

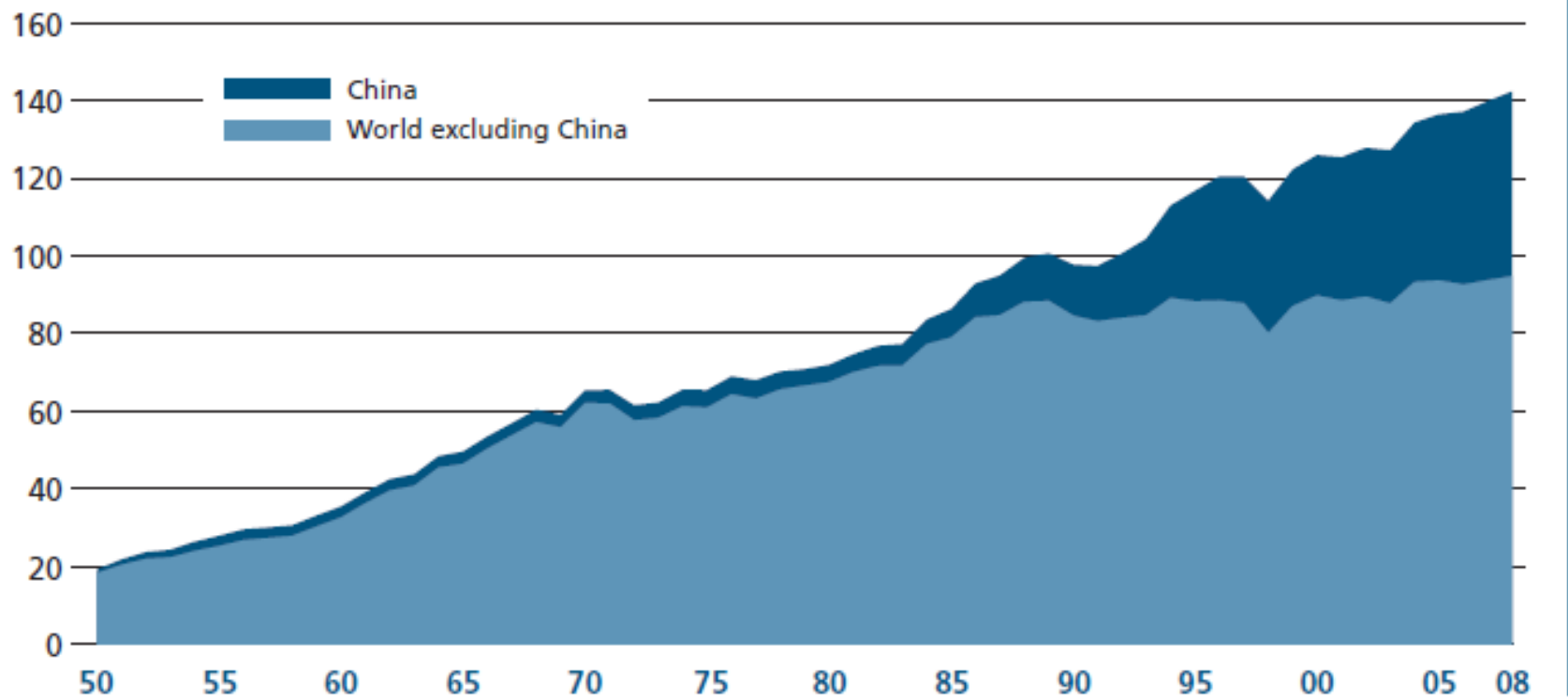
World fisheries and aquaculture production and utilization

	2004	2005	2006	2007	2008	2009
	<i>(Million tonnes)</i>					
PRODUCTION						
INLAND						
Capture	8.6	9.4	9.8	10.0	10.2	10.1
Aquaculture	25.2	26.8	28.7	30.7	32.9	35.0
Total inland	33.8	36.2	38.5	40.6	43.1	45.1
MARINE						
Capture	83.8	82.7	80.0	79.9	79.5	79.9
Aquaculture	16.7	17.5	18.6	19.2	19.7	20.1
Total marine	100.5	100.1	98.6	99.2	99.2	100.0
TOTAL CAPTURE	92.4	92.1	89.7	89.9	89.7	90.0
TOTAL AQUACULTURE	41.9	44.3	47.4	49.9	52.5	55.1
TOTAL WORLD FISHERIES	134.3	136.4	137.1	139.8	142.3	145.1
UTILIZATION						
Human consumption	104.4	107.3	110.7	112.7	115.1	117.8
Non-food uses	29.8	29.1	26.3	27.1	27.2	27.3
Population (<i>billions</i>)	6.4	6.5	6.6	6.7	6.8	6.8
Per capita food fish supply (<i>kg</i>)	16.2	16.5	16.8	16.9	17.1	17.2

Note: Excluding aquatic plants. Data for 2009 are provisional estimates.

