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Summary of Yellowtail flounder Catches in the DFO summer Scotian Shelf Survey – 4X and 4VW .

Don Clark[1]
Department of Fisheries and Oceans
St. Andrews Biological Station
St. Andrews, NB

and

Loretta O'Brien[2]
NOAA/National Marine Fisheries Service
Woods Hole Laboratory
Woods Hole, MA 02543

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Introduction

The Scotian Shelf is located northeast of the Gulf of Maine basin and Georges Bank. This working paper provides a graphical summary of abundance and biomass of Yellowtail Flounder on both eastern (4x) and western (4VW) Scotian Shelf. The data was collected on the Department of Fisheries and Oceans (DFO) summer survey research bottom trawl survey during 1970-2013.

In the figure below, distribution of Yellowtail Flounder on the eastern Scotian Shelf is primarily on Browns Bank (left panel). The 2013 survey catch of Yellowtail Flounder indicates catch on Browns Bank of about 25 kg/tow or less and sporadic catches as far north as the Bay of Fundy (right panel).

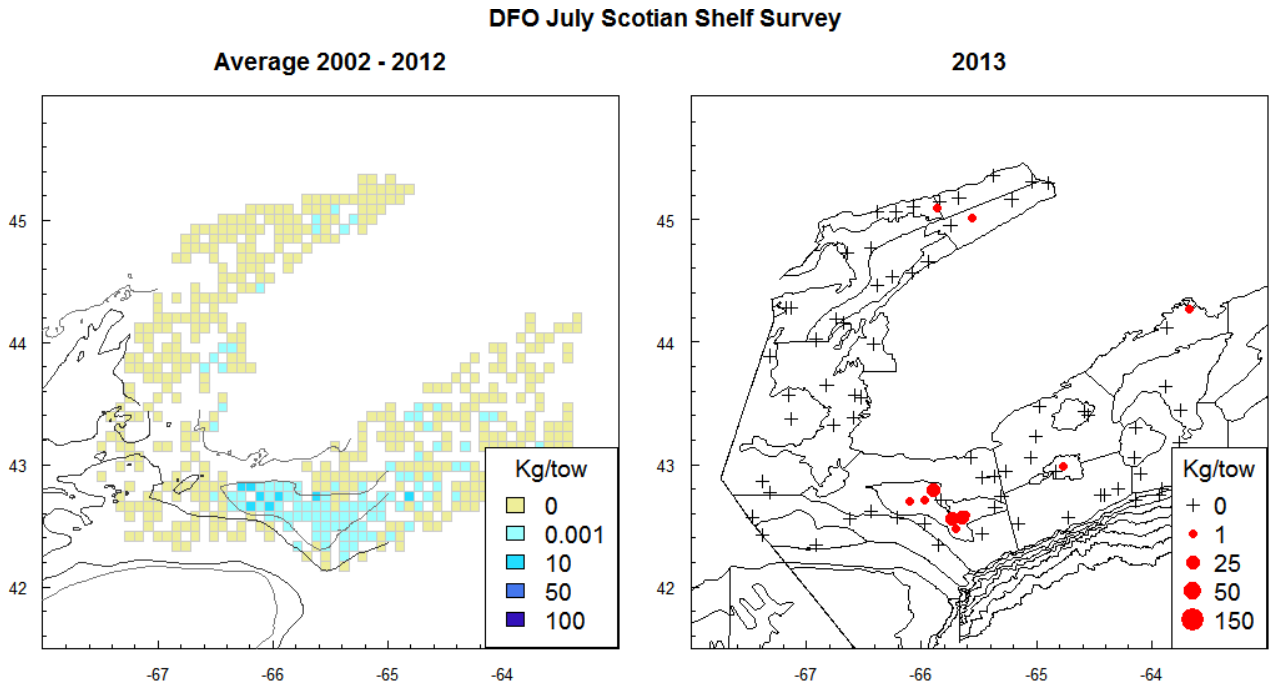

Figure 1. The average catch per tow (kg/tow) during 2002-2012 (left panel) and the catch per tow (kg/tow) in 2013 (right panel) of Yellowtail Flounder in the western Scotian Shelf region from the DFO summer research bottom trawl survey.

