

Northwest Atlantic



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SCIENTIFIC COUNCIL MEETING - JUNE 1993

A Compilation of Research Vessel Surveys on a Stock-by-Stock Basis

by

NAFO Secretariat

Discussions at the Scientific Council Meeting in June 1990 resulted in the compilation of information on research vessel surveys on a stock-by-stock basis (SCS Doc. 90/22, Serial No. N1820). This inventory was judged to be very helpful for the establishment of future inventories. It was agreed that the Designated Experts for the stocks be responsible for future compilations. The tabulations prepared at the June 1991 meeting were presented in SCS Doc. 91/18. In 1991, it was concluded (NAFO Sci. Coun. Rep., 1991, p. 114) that Designated Experts should update the information annually for review by STACFIS. The tabulations prepared at the June 1992 meeting were presented in SCS Doc. 92/22.

The following tabulations were presented at the June 1993 Meeting. The updated list, however, was compiled only during the course of the June 1993 Meeting, and was not available for review during the meeting. The Scientific Council in 1992 had recommended that in the future, Designated Experts present this updated information at the time of preparation of the preliminary assessments. The stocks are presented in the same sequence they were considered in the agenda.

N.B. No tabulations were available for Silver Hake in Div. 4VWX and Capelin in Div. 3L.

Stock name: Cod 2J+3KL															See reverse side for guidelines to fill in columns				
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.			
										Stock size estimates		ALK	LF	Individual weights					
										abundance	bio-mass								
Autumn ground-fish survey	2J, 3K, 3L	Oct-Dec	Since: 78-2J3K 81-3L	Stratified random bottom trawl	Groundfish Cod Flounder	505	Y	100	2J, 3K: 100-1000 m 3L: 30 - 400 ftm	Y	Y	Y	Y	Y	Canada				
Spring ground-fish survey	3L	May-June	Since 1971	Stratified random bottom trawl	Groundfish Cod Flounder	200	Y	100	31-400 ftm	Y	Y	Y	Y	Y	Canada				
Winter acoustic	2J3KL	February	Since 1987	Acoustic Bottom trawl	Cod	-	Y	?	0-1000 m	Y	Y		Y		Canada				
Summer acoustic	2J3KL	Jun-Jul	Since 1990	Acoustic Bottom trawl	Cod	-	Y	?	0-600	Y	Y		Y	Y	Canada				

Stock name: 3M Cod																
See reverse side for guidelines to fill in columns																
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.
										Stock size estimates		ALK	LF	Indiv- idual weights		
										abun- dance	bio- mass					
Russian trawl-acoustic survey	3M	April	1971	bottom trawl + acoustic (1987)	all	53	y	95	/400	y	y				Russia	
EEC bottom trawl	3M	July	1988	bottom trawl	all	117	n	100	/400	y	y	y	y		EEC	83/19

Stock name: Redfish in Subarea 1																	See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.				
										Stock size estimates		ALK	LF	Individual weights						
										abundance	bio-mass									
West Greenland Groundfish Survey	1B-1F	10-11, 1993 and 1994	since 1982	Stratified-random, Bottom trawl	Cod	100	N	50%	0-400	Y	Y	N	Y	Y	EEC-Germany	93/26				
Joint Japan/Greenland Survey off West Greenland	1A-1D	August	since 1987	"	Greenland halibut, Roundnose grenadier	96	N	?	400-1500	Y	Y	N	Y	N	JPN/GRL	93/58				
"	1C-1D	November/December	"	"	"	49	N	?	"	Y	Y	N	Y	N	"	93/58				
West Greenland Trawl Surveys	1A-1F	July/September	since 1988	"	Shrimp, Groundfish	202	N	?	0-600	Y	Y	N	Y	N	GRE	93/52				

Stock name: Redfish in Division 3M															See reverse side for guidelines to fill in columns				
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.			
										Stock size estimates		ALK	LF	Individual weights					
										abundance	bio-mass								
Flemish Cap Bottomfish Trawl Acoustic Survey	3M	April	1971-1987 (trawl) since 1988 trawl-acoustic	Stratified-random, bottom trawl	Redfish (Cod, A. plaice)	47	Y	89	200-700m	269.1 106	99.5 103	Y	Y	Y	Russia	/11			
Flemish Cap Groundfish Survey	3M	July	since 1988	Stratified-random, bottom trawl	Redfish, Cod, A. plaice, G. halibut Shrimp	117	N	100	up to 720m	no data	104.5 103	Y	Y	Y	EEC	/19 /24			

