

## Appendix 1: Analysis of DFO RV Survey Data from 3Ps

Data collected during 2002-2005 DFO RV surveys in areas of NAFO Division 3Ps that occur within the Study Area were analyzed according to depth range. The survey area represents the northern half of the portion of the Study Area that occurs in Newfoundland waters. The survey strata that occur within the Study Area are characterized by mean depths ranging from <100 m to >500 m. Eight of the 17 strata analyzed occur on the 3Ps Shelf (i.e., inside of 200 m), and the remaining nine strata occur on the Slope of St. Pierre Bank and in the eastern Laurentian Channel.

Catch weights and numbers of individuals were analyzed for six depth ranges including the following: (1) <100 m, (2) 100 to 200 m, (3) >200 to 300 m, (4) >300 to 400 m, (5) >400 to 500 m, and (6) >500 m (Table 1). RV survey catch statistics for 22 species are included in Table 1. Catch weights and numbers of individuals for each species are also presented as percentages of the total catch weights and numbers for each depth range.

Maps showing the catch distributions of species with the highest catch weights during the 2002-2005 RV surveys are also presented (Figures 1 to 6).

### Average Water Depth <100 m

Survey catches on areas of the 3Ps Shelf where average depths were less than 100 m were dominated by sea cucumbers, yellowtail flounder and sand lance in terms of both catch weight (Figures 2, 3 and 5) and number of individuals. Mailed sculpins were also caught in relatively large numbers (Table 1).

### Average Water Depth 100 to 200 m

Survey catches in areas of the 3Ps Shelf where average depths ranged between 100 m and 200 m were dominated by Atlantic cod, thorny skate and American plaice in terms of catch weight (Figures 1, 2 and 3). The survey catch number in these areas was dominated by capelin (Figure 6), mailed sculpin and American plaice (Table 1).

### Average Water Depth >200 to 300 m

Survey catches in areas of the 3Ps Slope where average depths ranged between >200 m and 300 m were dominated by thorny skate, deepwater redfish and Atlantic cod in terms of catch weight (Figures 1 and 2). The survey catch number in these areas was dominated by deepwater redfish, witch flounder and longfin hake (Table 1).

### Average Water Depth >300 to 400 m

Survey catches in areas of the 3Ps Slope and the Laurentian Channel where average depths ranged between >300 m and 400 m were dominated by deepwater redfish, Atlantic cod, thorny skate and white hake in terms of catch weight (Figures 1, 2 and 4). The survey catch number in these areas was dominated by deepwater redfish, witch flounder and longfin hake (Table 1).

### Average Water Depth >400 to 500 m

Survey catches in areas of the 3Ps Slope and Laurentian Channel where average depths ranged between >400 m and 500 m were dominated by deepwater redfish, unspecified invertebrates, thorny skate and white hake in terms of catch weight (Figures 1, 2 and 4). The survey catch number in these areas was dominated by deepwater redfish, longfin hake, witch flounder and marlin spike (Table 1).

### Average Water Depth >500 m

Survey catches in areas of the 3Ps Slope where average depths exceeded 500 m were dominated by white hake, deepwater redfish, unspecified invertebrates, and longfin hake in terms of catch weight (Figures 1, 4 and 5). The survey catch number in areas with average depths exceeding 500 m was dominated by longnose eels, marlin spikes, longfin hake, shrimp and lanternfishes (Table 1).

### Monkfish

The largest catches of monkfish during the 2002-2005 DFO RV surveys in the area of 3Ps occurring in the Study Area were made in strata where the average water depth ranged between 300 and 500 m. However, even in these areas, monkfish catches represented a very small proportion of the total catches.

