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SCIENTIFIC COUNCIL MEETING - JUNE 1997

A Compilation of Research Vessel Survey 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 1992, 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, June 1993, June 1994, June 1995 and June 1996 Meetings were presented in SCS Doc. 92/22, 93/18, 94/18, 95/17 and 96/15, respectively.

The following tabulations were completed at the June 1997 Meeting of the Scientific Council. The compilation of this tabulation was achieved by the coordination and communications of STACREC Chairman, D. Power (Canada) with the Designated Experts, including with those Designated Experts who were not present at this meeting (i.e. Designated Experts for northern shrimp assessments).

INVENTORY OF SURVEYS IN NAFO AREA

Stock name: Cod Divisions 2J+3KL

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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Groundfish	2J3K	Oct, Nov, Dec	1977-96	Stratified-random Bottom trawl	Groundfish	400	Y	100	100-1000 m	Y	Y	Y	Y	Y	Canada	97/59
Groundfish	3L	May-Jun	1971-97	Stratified-random Bottom trawl	Groundfish	160	Y		30-800 fm	Y	Y	Y	Y	Y	Canada	97/59
Acoustics	3KL	Apr	1996	Acoustic	Cod		Y			N	Y	Y	Y	N	Canada	97/49
Juvenile flatfish	3L	Aug, Sep	1989-94	Stratified-random Bottom trawl	Groundfish		Y		30-150 fm	Y	Y	Y	N	N	Canada	95/59
Juvenile cod	3L	Oct, Nov		Line	Cod		Y			N	N	Y	Y	N	Canada	
Groundfish	3L	Oct, Nov	1981-97	Stratified-random Bottom trawl	Groundfish	160	Y		30-400 fm	Y	Y	Y	Y	Y	Canada	97/59
Juvenile cod	2J3KL	Aug, Sep	1992-96	Fixed station	0-group cod	100-150	Y	70	30-400 fm	Y	N	Y	Y	N	Canada	97/41

Stock name: Cod - Division 3M

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				Indiv- idual weights	Country	SCR Doc. No.
										abund-	bio-	Stock size	ALK			
EU- bottom trawl survey	3M	Jul	1988 →	Stratified random bottom trawl	all	117	No	100%	127-730m	Y	Y	Y	Y	Y	EU	97/28
Russian trawl survey	3M	May	1983 → (1994 missing)	Stratified random bottom trawl (and acoustic survey 1987-1993)	all	58	Yes	100%	127-730m	Y	Y	Y	Y	N	Russia	97/7
Canadian groundfish	3M	Sep/Oct	1996	Stratified random bottom trawl	all	68	Yes	100%	127-730m	Y	Y	N	N	N	CAN/N	97/42

Stock name: Cod, Divisions 3+0																
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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Groundfish	3NO	Apr, May	1972-96	Stratified-random Bottom trawl	Groundfish	160	Y	100	30-400 ftn	Y	Y	Y	Y	Y	Canada	97/70
Juvenile flatfish	3NO	Sep	1989-94	Stratified-random Bottom trawl	Groundfish		Y	100	30-150	Y	Y	Y	Y	Y	Canada	96/80
Groundfish	3NO	Oct, Nov	1990-96	Stratified-random Bottom trawl	Groundfish	160	Y	100	30-400 ftn	Y	Y	Y	Y	Y	Canada	97/70
EU-Spain	3NO Reg. Area	May	1995-97	Stratified-random & Lofoten	Groundfish	112	N	20	1-100 m	Y	Y	N	Y	N	Spain	97/25

Stock name: Redfish - Subarea 1

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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
West Greenland groundfish survey	1B - 1F	Oct-Nov	since 1982	Stratified random bottom trawl	Cod, redfish, other finfish	55	N	80	0-400m	Y	Y	N	Y	N	E/DEU	97/5
Greenland - Japan groundfish survey	1A - 1D	Aug	1987-95	Stratified random bottom trawl	Greenland halibut, Roundnose grenadier	91	N	80	600-1500m	Y	Y	N	Y	N	GRL JPN	96/29
Greenland shrimp survey	1A - 1F	Jul-Aug	since 1992	Stratified random bottom trawl	Shrimp	194	N	80	0-600m	Y	Y	N	Y	N	GRL	97/39