World capture fisheries and aquaculture production

Million tonnes

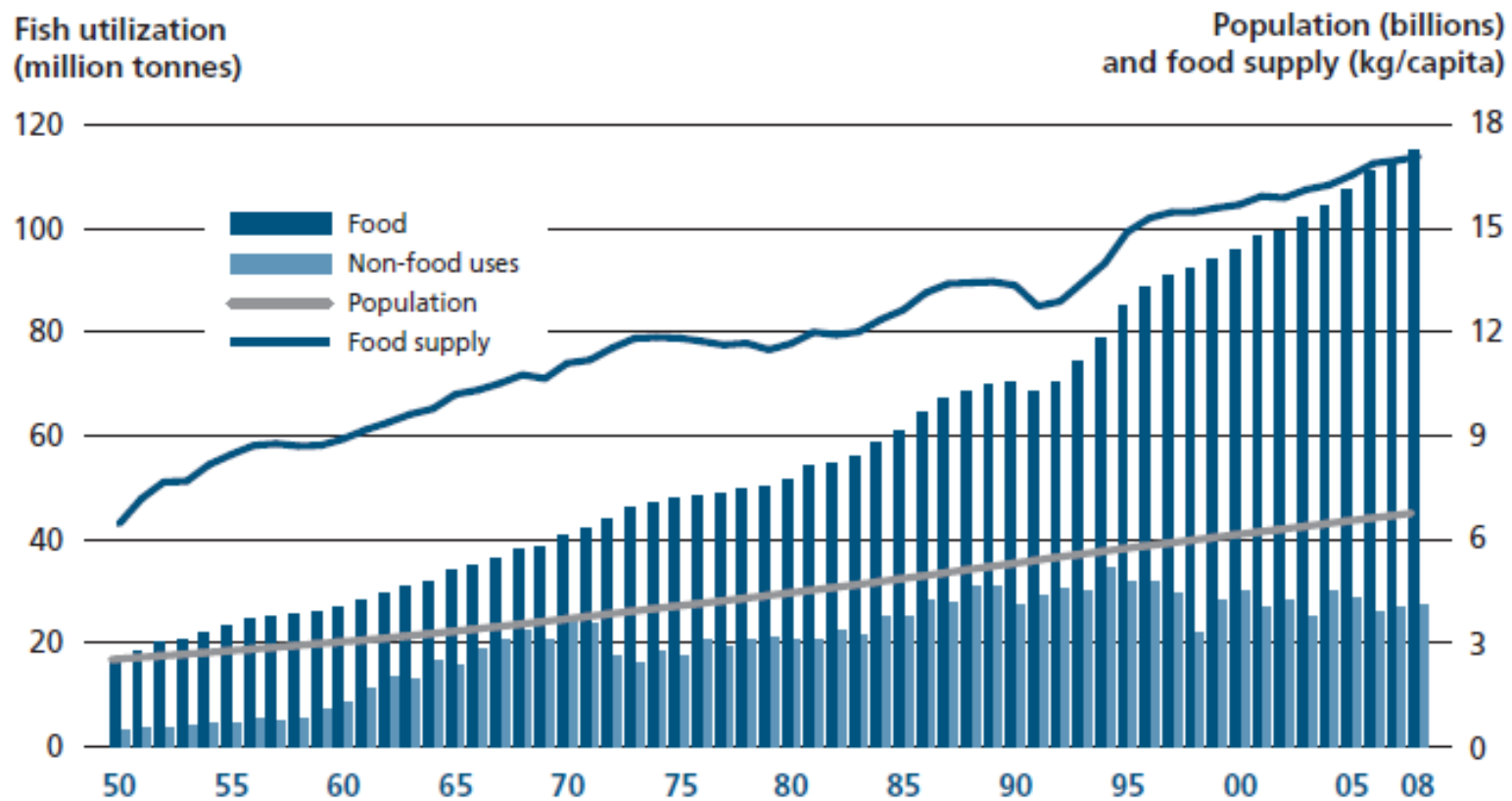


World fisheries and aquaculture production and utilization, excluding China

	2004	2005	2006	2007	2008	2009
	<i>(Million tonnes)</i>					
PRODUCTION						
INLAND						
Capture	6.5	7.2	7.6	7.7	8.0	7.9
Aquaculture	8.9	9.5	10.2	11.0	12.2	12.9
Total inland	15.4	16.7	17.7	18.7	20.1	20.8
MARINE						
Capture	71.4	70.3	67.5	67.5	67.0	67.2
Aquaculture	6.5	6.7	7.3	7.5	7.6	8.1
Total marine	77.9	77.0	74.8	75.0	74.6	75.3
TOTAL CAPTURE	77.9	77.5	75.1	75.2	74.9	75.1
TOTAL AQUACULTURE	15.3	16.2	17.5	18.5	19.8	21.0
TOTAL FISHERIES PRODUCTION	93.2	93.7	92.6	93.7	94.8	96.1
UTILIZATION						
Human consumption	68.8	70.4	72.4	73.5	74.3	75.5
Non-food uses	24.5	23.2	20.2	20.2	20.5	20.5
Population (<i>billions</i>)	5.2	5.2	5.3	5.4	5.4	5.5
Per capita food fish supply (<i>kg</i>)	13.4	13.5	13.7	13.7	13.7	13.7

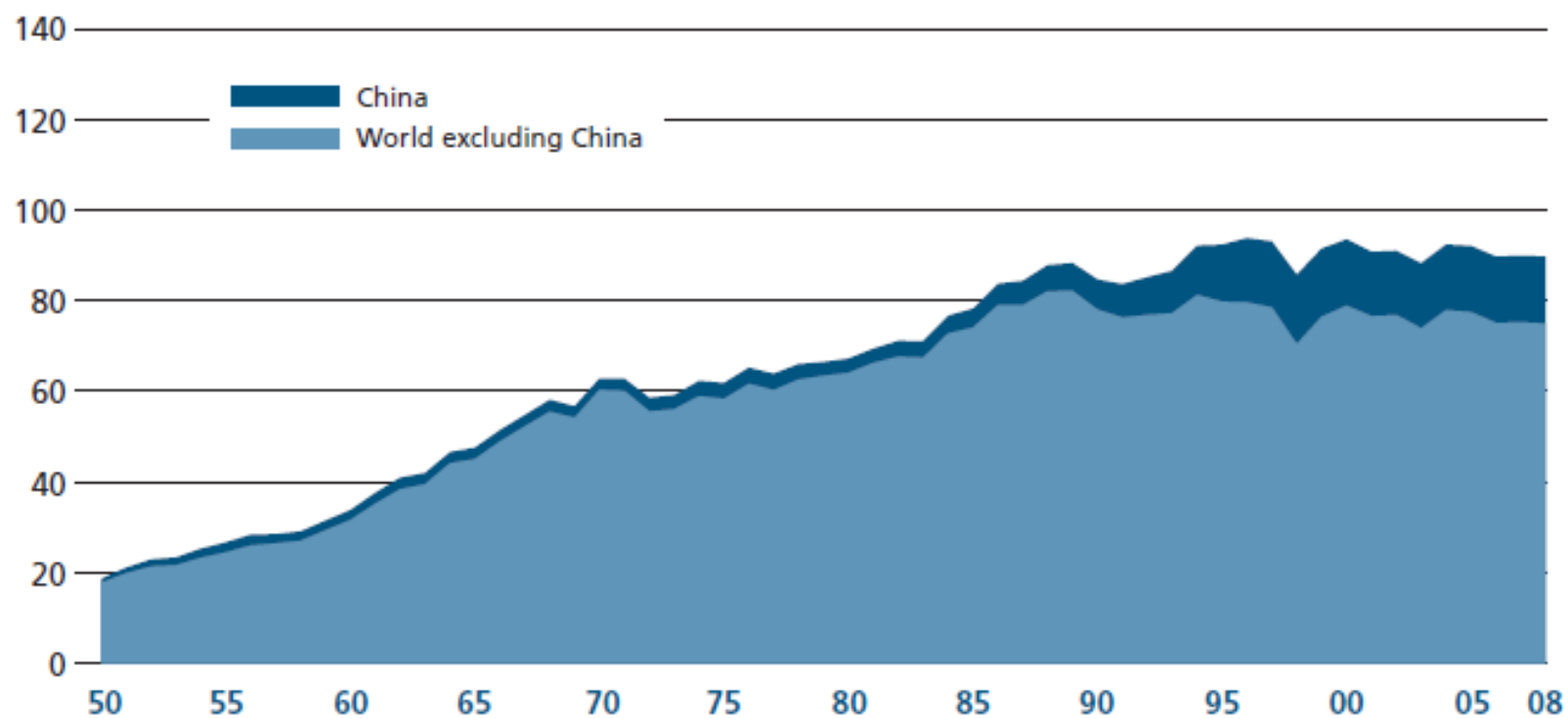
Note: Excluding aquatic plants. Data for 2009 are provisional estimates.