**Table 1. DFO RV Survey Catches in Area of 3Ps Occurring Within the Study Area, 2002-2005.**

SPECIES	DEPTH RANGE (M)											
	<100 (STRATA 315, 320, 321, 325, 326)		100-200 (STRATA 317, 319, 323)		>200-300 (STRATA 316, 318)		>300-400 (STRATA 706, 707, 711)		>400-500 (STRATA 708, 712, 713)		>500 (STRATUM 709)	
	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER
Deepwater redfish ( <i>Sebastes mentella</i> )	5 (<1%)	29 (<1%)	109 (<1%)	3,395 (5%)	2,691 (23%)	19,689 (56%)	4,962 (45%)	22,646 (55%)	7,620 (48%)	14,981 (32%)	160 (17%)	332 (7%)
Atlantic cod ( <i>Gadus morhua</i> )	1,189 (6%)	396 (<1%)	6,726 (55%)	4,286 (6%)	1,716 (14%)	1,508 (4%)	1,590 (14%)	1,030 (3%)	277 (2%)	317 (<1%)	43 (5%)	68 (1%)
Thorny skate ( <i>Raja radiata</i> )	1,301 (7%)	948 (<1%)	1,566 (13%)	1,289 (2%)	4,068 (34%)	1,684 (5%)	922 (8%)	436 (1%)	497 (4%)	390 (<1%)	45 (5%)	10 (<1%)
Sea cucumbers (Holothuroidea)	7,506 (38%)	21,170 (11%)	7 (<1%)	21 (<1%)	<1 (<1%)	1 (<1%)	0	0	0	0	0	0
Unspecified invertebrates	672 (3%)	-	456 (4%)	-	46 (<1%)	-	692 (6%)	-	3,699 (23%)	-	109 (12%)	-
American plaice ( <i>Hippoglossoides platessoides</i> )	1,614 (8%)	4,142 (2%)	923 (7%)	6,565 (9%)	806 (7%)	1,917 (5%)	233 (2%)	470 (1%)	44 (<1%)	266 (<1%)	19 (2%)	50 (1%)
Yellowtail flounder ( <i>Limanda ferruginea</i> )	3,085 (16%)	4,433 (2%)	17 (<1%)	31 (<1%)	14 (<1%)	21 (<1%)	5 (<1%)	6 (<1%)	<1 (<1%)	2 (<1%)	0	0
White hake ( <i>Urophycis tenuis</i> )	0	0	60 (<1%)	29 (<1%)	694 (6%)	876 (2%)	857 (8%)	913 (2%)	506 (3%)	539 (1%)	219 (23%)	159 (3%)
Witch flounder ( <i>Glyptocephalus cynoglossus</i> )	4 (<1%)	24 (<1%)	221 (2%)	609 (<1%)	542 (5%)	3,037 (9%)	655 (6%)	4,312 (10%)	508 (3%)	5,366 (11%)	32 (3%)	236 (5%)
Sand lance ( <i>Ammodytes dubius</i> )	1,691 (9%)	123,658 (66%)	8 (<1%)	702 (<1%)	0	0	0	0	0	0	0	0
Longfin hake ( <i>Urophycis chesteri</i> )	<1 (<1%)	7 (<1%)	<1 (<1%)	33 (<1%)	92 (<1%)	2,729 (8%)	256 (2%)	3,477 (8%)	593 (4%)	6,049 (13%)	98 (10%)	525 (11%)
Haddock ( <i>Melanogrammus aeglefinus</i> )	0	0	735 (6%)	584 (<1%)	275 (2%)	248 (<1%)	8 (<1%)	7 (<1%)	2 (<1%)	1 (<1%)	0	0
Longhorn sculpin ( <i>Myoxocephalus octodecemspinosus</i> )	672 (3%)	1,783 (<1%)	15 (<1%)	45 (<1%)	3 (<1%)	6 (<1%)	3 (<1%)	9 (<1%)	5 (<1%)	7 (<1%)	<1 (<1%)	1 (<1%)
Capelin ( <i>Mallotus villosus</i> )	4 (<1%)	330 (<1%)	450 (4%)	40,028 (54%)	7 (<1%)	492 (1%)	<1 (<1%)	29 (<1%)	0	0	0	0
Mailed sculpin ( <i>Triglops</i> spp.)	85 (<1%)	11,166 (6%)	83 (<1%)	7,128 (10%)	-	2 (<1%)	-	5 (<1%)	0	0	0	0
Toad crab ( <i>Hyas</i> spp.)	110 (<1%)	5,698 (3%)	4 (<1%)	196 (<1%)	0	0	-	1 (<1%)	2 (<1%)	5 (<1%)	0	0
Marlin spike ( <i>Nezumia bairdi</i> )	0	0	-	9 (<1%)	8 (<1%)	414 (1%)	51 (<1%)	1,259 (3%)	226 (1%)	4,630 (10%)	26 (3%)	615 (12%)
Barracudinas ( <i>Paralepis</i> spp.)	0	0	-	11 (<1%)	<1 (<1%)	71 (<1%)	10 (<1%)	1,351 (3%)	11 (<1%)	782 (2%)	1 (<1%)	42 (<1%)

