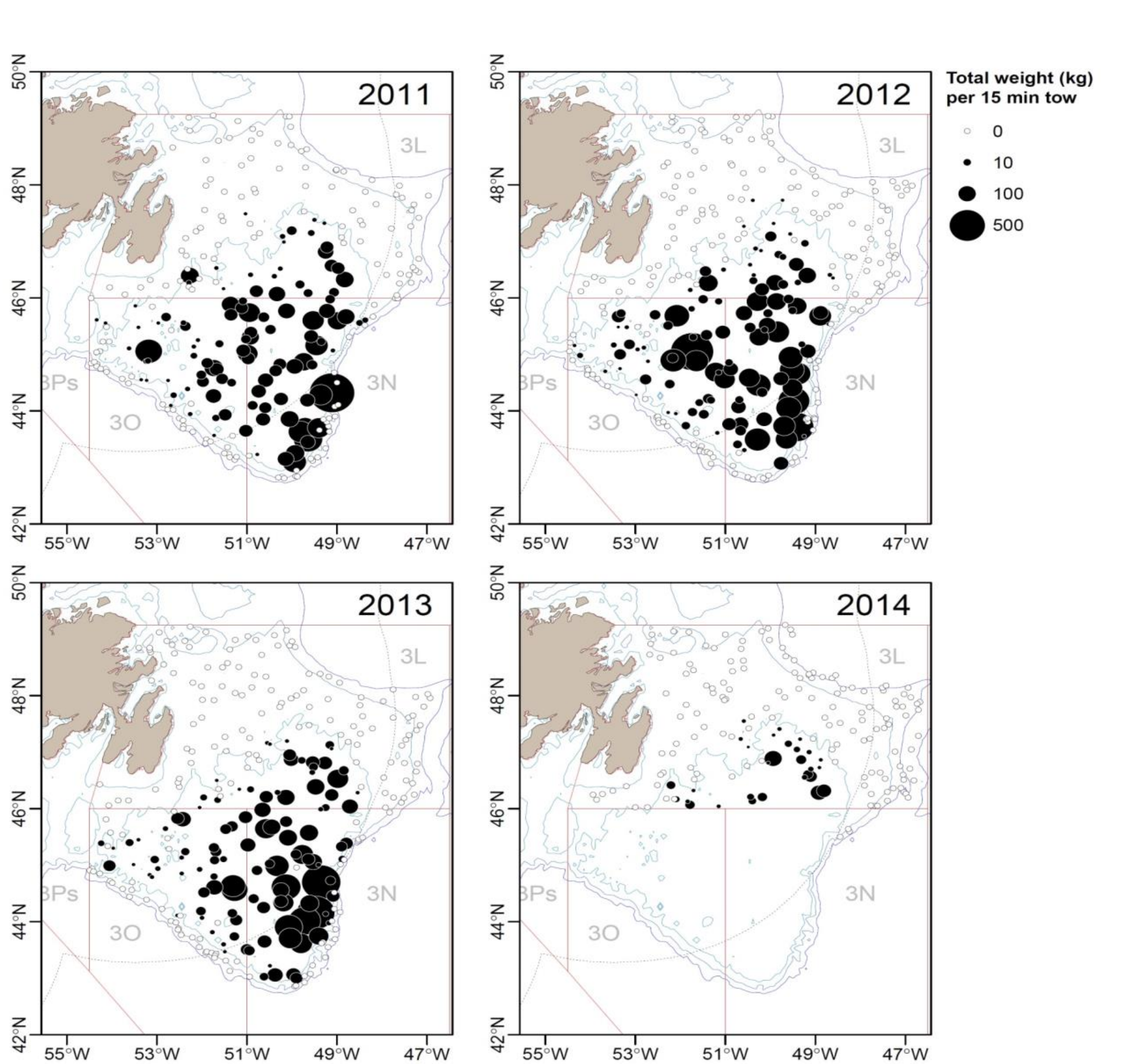

Figure 7. Distribution of Yellowtail flounder in NAFO Divs. 3LNO: weight (kg) per tow for 2011-2014 fall Canadian surveys.

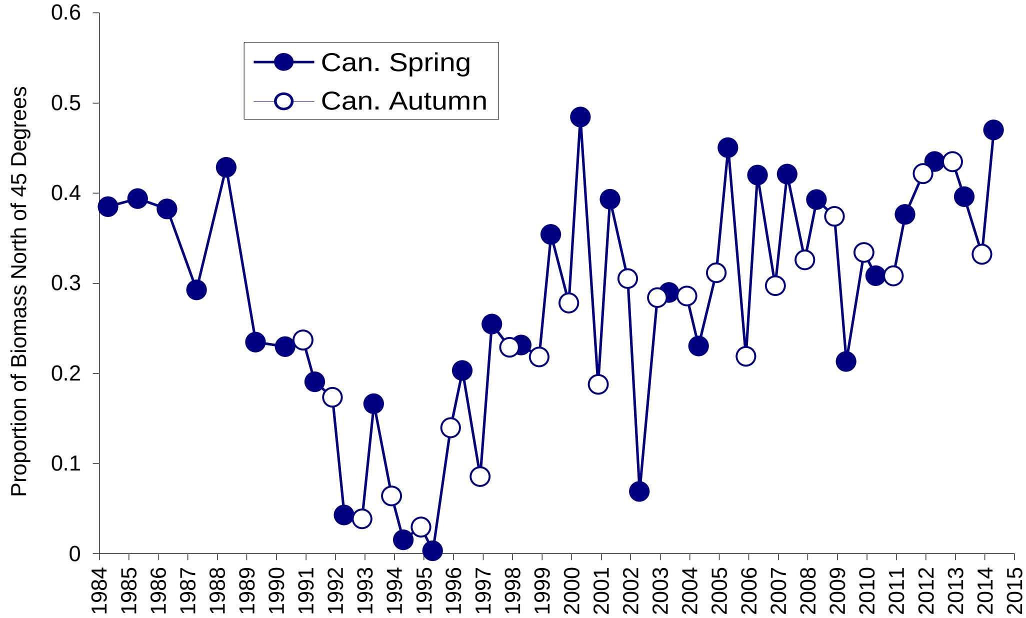

Figure 8. Proportion of yellowtail flounder caught north of 45^{o} N in Divs. 3LNO. All data up to 1990 are from spring surveys only.