World fish utilization and supply

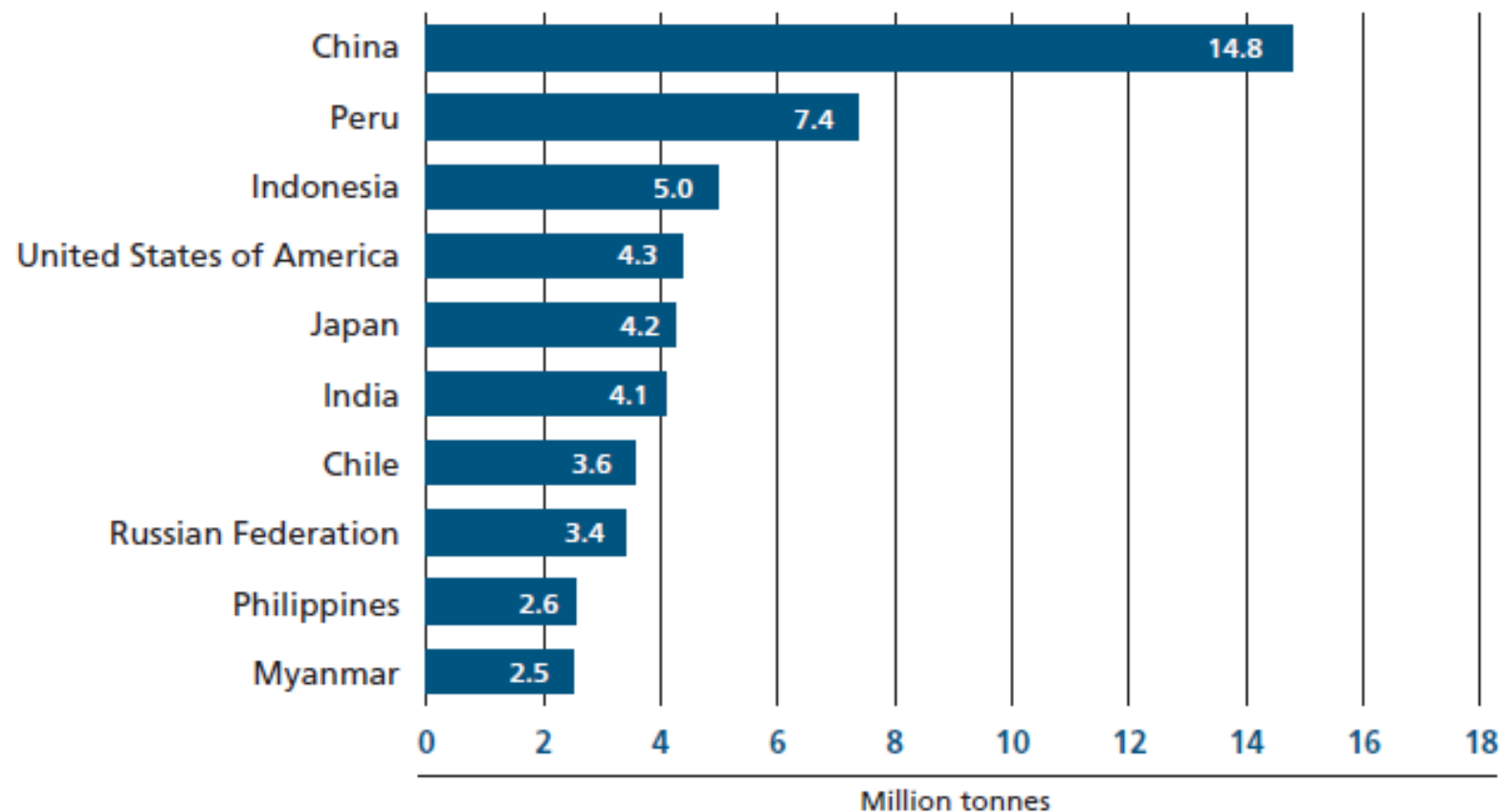


World capture fisheries production

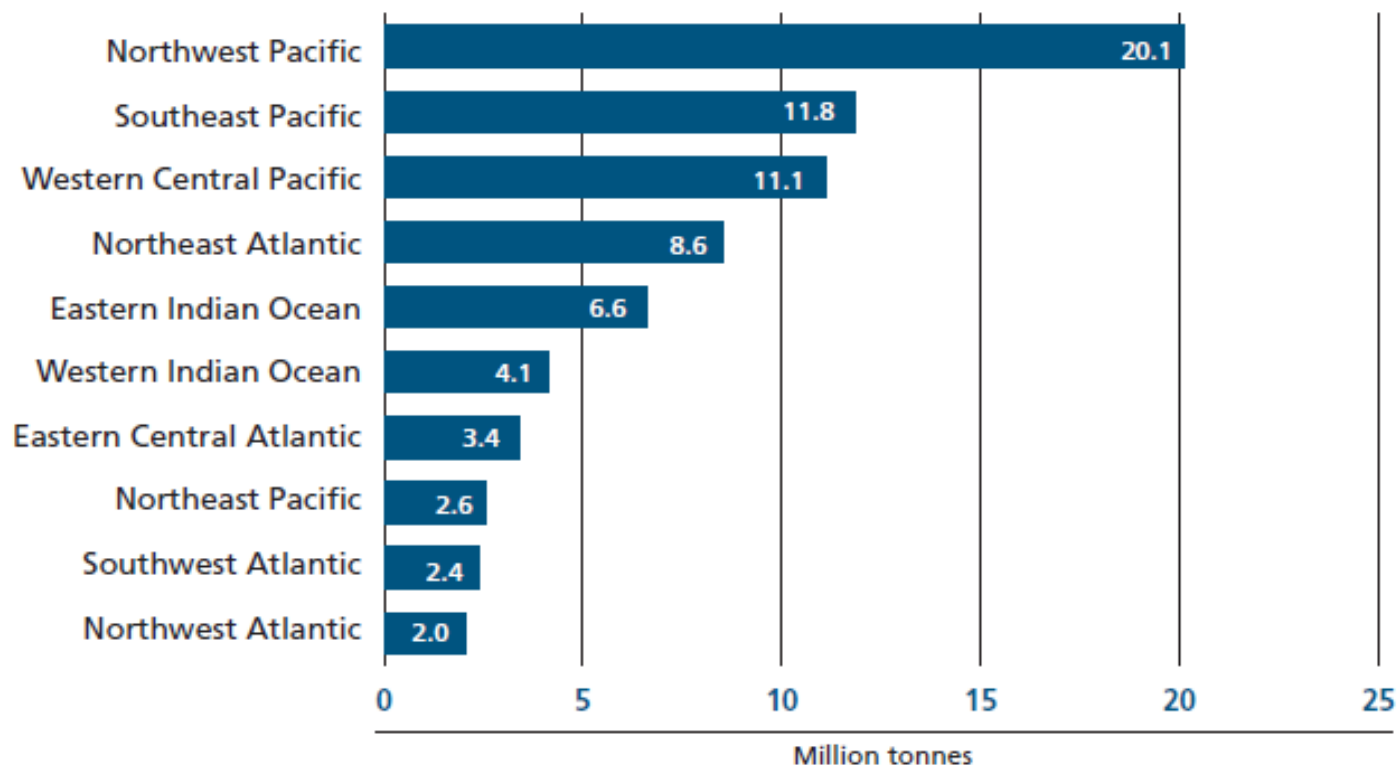
Million tonnes



Marine and inland capture fisheries: top ten producer countries in 2008

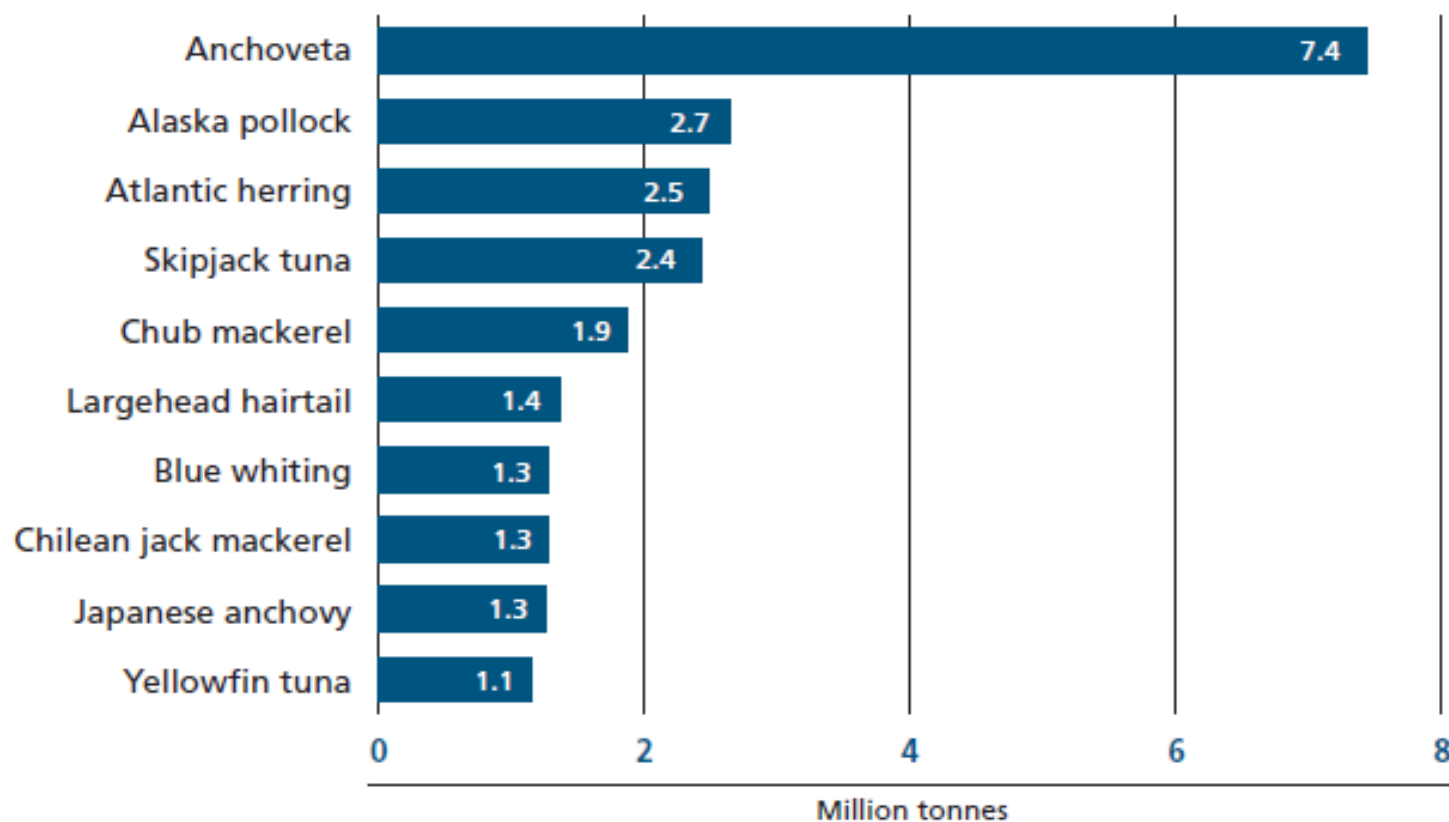


Capture fisheries production: principal marine fishing areas in 2008



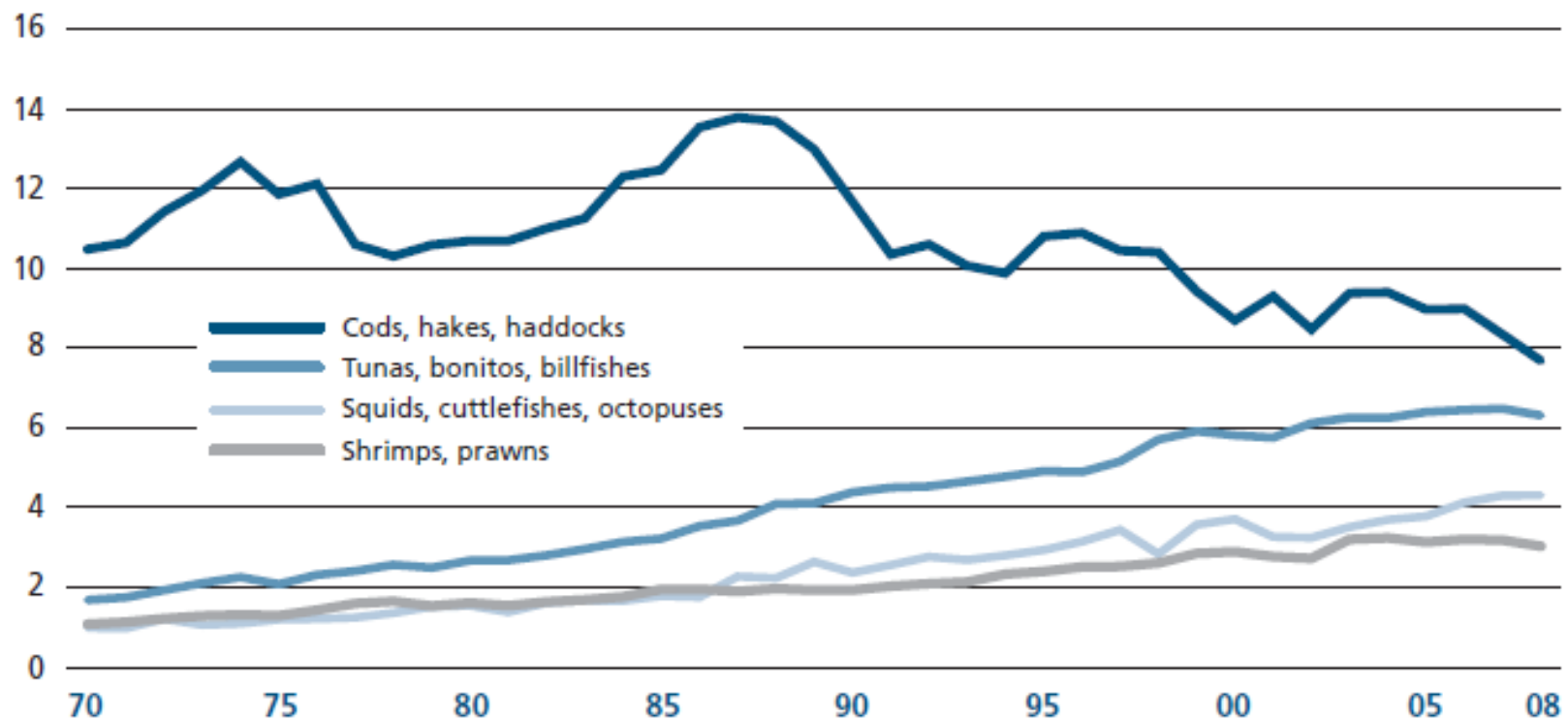
Note: Fishing areas listed are those with a production of at least 2 million tonnes.