SPECIES	DEPTH RANGE (M)											
	<100 (STRATA 315, 320, 321, 325, 326)		100-200 (STRATA 317, 319, 323)		>200-300 (STRATA 316, 318)		>300-400 (STRATA 706, 707, 711)		>400-500 (STRATA 708, 712, 713)		>500 (STRATUM 709)	
	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER	WEIGHT (KG)	NUMBER
Shrimp	0	0	0	0	<1 (<1%)	40 (<1%)	4 (<1%)	520 (1%)	7 (<1%)	2.082 (4%)	<1 (<1%)	557 (11%)
Longnose eel ( <i>Synaphobranchus kaupi</i> )	0	0	<1 (<1%)	10 (<1%)	-	2 (<1%)	1 (<1%)	55 (<1%)	11 (<1%)	394 (<1%)	25 (3%)	801 (16%)
Lanternfishes (Myctophidae)	0	0	-	2 (<1%)	-	1 (<1%)	3 (<1%)	709 (2%)	2 (<1%)	737 (2%)	1 (<1%)	541 (11%)
Monkfish ( <i>Lophius americanus</i> )	2 (<1%)	1 (<1%)	10 (<1%)	7 (<1%)	111 (<1%)	49 (<1%)	172 (2%)	47 (<1%)	171 (1%)	41 (<1%)	17 (2%)	4 (<1%)

Percentages in parentheses are relative to either the total weight or number in that particular depth range.

Shaded cells are the three top-ranked cells in each column, darkest shading representing highest ranking.