Stock name: Redfish - Division 3M

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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
EU bottom trawl survey	3M	Jul	1988	Stratified random bottom trawl	All	117	N	Unknown	127-731m	Y	Y	Y	Y	Y	EU (Spain and Portugal)	97/28
Russian bottom trawl survey	3M	May	1983-→ (1994 missing)	Stratified random bottom trawl and acoustic survey 1987-93	All	76	Y	Unknown	127-914m	Y	Y	N	N	N	Russia	97/8.9
Canadian groundfish survey	3M	Sep/Oct	1996	Stratified random bottom trawl	All	68	Y	Unknown	127-731m	Y	Y	Y	Y	Y	Canada	97/4.2
		Nov/Dec 1996	1996			18	Y	Unknown	731-1463 m							

Stock name: Redfish in Divisions 3LN

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				Indiv-idual weights	Country	SCR Doc. No.		
										abun-dance	bio-mass	ALK	LF					
USSR groundfish 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 732 m	Y	Y	Y	Y	Y	Y	Some-times	USSR	86/66
USSR ground-fish survey	3L, 3N	Apr-Jun (mostly)	1983-91, 1993, 1994	Stratified-random Bottom trawl	Multi-species Groundfish	approx. 48-3L	Y	Unknown	to 732 m	Y	Y	Y	Y	Y	Y	Some-times	USSR	86/66
USSR acoustic	3LN	Apr-Jun	1987-91, 1993	Acoustic	Multi-species	Unknown midwater sampl.	Y	Unknown	to 732 m	Y	Y	Y	Y	Y	Y	Some-times	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 732 m	Y	Y	Y	Y	Y	Y	Some-times	Canada	NAFO Studies No. 2
Canada redfish survey	3L	Jan	1990	Stratified-random Bottom trawl	Redfish	55	Y	Unknown	183-732 m	Y	Y	Y	Y	Y	Y	No	Canada	NAFO Studies No. 2
Canada ground-fish survey	1 3LN	Apr-Jun	1990-93	Stratified-random Bottom trawl	Multi-species Groundfish	90 in redfish depths	Y	Unknown	to 732 m	Y	Y	Y	Y	Y	Y	Yes	Canada	NAFO Studies No. 2
Canada redfish survey	3L, 3N (since 1990)	Aug	1990-91, 1993	Stratified-random Bottom trawl	Redfish	59-3L 47-3N	Y	Unknown	183-732 m	Y	Y	Y	Y	Y	Y	Yes	Canada	NAFO Studies No. 2
Canada ground-fish survey	3L	Oct-Dec + Apr-May	1990-97	Stratified-random Bottom trawl	Multi-species Groundfish	128 in redfish depths	Y	Unknown	to 732 m	Y	Y	Y	Y	Y	Y	No	Canada	NAFO Studies No. 2
Canada ground-fish survey	3N	Oct-Dec + Apr-May	1991-97	Stratified-random Bottom trawl	Multi-species Groundfish	30 in redfish depths	Y	Unknown	to 732 m	Y	Y	Y	Y	Y	Y	Yes	Canada	NAFO Studies No. 2

Stock name: Silver hake - Divisions 4WX

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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Summer groundfish survey	4WX	Summer (Jul)	1970-1996	Western 1/2 trawl - random stratified design	cod, haddock, pollock	200	Y	100	50-200fm	Y	Y	Y	Y	Y	Canada	
Silver hake 0-group survey	4WX	Autumn (Oct)	1981-1996 (excl. 1992)	YGPT random stratified design; 3 step oblique	silver hake	80	N	80	50-200fm	Y	N	N	Y	N	Canada	

Name of survey	Location	Season months(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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Canadian spring	3LN0	Apr-Jun	1975-96	Oter trawl - Campelen	Groundfish	356	Y	95	to 730 m	Y	Y	Y	Y	Y	Canada	Studies No. 2
Canadian autumn	"	Sep-Dec	1990-96	Campelen	Groundfish Shellfish	353	Y	95	to 1 500 m	Y	Y	Y	Y	Y	"	"
EU Spain	3NO Reg. Area	Apr-May	1995-97	Lototen	Groundfish	128	N	10	to 1 280 m	Y	Y	N	Y	N	Spain	95/55