Stock name: Redfish in Divisions 3LN										See reverse side for guidelines to fill in columns						
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.
										Stock size estimates		ALK	LF	Indiv-idual weights		
										abun-dance	bio-mass					
USSR ground-fish survey	3L, 3N	Apr-Jul (mostly)	1972-82	Fixed station bottom trawl	Multi-species groundfish	50-60 per div.	Y	unknown	1972-76: to 367m 1977-82: to 732m	Y	Y	Y	Y	some-times	USSR	86/66
USSR ground-fish survey	3L, 3N	Apr-Jun (mostly)	1983-91	Stratified random bottom trawl	Multi-species groundfish	approx 120-311	Y	unknown	to 732m	Y	Y	Y	Y	"	USSR	86/66
USSR acoustic	3LN	Apr-Jun	1987-91	Acoustic	Multi-species	approx 85-3N	Y	unknown	to 732m	Y	Y	Y	Y	"	USSR	88/24
Canadian groundfish survey (covering deep-water strata)	3L	various	1978-86	Stratified-random bottom trawl	Multi-species groundfish	min. of 40 in depths > 183m	Y	unknown	to 732m	Y	Y	Y	Y	some-times	Canada	NAFO Sci. Coun. Studies 2
Canada redfish survey	3L	Jan	1990	Stratified random bottom trawl	Redfish	55	Y	unknown	183-732m	Y	Y	Y	Y	No	Canada	NAFO Sci. Coun. Studies 2
Canada ground-fish survey	3LN	Apr-May	1990-92	Stratified random bottom trawl	Multi-species groundfish	60-70 in Redfish depths	Y	unknown	to 732m	Y	Y	Y	Y	Yes	Canada	NAFO Sci. Coun. Studies 2
Canada redfish survey	3L	Aug	1990-91	Stratified random bottom trawl	Redfish	125	Y	unknown	183-732m	Y	Y	Y	Y	Yes	Canada	"
Canada ground-fish survey	3L	Oct-Dec	1990-92	Stratified random bottom trawl	Multi-species/groundfish	160-185	Y	unknown	to 732m	Y	Y	Y	Y	No	Canada	"
Canada ground-fish survey	3N	Oct-Dec	1991-92	" "	"	60-70 in Redfish depths	Y	unknown	to 732m	Y	Y	Y	Y	Yes	Canada	"

Stock name: American plaice in Division 3M															See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc No.		
										Stock size estimates		LF	Indiv- idual weights					
										abun- dance	bio- mass							
Russian Trawl- Acoustic Survey	3M	April	1977 (1987- acoustic)	Random- stratified bottom trawl & acoustic	all	52	Y	95	/400	Y	Y				Russia			
EEC Bottom Trawl Survey	3M	July	1988	Random- stratified bottom trawl	all	117	N	100	/400	Y	Y	Y	Y		EEC	93/19		
EEC Tagging Survey	3M	Feb- March	1991	Cod tagging	Cod	58	N	-	-	-	-	-	-		EEC	93/16		

Stock name: Witch flounder in 3NO													See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.
										Stock size estimates		ALK	LF	Individual weights		
										abundance	bio-mass					
Spring, ground-fish survey	3NO	April-June	since 1971	Stratified-random bottom trawl	Groundfish Cod Flounder	160	Y	100	30-400 ^a	Y	Y	Y	Y	Y	Canada	
Autumn, groundfish survey	3NO	November	since 1990	Stratified-random bottom trawl	Groundfish Cod Flounder	160	Y	100	30-400 ftm	Y	Y	Y	Y	Y	Canada	
^a Prior to 1991 the depth range covered was 30-200 ftm.																