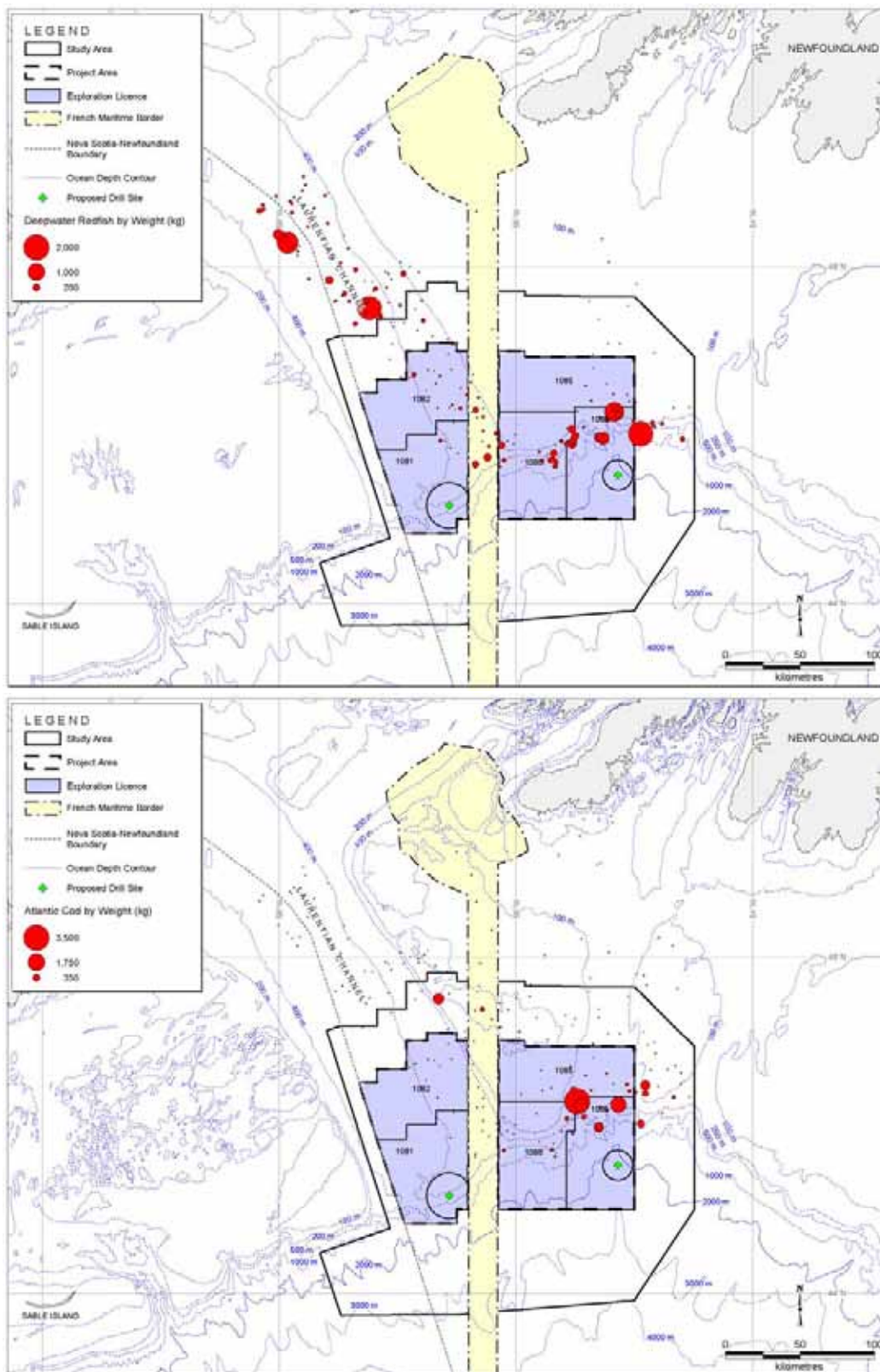


Figure 1. Distribution of RV Survey Catch Weights, 2002-2005 combined, for Deepwater Redfish (top) and Atlantic Cod (bottom).

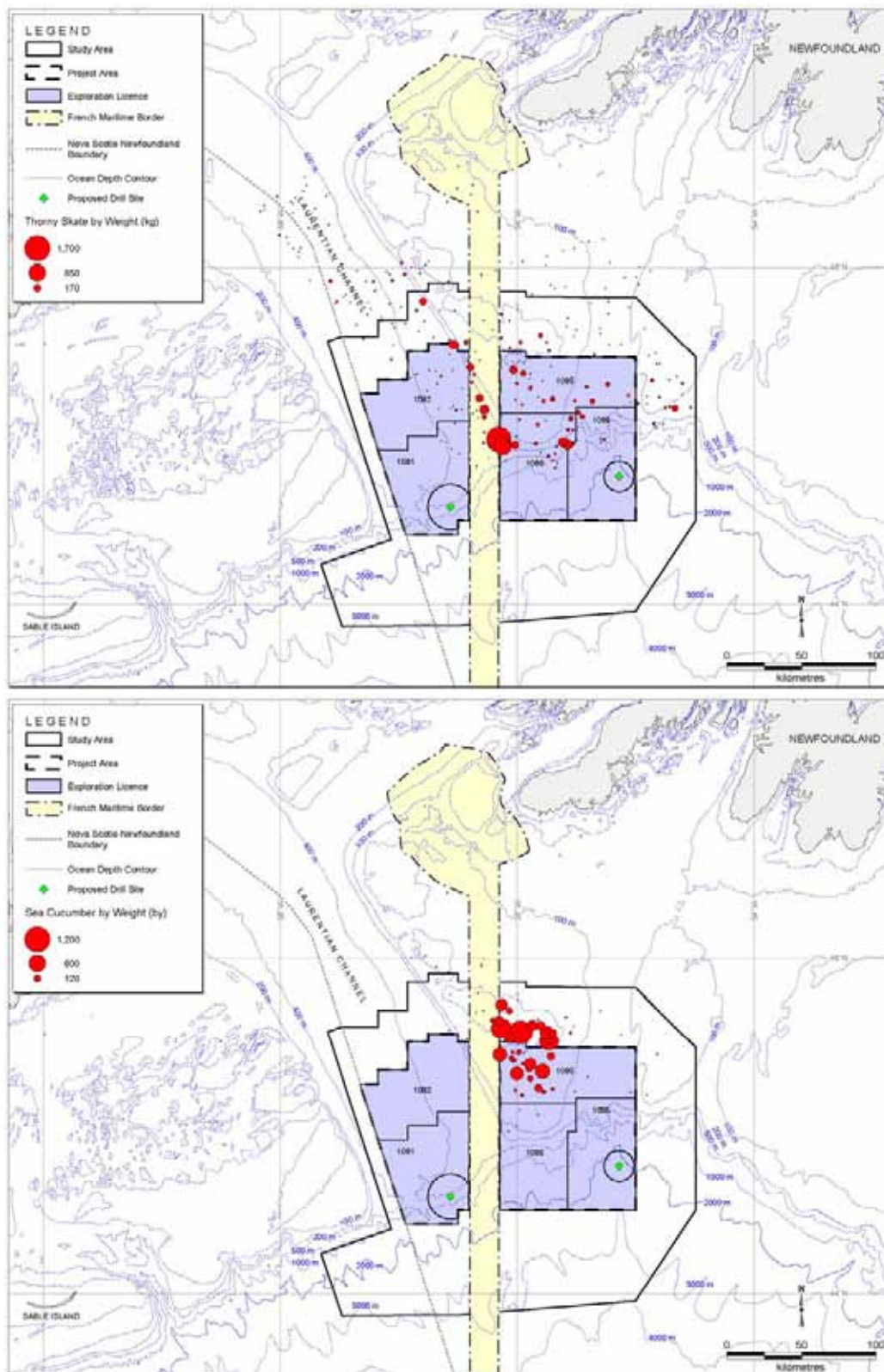


Figure 2. Distribution of RV Survey Catch Weights, 2002-2005 combined, for Thorny Skate (top) and Sea Cucumber (bottom).