Marine capture fisheries production: top ten species in 2008



Catch trends by valuable marine species groups

Million tonnes

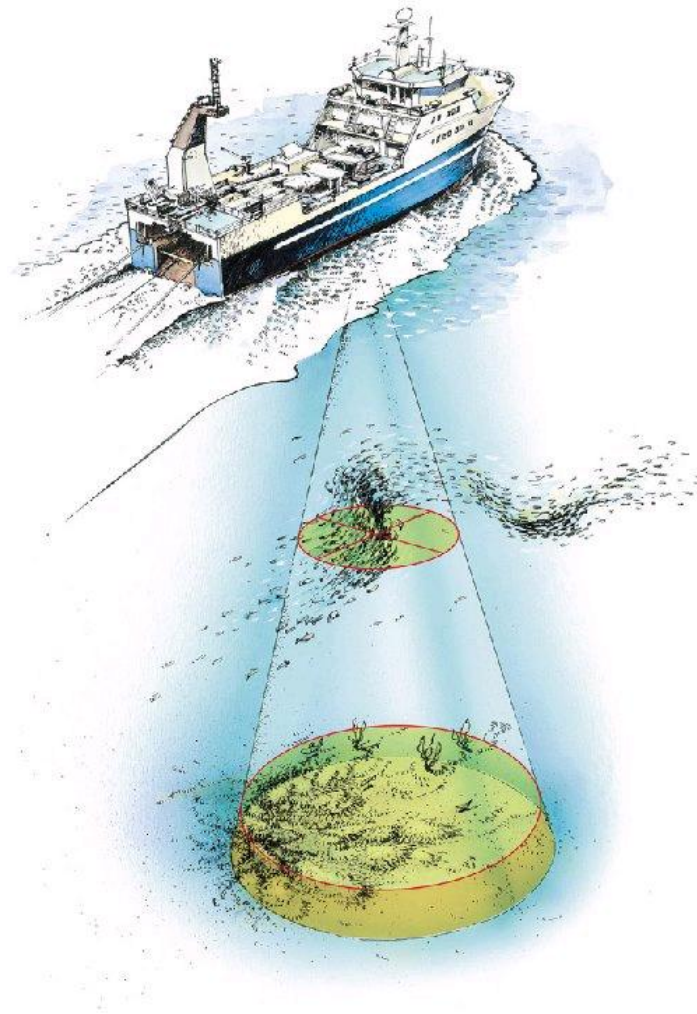


Top 15 aquaculture producers by quantity in 2008 and growth

	Production			Average annual rate of growth		
	1990	2000	2008	1990–2000	2000–2008	1990–2008
	<i>(Thousand tonnes)</i>			<i>(Percentage)</i>		
China	6 482	21 522	32 736	12.7	5.4	9.4
India	1 017	1 943	3 479	6.7	7.6	7.1
Viet Nam	160	499	2 462	12.0	22.1	16.4
Indonesia	500	789	1 690	4.7	10.0	7.0
Thailand	292	738	1 374	9.7	8.1	9.0
Bangladesh	193	657	1 006	13.1	5.5	9.6
Norway	151	491	844	12.6	7.0	10.0
Chile	32	392	843	28.3	10.1	19.8
Philippines	380	394	741	0.4	8.2	3.8
Japan	804	763	732	-0.5	-0.5	-0.5
Egypt	62	340	694	18.6	9.3	14.4
Myanmar	7	99	675	30.2	27.1	28.8
United States of America	315	456	500	3.8	1.2	2.6
Republic of Korea	377	293	474	-2.5	6.2	1.3
Taiwan Province of China	333	244	324	-3.1	3.6	-0.2

Note: Data exclude aquatic plants.