On the following pages, tables and figures have been excerpted from the MARITIMES RESEARCH VESSEL SURVEY TRENDS ON THE SCOTIAN SHELF AND BAY OF FUNDY. Canadian Science Advisory Secretariat Science Response 2013/004 http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2013/2013_004-eng.pdf

The time-series of survey biomass indices are compared to averages for a series of time periods to provide historical context for biomass levels. The time periods used are a short-term 5 year average (2007-2011), a medium-term 15 year average (1997-2011), and the long-term survey average (1970-2011) (Table 1).

Table 1. RV survey biomass indices for species by stock/region for 2011, 2012, 2013, and averages for short-term 5 year (2007-2011), medium-term 15 year (1997-2011), and long-term (1970-2011) time periods.

Stock/Region	2013	2012	2011	2007-2011 Avg	1997-2011 Avg	1970-2011 Avg
4X Atlantic Cod	2,058	3,268	3,775	6,413	11,202	20,963
4VsW Atlantic Cod	9,525	4,709	27,771	32,681	17,121	52,926
4Vn Atlantic Cod	966	1,561	4,229	4,934	4,902	15,723
4VW Haddock	43,461	30,540	28,763	71,043	63,689	60,157
4X Haddock	36,580	28,980	47,874	50,470	54,999	57,123
4VW White Hake	2,868	1,933	5,191	5,393	5,859	10,157
4X White Hake	7,443	7,934	9,365	13,110	11,543	18,845
4VWX Silver Hake	35,461	48,166	51,918	32,376	25,845	*35,535
Western Component Pollock	26,823	5,981	8,111	28,381	26,417	31,120
Eastern Component Pollock	33,006	35,968	153,057	53,384	24,384	27,378
Unit II Redfish	23,233	14,586	56,236	61,869	40,377	50,522
Unit III Redfish	77,123	203,943	213,287	194,748	117,840	114,572
4X American Plaice	312	767	858	1,213	1,416	2,085
4VW American Plaice	19,559	7,900	9,600	13,481	16,323	24,252
4X Witch Flounder	869	731	488	1,357	1,569	1,849
4VW Witch Flounder	4,773	3,977	5,119	5,725	4,180	3,959
4X Yellowtail Flounder	102	332	725	755	892	684
4VW Yellowtail Flounder	14,646	9,371	11,615	11,869	10,554	13,644
4X Winter Flounder	6,448	6,295	3,589	6,712	4,994	3,444
4VW Winter Flounder	426	556	740	497	818	912
4VWX Atlantic Halibut	8,656	7,685	6,777	6,896	4,143	3,298
4X Atlantic Wolffish	10	309	638	343	995	2,153
4VW Atlantic Wolffish	176	196	483	552	945	2,006
4X Monkfish	308	486	732	705	1,190	2,288
4VW Monkfish	760	738	1,178	1,027	1,347	3,281
4X Smooth Skate	326	106	344	400	369	490
4VW Smooth Skate	49	240	119	175	198	474
4X Thorny Skate	323	166	232	671	1,080	4,044
4VW Thorny Skate	1,421	1,602	4,591	3,235	4,505	11,690
4X Barndoor Skate	985	1,235	367	1,809	974	426
4VW Barndoor Skate	1,169	564	671	355	228	235
4X Winter Skate	998	1,784	729	792	822	981
4VW Winter Skate	277	97	408	427	1,001	3,650
4X Little Skate	1,467	1,272	855	968	991	780
4VW Little Skate	262	67	143	78	105	136
4VWX Spiny Dogfish	259,461	44,310	23,253	116,581	168,785	126,363
4X Longhorn Sculpin	803	784	1,963	2,155	1,840	1,620
4VW Longhorn Sculpin	1,637	1,044	1,300	2,190	3,178	2,904