Stock name: American plaice - Division 3M																
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				Indiv- idual weights	Country	SCR Doc. No.
										abund-	bio-	ALK	LF			
EU - bottom trawl survey	3M	Jul	1988 →	Stratified random bottom trawl	all	117	N	100	127-731 m	Y	Y	Y	Y	Y	EU	97/28
Canada bottom trawl	3M	Sep-Oct, <731 m Nov, >731 m	1996	Stratified random with Campelen	Groundfish & shrimp	86	Y	100 for most species	127-1400 m	Y	Y	Y	Y	Y	Canada	97/42

Stock name: Vich flounder in Divisions 3NO																
Name of survey	Location	Season months(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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Spring, groundfish survey	3NO	Apr-Jun	since 1971	Stratified-random Bottom trawl	Groundfish Cod Flounder		Y	100	30-400 ^a ftm	Y	Y	Y ^b	Y	Y	Canada	94/63
Autumn, groundfish survey	3NO	Nov	since 1990	Stratified-random Bottom trawl	Groundfish Cod Flounder		Y	100	30-400 ftm.	Y	Y	Y ^b	Y	Y	Canada	
EU-Spain	Reg. Area 3NO	May	1995-96	Stratified-random Bottom trawl	All	77	N	100	30-400 ftm.	Y	Y	N	Y	N	EU-Spain	95/55

^a Prior to 1991 the depth range covered was 30-200 ftm.
^b No ages read since 1993.

Stock name: Yellowtail flounder - Divisions 3L, 3N and 3O																
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 distribu- tion (%)	Depth range	Research data related to stock				Indiv- idual weights	Country	SCR Doc. No.
										abund- dance	bio- mass	ALK	LF			
Canadian Groundfish (Spring)	DIV. 3LN0	Spring (Apr-Jun)	1971-96	Stratified random - bottom trawl	Groundfish	356	Y	100	51 to 941 m	Y	Y	Y	Y	Y	Canada	97172
Canadian Groundfish (Autumn)	DIV. 3LN0	Autumn (Oct-Nov)	1990-96	Stratified- random - bottom trawl	Groundfish	353	Y	100	51 to 1 437 m	Y	Y	Y	Y	Y	Canada	97172
Spanish Groundfish (Spring)	DIV. 3NO Regulatory Area	Spring (Apr- May)	1995-97	Stratified- random - bottom trawl	Groundfish	106	N	unknown	45 to 1 280 m	Y	Y	N	N	N	Spain	97125
Canadian DFO/Industry	DIV. 3NO	Summer 1996 (Jun) Winter 1997 Spring 1997	1996-97	Grid survey with fixed stations	Yellowtail	81	Y	80	45-90 m	N	N	N	Y	N	Canada	97131

Stock name: Greenland halibut - Subarea 0 + Divisions 18-F

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				Individual weights	Country	SCR Doc. No
										abundance	bio-mass	ALK	LF			
Greenland	1A-1F	Jul-Sep	1988-1996	Stratified random bottom trawl	Shrimp Groundfish	199	N	?	0-600m	Y	Y	Y	Y	GRL	97/39	

Stock name: Greenland halibut - Division 1A																
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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Inshore longline survey	Disko Bay Uummannaq Upernavik (2 a year)	Jul- Aug	since 1993	Fixed station longlines	Greenland halibut	30 in each location (60 a year)	Yes	?	200-900m	N	N	Y	Y	Y	Greenland	97/73