Stock name: Yellowtail flounder in Divisions 3L, 3N and 3O																See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc No.			
										Stock size estimates		ALK	LF	Individual weights					
										abundance	bio-mass								
Canadian Groundfish (Spring)	Div. 3LNO	Spring (Apr-Jun)	1971-93	Stratified-random using bottom trawl	Groundfish	320	Y	100	Bottom depths to 731 ¹	Y	Y	Y	Y	N	Canada				
Juvenile Flatfish	Div. 3LNO	Autumn (Aug-Sep)	1985-92	Stratified-random using bottom trawl	Yellowtail flounder A. plaice	250	Y	100	Bottom depths to 273 ²	Y	Y			Y	Canada				
Russian Groundfish	Div. 3LNO	Spring (Apr-Jun)	1972-91 no survey in 1992	Fixed station up to 1982. 1983-91 Stratified-random using bottom trawl	Groundfish	229	Y	100	<57-731	Y	Y	Y	Y	Y	Russia				
Canadian Groundfish (Fall)	Div. 3LNO	Autumn (Oct-Nov)	1981-92 (3L) 1990-92 (3NO)	Stratified-random using bottom trawl	Groundfish	220	Y	100	Bottom depths to 731 ¹	Y	Y	Y	Y	Y	Canada				
1 Depth range extended from 366 m to 731 m in 1990. 2 Depth range gradually extended to 273 m since start of surveys.																			

Stock name: Greenland halibut Subareas 0+1															See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.		
										Stock size estimates		LF	Indiv- idual weights					
										abun- dance	bio- mass							
Joint Japan/ Greenland Survey off West Green- land	1A-1D	August	1987- 1992	Stratified- random bottom trawl	Greenland halibut Roundnose grenadier	90	N	?	400-1500	Y	Y	N	Y	JPN/GRL	88/35; 93/58			
"	1C-1D	November December	"	"	"	49	N	?	400-1500	Y	Y	N	Y	"	"			
Russian trawl surveys	OB	November	1981- 1992	"	"	26	Y	?	500-1500	Y	Y	Y	Y	Russia	93/12			
West Green- land trawl surveys	1A-1F	July/ Septem- ber	1988- 1992	"	Shrimps, Cod, Red- fish, Greenland halibut	206	N	?	0-600	Y	Y	N	Y	GRL	93/52			
Norwegian Longline Survey	1D-1E	May/June	1989 & 1992	Longline	Greenland halibut, Roughhead Grenadier, Cusk	52	Y	?	300-2200	N	N	Y	Y	Norway	93/53			

Stock name: Greenland halibut in Subarea 2+3																See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.			
										Stock size estimates		ALK	LF	Individual weights					
										abundance	bio-mass								
Autumn ground-fish survey	2J, 3K, 3L	Oct-Dec	since: 78-2J3K 81-3L	Stratified-random bottom trawl	Groundfish Cod Flounder	505	Y	100	2J, 3K: 100-1000 m 3L: 30 - 400 ftm	Y	Y	Y	Y	Y	Canada				
Spring ground-fish survey	3L	May-June	since 1971	Stratified-random bottom trawl	Groundfish Cod Flounder	200	Y	100	3L-400 ftm	Y	Y	Y	Y	Y	Canada				
Russian trawl survey	2GH	Nov	1992	Stratified-random bottom trawl	Greenland halibut	26	Y	?	0-1500	Y	Y	?	?	?	Russia				
EEC bottom trawl survey	3M	July	1988	Stratified-random bottom trawl	all	117	N	100	0-732	Y	Y	Y	Y	Y	EEC	93/19			

Stock name: Roundnose grenadier Subareas 0+1															
See reverse side for guidelines to fill in columns															
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock				Country	SCR Doc. No.
										Stock size estimates		LF	Indiv- idual weights		
										abun- dance	bio- mass				
Joint Japan/ Greenland Survey off West Green- land	1A-LD	August	since 1987	Stratified- random bottom trawl	Greenland halibut Roundnose grenadier	90	N	?	400-1500	Y	Y	N	Y	JPN/GRL	93/58
"	1C-LD	November/ December	"	"	"	49	N	?	"	Y	Y	N	Y	"	"
Russian Trawl Surveys	OB	November	since 1981	"	"	26	Y	?	500-1500	Y	Y	Y	Y	Russia	93/12