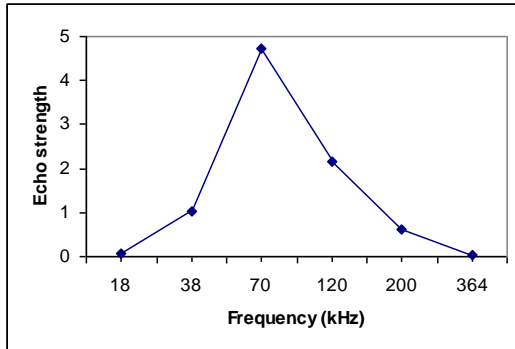
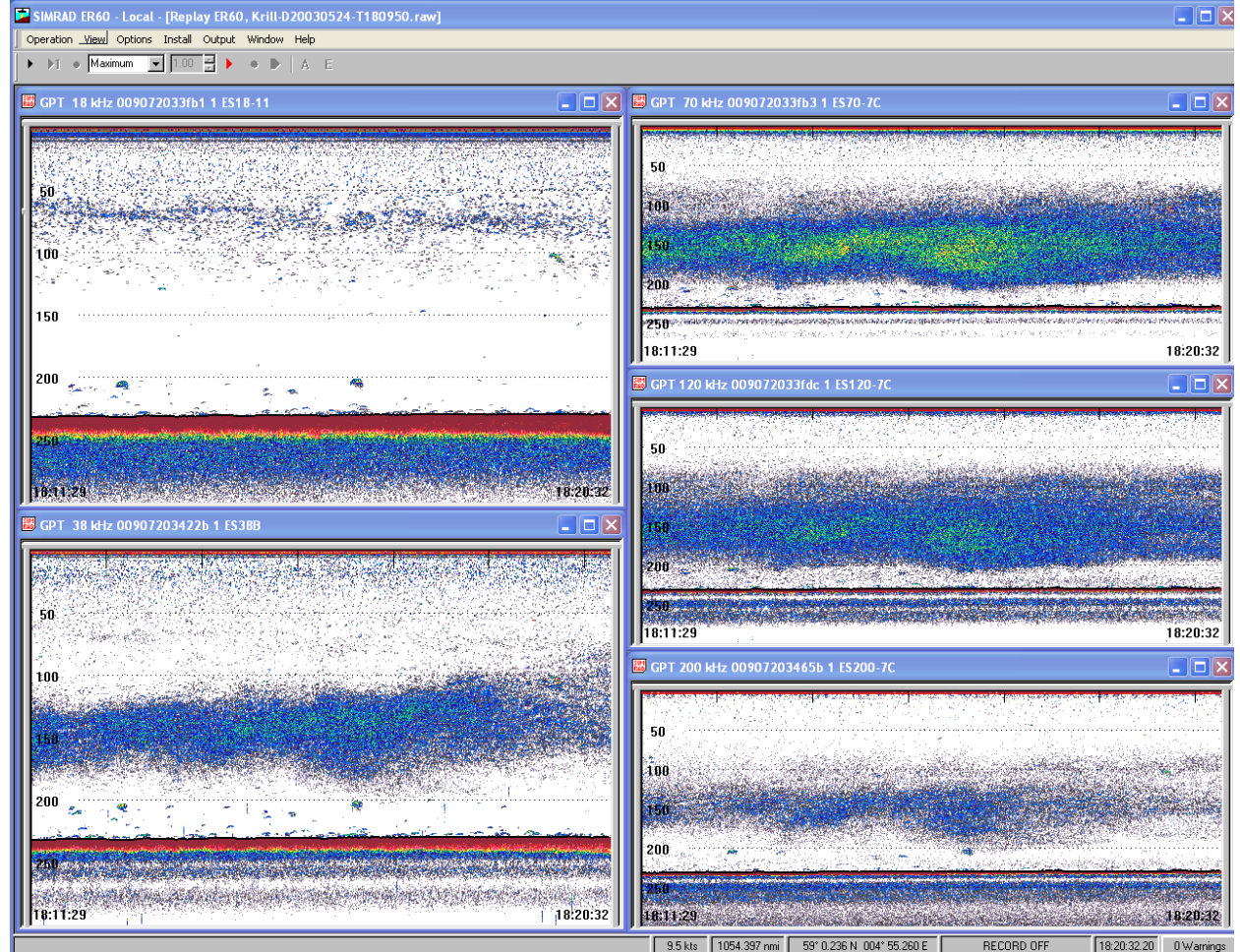
Classical echosounding