*For silver hake, average is 1982-2011

Yellowtail Flounder

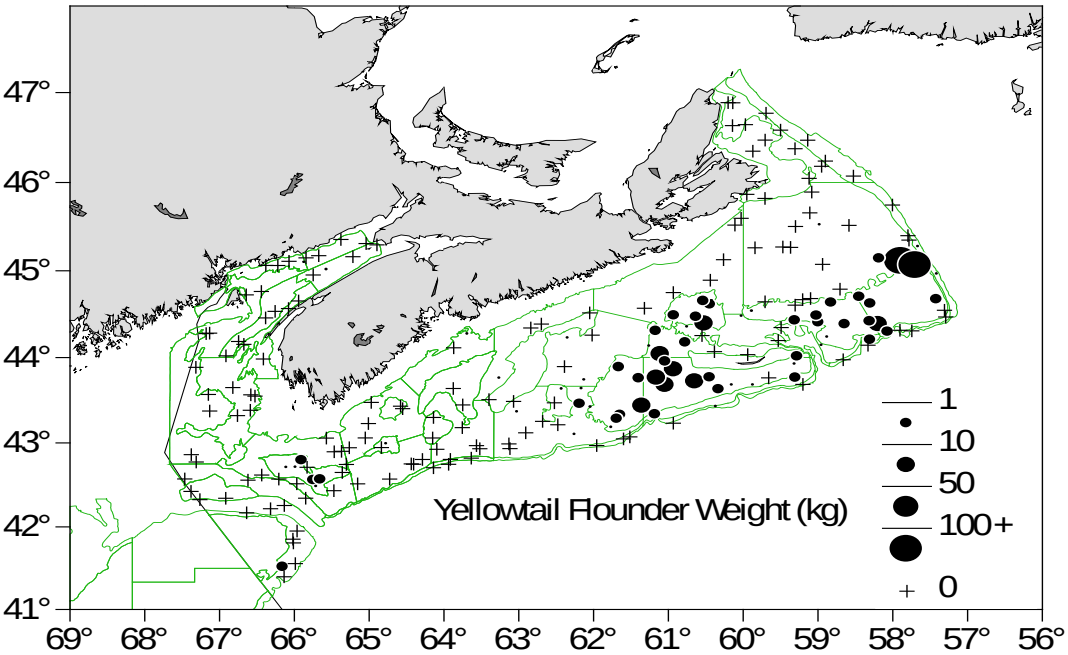

Figure 11a. Distribution of Yellowtail Flounder catches during the 2013 summer RV survey. Zero catch is represented by the + symbol. Black circles represent catches. The circle area is proportional to the catch size.