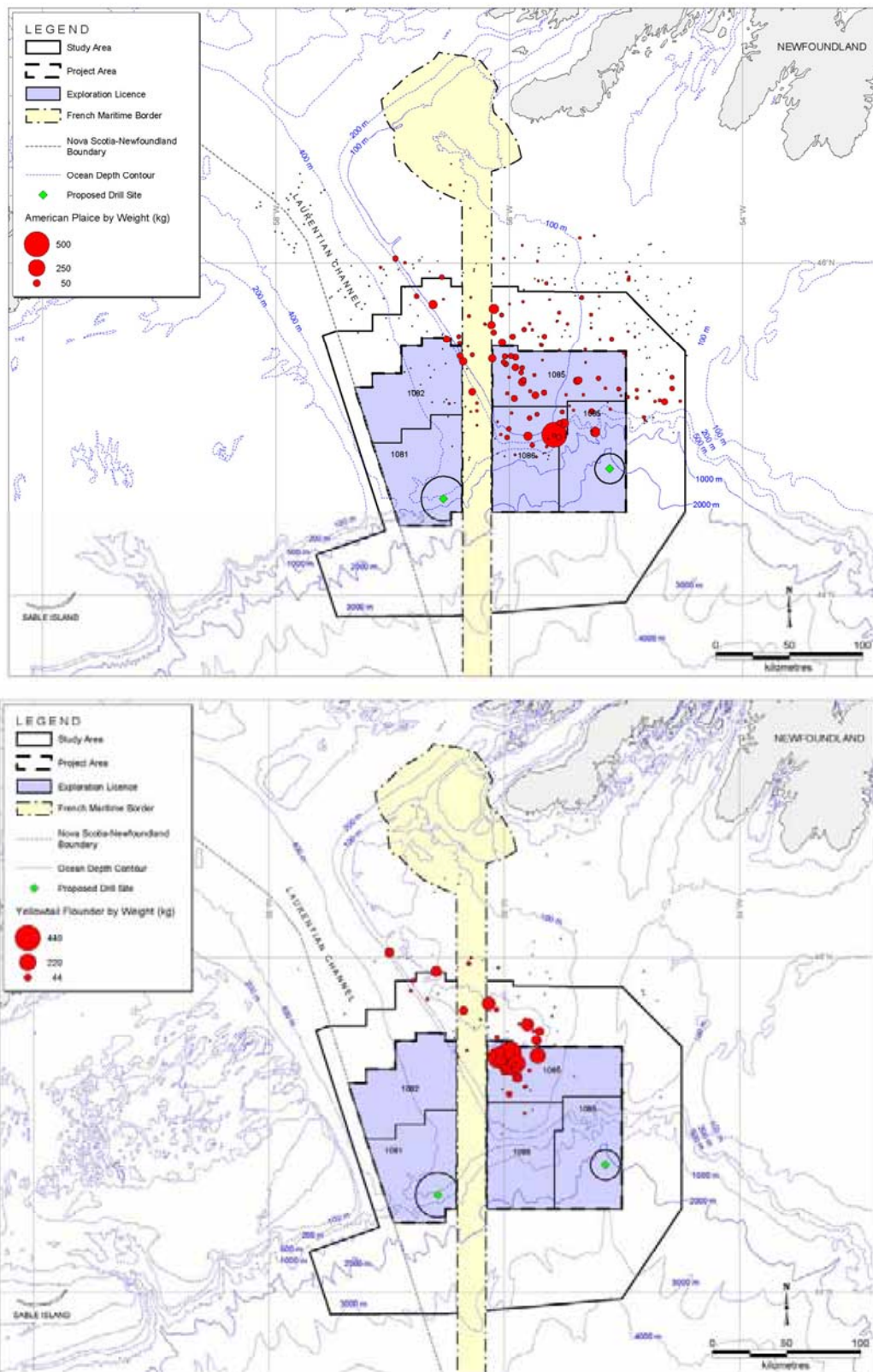


Figure 3. Distribution of RV Survey Catch Weights, 2002-2005 combined, for American Plaice (top) and Yellowtail Flounder (bottom).