Drop-keel with transducers



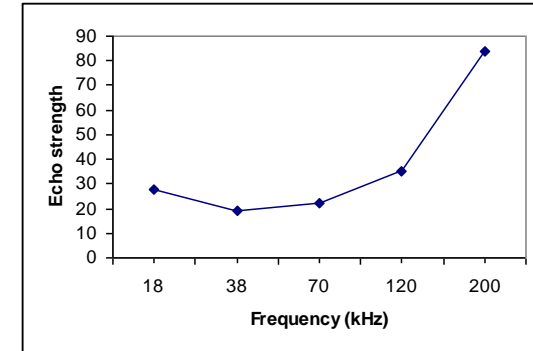
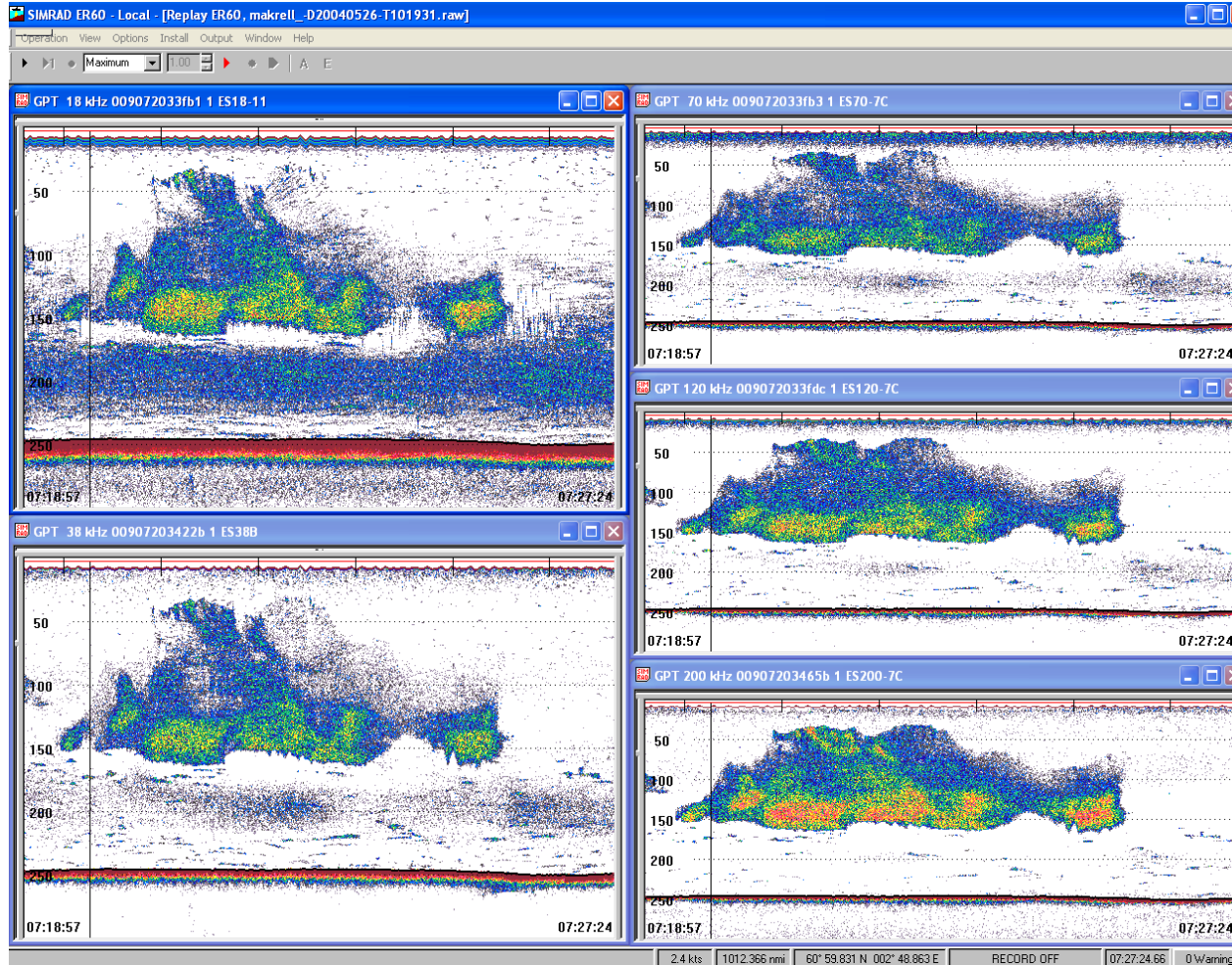
Krill (*Meganyctiphanes norvegica*)



Euphausiid – fluid like

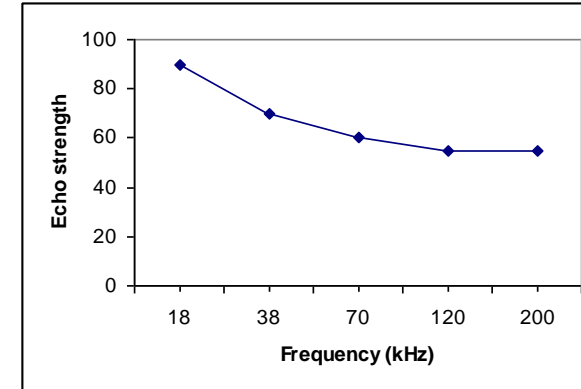
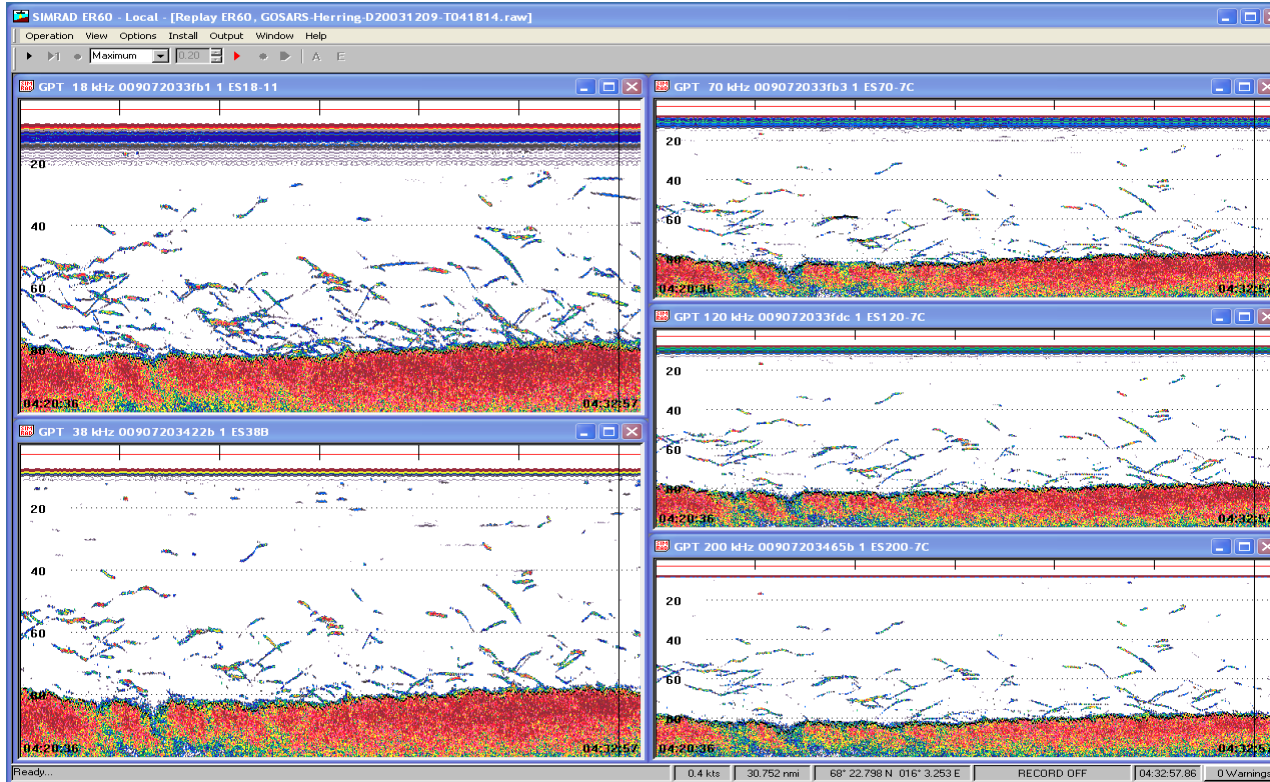
IMR, with permission