Stock name: Greenland halibut in Subareas 2+3

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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Canadian autumn groundfish survey	2J,3K,3L	Oct-Dec	78-96 2J3K 81-96 3L	Stratified-random Engel trawl 1978-94 2J3K Yankee trawl 1981-82 3L Engel trawl 1984-94 3L Campelen Trawl all areas 1995-96	Groundfish (Cod, flounders, G. halibut, redfish)	About 500 in 1996	Y	This column not appropriate for this species given differences in depth coverage and areas covered in the surveys.	2J3K in 1996 111-1410 m 3L in 1996 51-1433 m	Y	Y	Y	Y	Y	Canada	97/52
Canadian spring groundfish survey	3LNO	Apr-Jun	1971-96	Yankee 71-82 Engel 84-95 Campelen 96- All surveys stratified random	Groundfish	About 350 in 1996	Y		to 731 m recently	Y	Y	Y	Y	Y	Canada	
EU bottom trawl survey	3M	Jul	1988-96	Stratified-random Bottom trawl	Groundfish & shrimp	117	N		to 731 m	Y	Y	Y	Y	Y	Spain	97/28
EU-Spain bottom trawl survey	Reg. Area 3NO	Apr-May	1995-97	Stratified-random Bottom trawl	Groundfish	128	N		about 1300 m	Y	Y	N	Y	N	Japan	97/25
Japan groundfish	ZGH	August	1st survey	Stratified-random Bottom trawl	Groundfish	134	Y		1500 m	Y	Y	Y	Y	Y	Canada	97/23
Canadian groundfish	ZGH	Sep-Oct	occasion at since 1978	Stratified-random Campelen	Groundfish	117	Y		1500 m	Y	Y	Y	Y	Y	Canada	97/30
Canadian groundfish	3MNO	Sep-Dec	3NO 1990-96 3M - 1st Year	Stratified-random Campelen	Groundfish	86 3M 82 3N 61 3O	Y		1400 m 3M- 1147 m 3N 690 m 3O	Y	Y	Y	Y	Y	Canada	97/52
Russian	2M 2LN Fl. Pass	May Feb	1995-96 1995-96	Stratified-random Bottom trawl Stratified-random Bottom trawl	Groundfish Groundfish	Y Y	Y		731 m 914 m	Y	Y	Y	Y	N	Russia	

Stock name: Roundnose grenadier - Subareas 0+1

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				Individual weights	Country	SCR Doc. No.
										Stock size estimates						
										abundance	bio-mass	ALK	LF			
Joint Japan Greenland	1A - 1D	Aug	1987-1995	Stratified random bottom trawl	Greenland halibut, Roundnose grenadier	91	N	?	400-1500m	N	Y	N	Y	N	Japan/GRL	96/29

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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Canadian Deep-water	SA2-3KLM	Aug/Sep	1991	OTB - Engel	Mixed	228	Y	?	750-1500m	Y	Y	N	Y	N	Canada	
Canadian Deep-water	3KLMN	Feb	1994	OTB - Engel	Mixed	133	Y	?	750-1500m	Y	Y	N only	Y	N	Canada	
Canadian Deep-water	3KLMN	Apr	1995	OTB - Engel	Mixed	100+	Y	?	500-1500m	Y	Y	N	Y	N	Canada	
Canadian groundfish	2GHJ-3KLMNO	Sep-Dec	1996	OTB-Campelen	Mixed	100+ (in depths >400 m)	Y	?	30-1500m	Y	Y	N	Y	N	Canada	
Japan bottom trawl survey	2GH	Aug	1996	Bottom trawl	Mixed	151	Y	?	201-1500m	N	Y	N	Y	N	Japan	

Stock name: Other Finnish - Subarea 1																
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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
West Greenland groundfish survey	1B - 1F	Oct-Nov	since 1982	Stratified random bottom trawl	Cod, redfish, Other finfish	55	N	80	0-400m	Y	Y	N	Y	N	E/DEU	97/5
Greenland/ Japan Groundfish survey	1A - 1D	Aug	1987-95	"	Greenland halibut, Roundnose grenadier	91	N	80	400-1500m	Y	Y	N	Y	N	GRL/ JPN	96/29
Greenland shrimp survey	1A - 1F	Jul-Aug	since 1992	"	Shrimp	194	N	80	0-600m	Y	Y	N	Y	N	GRL	97/39

Stock name: Shrimp - Division 3M

Name of survey	Location	Season months(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				Indiv-idual weights	Country	SCR Doc. No.
										abund-ance	bio-mass	ALK	LF			
EU-bottom trawl survey	3M	Jul	1988	Stratified-random bottom trawl	all	???	N	100	80-730m	Y	Y	N	Y	Y	EU	96/94 96/98

Stock name: Shrimp - Subarea 0-1

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				Individual weights	Country	SCR Doc. No.
										abundance	bio-mass	ALK	LF			
Greenland bottom - trawl survey	1A offshore Disko Bay Inshore	Jul-Sep	since 1988	Stratified-random survey	Northern shrimp groundfish	172	N	95	150-600m	Y	Y	N	Y	Y	Greenland	95/111 95/113