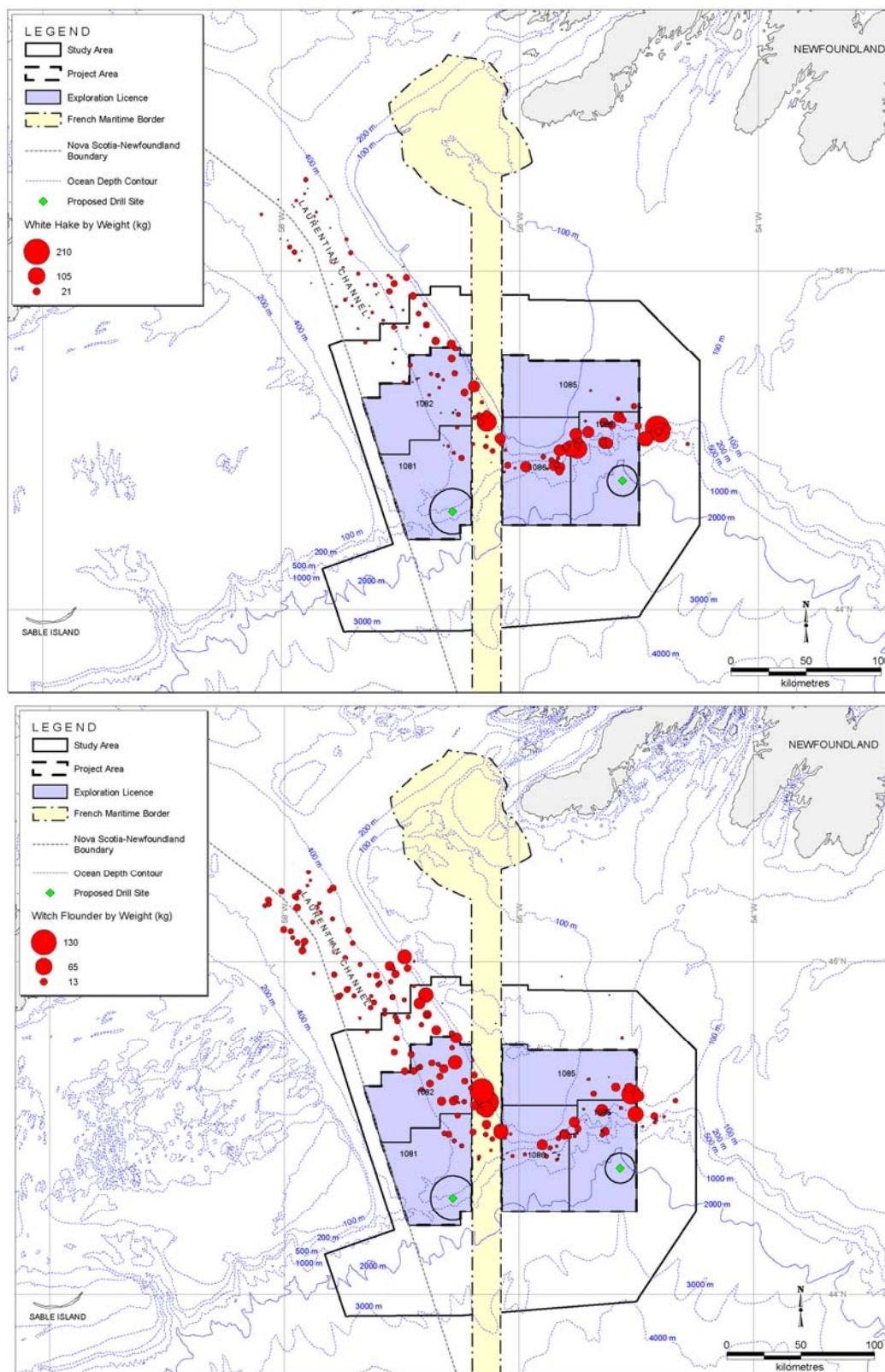


Figure 4. Distribution of RV Survey Catch Weights, 2002-2005 combined, for White Hake (top) and Witch Flounder (bottom).