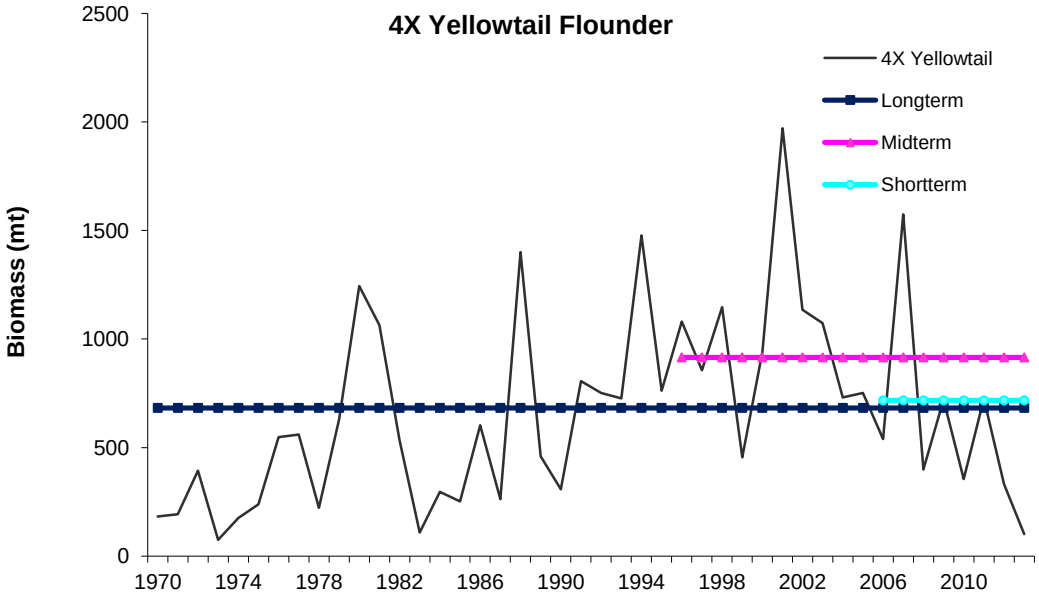

Figure 11b. Biomass index for Yellowtail Flounder in 4X from the summer RV survey represented by the solid black line. The dark blue line with the solid squares indicates the long-term survey

average (1970-2011). The pink line with the solid triangles represents the medium-term 15 year average (1997-2011). The light blue line with the solid circles represents the short-term 5 year average (2007-2011).

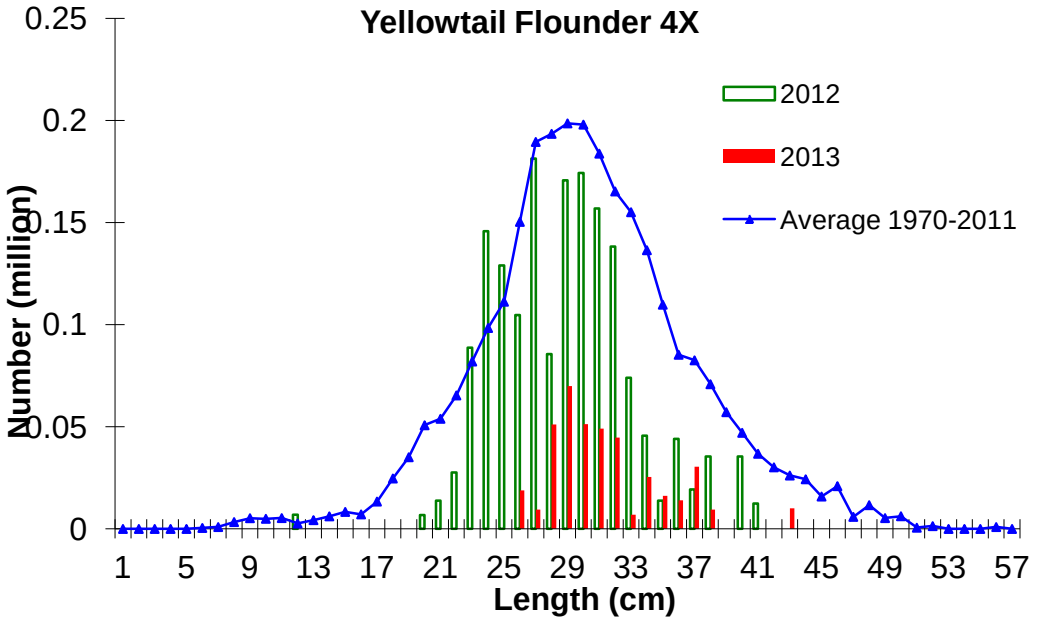

Figure 11c. Length frequency indices for Yellowtail Flounder in 4X from the summer RV survey. The solid red bars represent the number in millions at length from the 2013 survey. The open green bars represent the number in millions at length from the 2012 survey. The solid blue line with triangles represents the average number in millions at length for the time period 1970-2011.