Stock name: Roundnose grenadier in Subarea 2+3											See reverse side for guidelines to fill in columns					
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock				Country	SCR Doc. No.	
										Stock size estimates		ALK	LF			Individual weights
										abundance	bio-mass					
Canadian Autumn Groundfish	2U3KL	Oct-Nov.	1978	OTB-Engel High Rise.	Multi-groundfish	400-500	Y	UK	200-1 000 m	Y	Y	N	Y	N	Canada	

Stock name: Capelin in Division 3NO										See reverse side for guidelines to fill in columns						
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.
										Stock size estimates		LF	Indiv- idual weights			
										abun- dance	bio- mass					
Canadian Acoustic Survey	Div. 3NO	June- July	1981-89, 1992	Acoustic Survey Midwater Trawl	Capelin		Y	80	0-80	Y	Y	Y	Y	Y	Canada	93/21

[illegible]

Stock name: Shrimp in Subareas 0+1																	See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.				
										Stock size estimates		ALK	LF	Indiv- idual weights						
										abun- dance	bio- mass									
West Green- land Shrimp Survey	0A 1A,B,C,D E,F	Jul-Oct	since 1988 (LF only in 1992)	Stratified- random bottom trawl	<i>Pandalus borealis</i>	213	N	95	0-600	Y	Y	N	Y	Y	Greenland	93/70 93/72				
					Redfish	213	N	?	0-600	Y	Y	N	Y	N	Greenland	93/52				
					G. halibut	213	N	?	0-600	Y	Y	N	Y	N	Greenland	93/52				
					Other groundfish	213	N	?	0-600	Y	Y	N	N	N	Greenland					
Shrimp trawl Selection Studies	1B,C,D	July	since 1991	Bottom trawl	<i>Pandalus borealis</i>	57	Y		150-600	N	N	N	Y	N	Greenland					

Stock name: Shrimp - Denmark Strait																	See reverse side for guidelines to fill in columns		
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock						Country	SCR Doc. No.		
										Stock size estimates		ALK	LF	Indiv-idual weights					
										abundance	bio-mass								
East Greenland shrimp survey	Denmark Strait	Oct	89,90 92	Stratified random, bottom trawl	Pandalus borealis	59	N	60	150-600 m	Y	Y	N	Y	N	Greenland	93/66			

Stock name: Wolffish in Subarea I / Other finfish																
See reverse side for guidelines to fill in columns																
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.
										Stock size estimates		ALK	LF	Individual weights		
										abundance	bio-mass					
Joint Japan/Greenland Survey off West Greenland	1A-1D	August	1987	Stratified-random bottom trawl	Greenland halibut Roundnose grenadier	92	N	?	400-1500	Y	Y	Y	N	Y	N	93/58
"	1C-1D	November/December	"	"	"	49	N	?	"	Y	Y	Y	N	Y	N	93/58
West Greenland trawl surveys	1A-1F	July/September	1988	"	Shrimps, Groundfish	206	N	?	0-600	Y	Y	Y	N	N	N	93/52
Norwegian Longline Survey	1D+1E	May/June	1989 & 1992	Longline	Greenland halibut Roughhead grenadier Cusk	52	Y	?	300-2200	N	N	N	N	Y	N	93/53
West Greenland Groundfish Survey	1B-1F	10, 11 1993, 1994	since 1982	Stratified-random, Bottom trawl	Cod	100	N	?	0-400	Y	Y	Y	N	Y	Y	EEC-Germany 93/26

Stock name: Groundfish, cod, redfish, other finfish, Division 1B-LF																See reverse side for guidelines to fill in columns			
Name of Survey	Location	Season month(s)	Years of survey from, to or since	Type of survey and gears	Target species	No. of sets	24 hr fishing	Area of coverage in relation to stock distribution (%)	Depth range	Research data related to stock					Country	SCR Doc. No.			
										Stock size estimates		Indiv- idual weights	LF	ALK					
										abun- dance	bio- mass								
West Greenland Groundfish survey	1B-LF	10,11 1993 and 1994	Since 1982	Bottom trawl, Stratified random	1. Cod 2. Redfish 3. Other finfish	90 " "	No " "	95% 50% 70%	0-400 0-400 0-400	Y Y Y	Y Y Y	Y Y Y	Y Y Y	G-FRG Germany	93/26 SCS 93/3 93/26				

See reverse side for guidelines to fill in columns