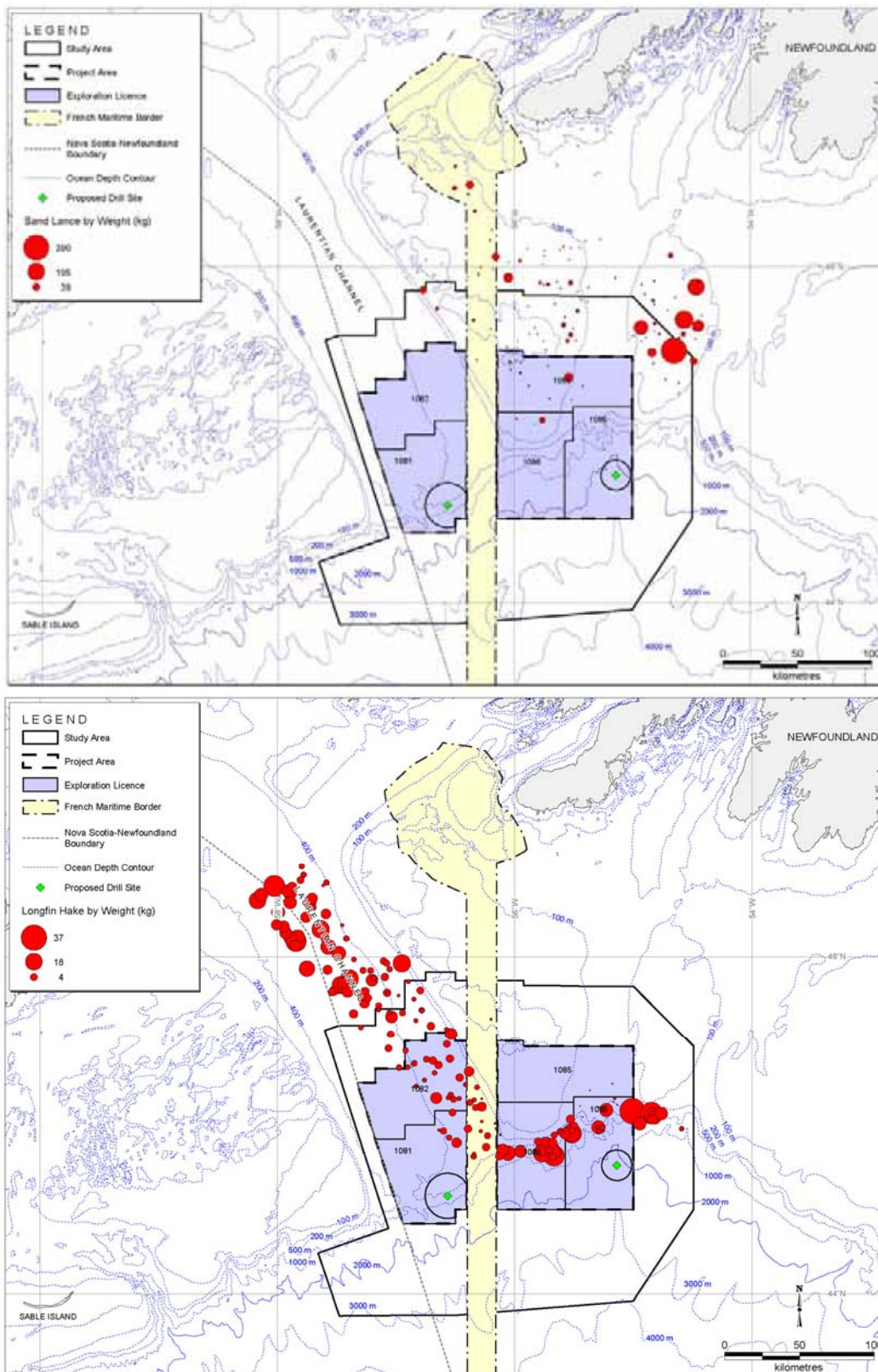


Figure 5. Distribution of RV Survey Catch Weights, 2002-2005 combined, for Sand Lance (top) and Longfin Hake (bottom).