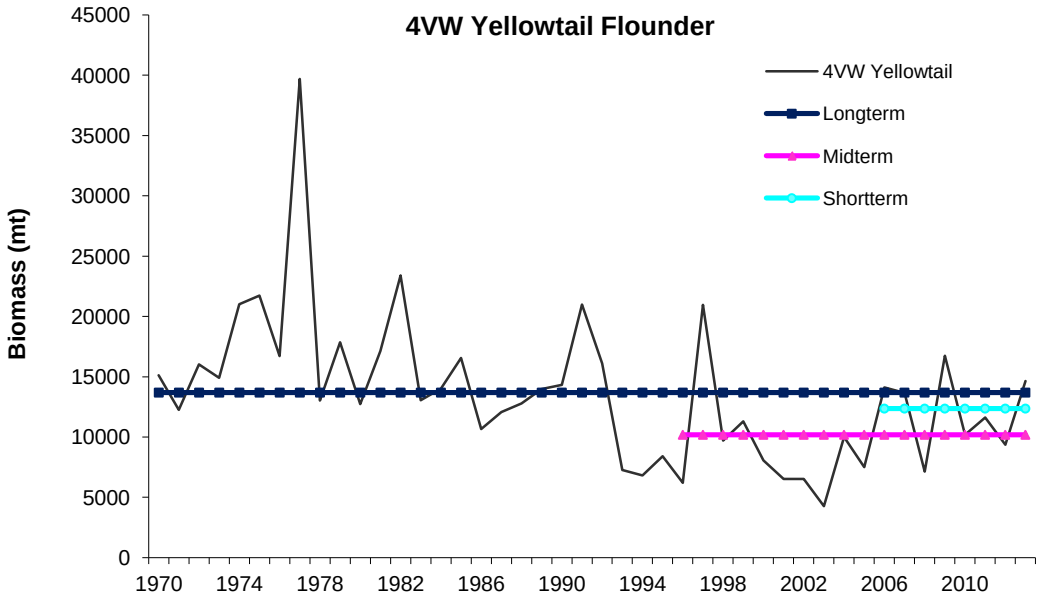

Figure 11d. Biomass index for Yellowtail Flounder in 4VW from the summer RV survey represented by the solid black line. The dark blue line with the solid squares indicates the long-

term survey average (1970-2011). The pink line with the solid triangles represents the medium-term 15 year average (1997-2011). The light blue line with the solid circles represents the short-term 5 year average (2007-2011).

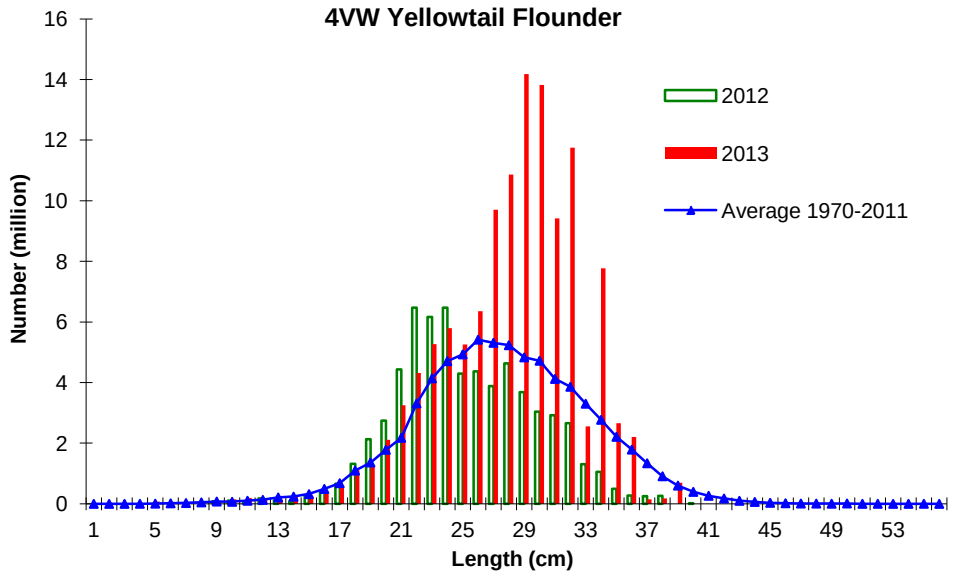

Figure 11e. Length frequency indices for Yellowtail Flounder in 4VW from the summer RV survey. The solid red bars represent the number in millions at length from the 2013 survey. The open green bars represent the number in millions at length from the 2012 survey. The solid blue line with triangles represents the average number in millions at length for the time period 1970-2011.