Mackerel MF-response



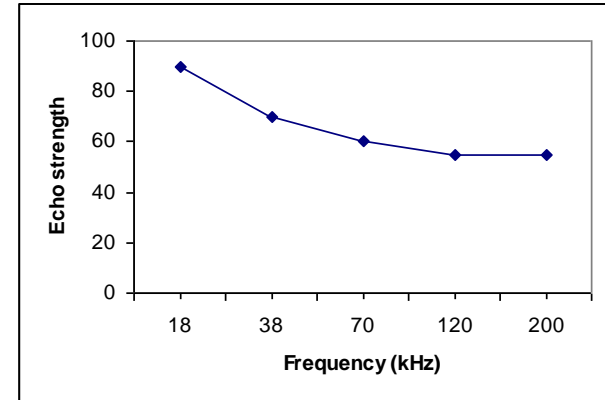
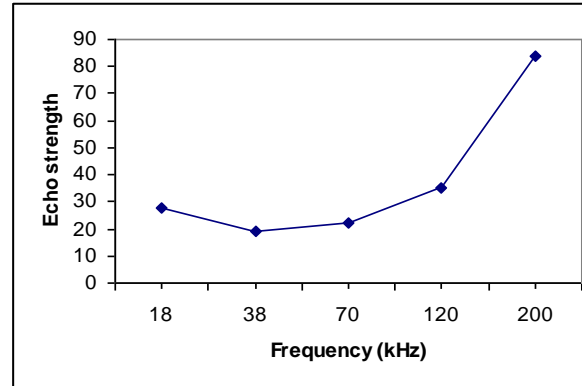
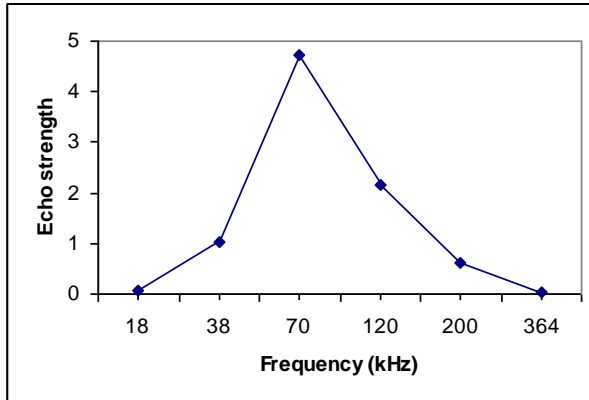
IMR, with permission

Herring MF-response



IMR, with permission

Acoustic signatures



Krill



Mackerel



Herring

- Increased resolution at longer range
 - Higher bandwidth -> Higher resolution
 - Longer pulse duration -> Longer range
- Increased frequency response information

New improved echo sounder!

Krill example

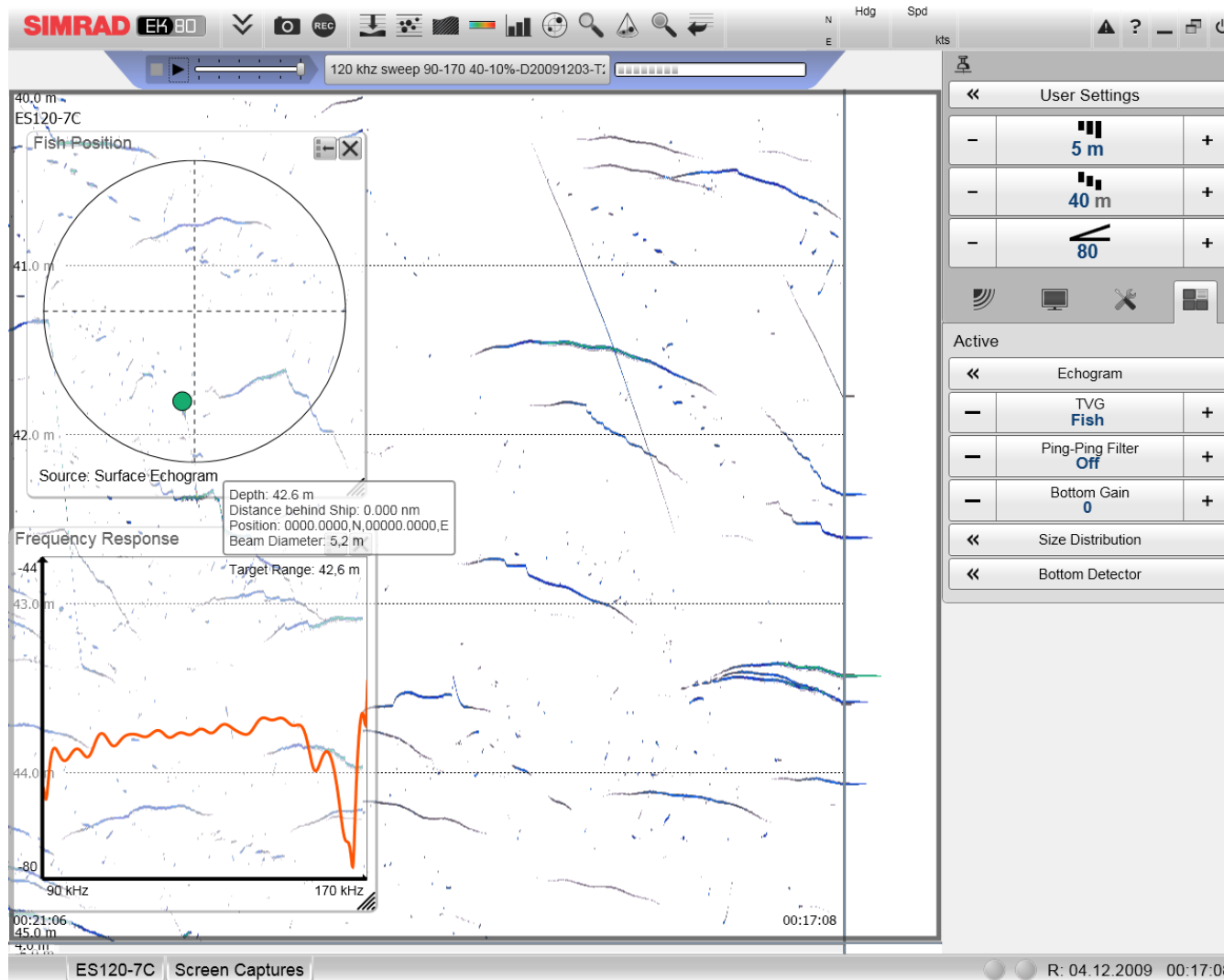


Figure 1 United Nations World Population Projections, 1950 - 2050

Source: World Population Prospects