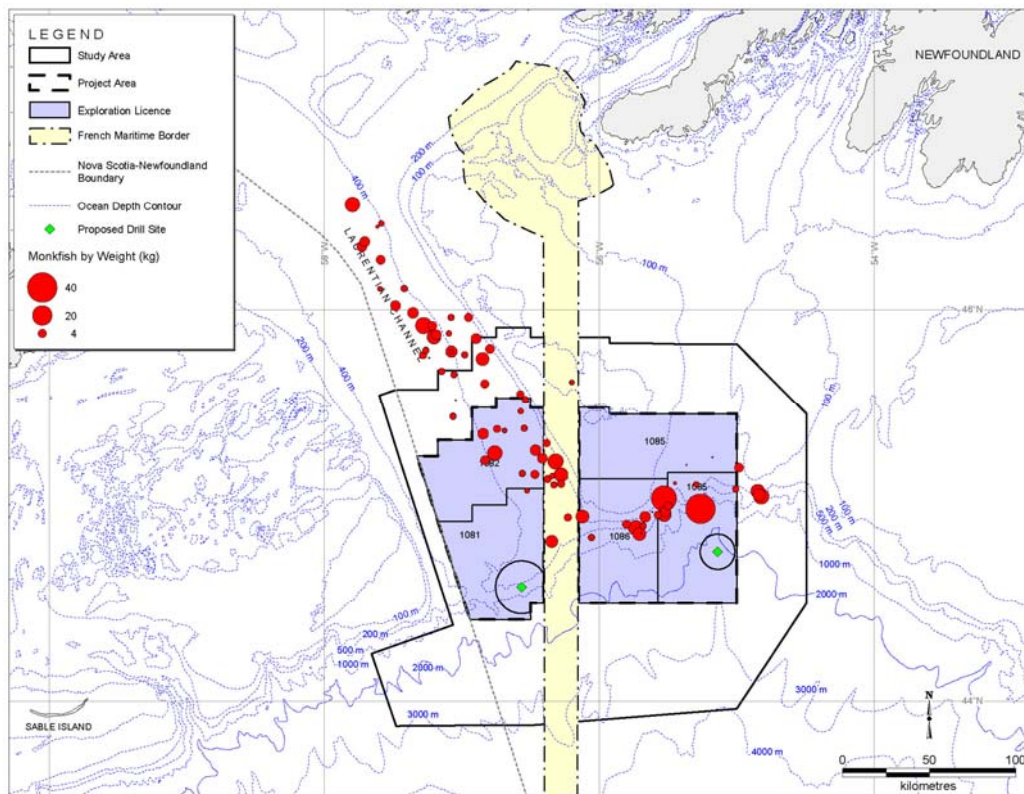
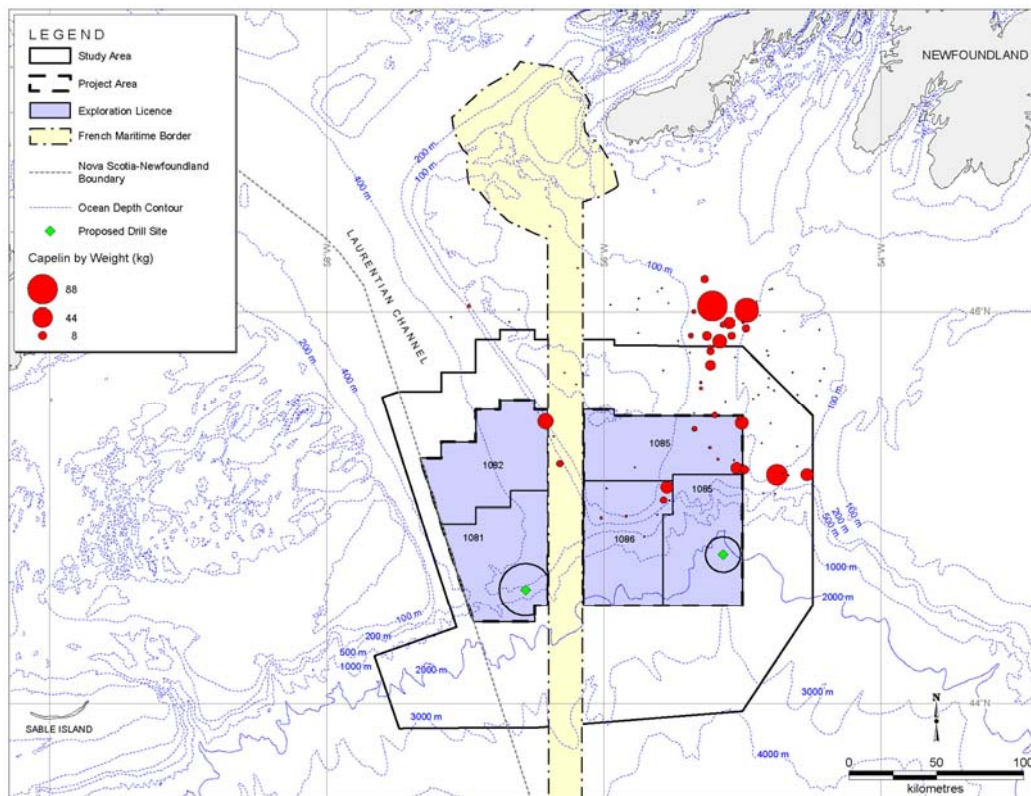


Figure 6. Distribution of RV Survey Catch Weights, 2002-2005 combined, for Capelin (top) and Monkfish (bottom).