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Knowledge Base and Catalogue of Salmon Abundance of the Western Part of the Bering Sea

by

Igor V. Volvenko

Pacific Research Fisheries Centre (TINRO-Centre)
4, Shevchenko Alley, Vladivostok 690600 Russia

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Abstract

Knowledge base of the western part of the Bering Sea nekton resources contains the results of statistical and cartographic treatment of 2951 trawl stations. The calculations are made on the data of 34 scientific-research cruises in the sea within the period from May 20, 1982 to October 23, 2004. The abundance and biomass information (ind./km^2 and kg/km^2) is summarized for 13 biostatistical regions, for different seasons and vertical zones of the sea, and grouped into three periods (1982-1990, 1991-1995 and 1996-2004), which differ in climate-oceanological conditions and status of biological resources. A catalogue of tables entitled "Nekton of the western part of the Bering Sea. Abundance, biomass and species ratio" will be published next year in Russian language.

This document is prepared with use of the same base and same methods, but it contains only the data on pink, chum, sockeye, coho, chinook, and cherry salmons (140 tables). That is why it can be considered as a "Tabular Catalogue of Salmon Abundance in the western part of the Bering Sea". Materials of the included tables enable to estimate not only density of the population, but also total stock of any salmon species in this area.

In order to improve informational provision of bioresource investigations in the Far-Eastern seas of Russia, a database of trawl stations, performed in this region from 1980's to the present time, was developed in the Laboratory of the Applied Biocenology, TINRO-Center (Dulepova, Volvenko, 2002; Volvenko, 2003a). Later on it is planned to prepare informational products of higher level on its basis. They can be named as knowledge bases of hydrobionts resources, as these bases will contain not raw primary data, but the results of their statistical and cartographic treatment. This work has been conducted in two directions: 1) description of peculiarities of animal spatial-temporal distribution; 2) estimation of species composition, occurrence, population density and total stock of biological resources.

In accordance with the first direction a GIS, containing electronic maps of nekton distribution, is prepared, the atlases of quantitative distribution of nekton species in the Okhotsk and Japan (East) Seas are published (Atlas, 2003, 2004), and the same books of Bering Sea and deep-water Pacific nekton (Atlas, 2005, 2006) are in press. In accordance with the second direction a knowledge base with statistical tables of different parameters of all nekton species abundance was created. A catalogue of tables entitled "Nekton of the Okhotsk Sea. Abundance, biomass and species ratio" (2003), and "Nekton of the northwestern part of the Japan (East) Sea. Abundance, biomass and species ratio" (2004) are published. The same catalogue of deep-water Pacific nekton are in press (Nekton, 2005), and of Bering Sea nekton – will be prepared next year[1].

Materials and methods, used for creation of the abundance, biomass and species ratio tables, are almost identical to those, used for creation of GIS and the atlases (see, for example, Volvenko, 2003a, b, c). At the same time, these informational products describe nekton resources in different ways. An atlas shows peculiarities of spatial distribution of commercial and the most abundant species throughout the area. The tables contain detailed information on composition and abundance of the all nekton. Information like that cannot be integrated by 1x1-degree quadrangles, used for atlas preparation, firstly, because of the limited capacity of the book – it will not hold tens of thousands of tables, and, secondly, because of the lack of initial data – small samples sizes in many quadrangles would have made estimation of most species abundance statistically insignificant. That is why information in the tables for Bering Sea is integrated by the following 13 regions (Fig. 1):

1- Bering Strait,
2 - northwestern part of Anadyr Gulf,
3 - southeastern part of Anadyr Gulf,
4 - eastern part of Anadyr Gulf,
5 - Navarin,
6 – Koryak shelf,
7 - Koryak slope,
8 - western part Aleutian basin,
9 - Olyutorsky slope,
10 - shelf of Karaginsky and Olyutorsky Bays,
11 - Karaginsky slope,
12 - Komandor Basin,
13 - central part of Aleutian Basin.

This zoning of the Sea (completely the scheme was published for the first time: Shuntov et al, 1993) was performed taking into account general scheme of the surface water circulation, bottom relief and location of water mass modifications, identified by temperature-salinity characteristics. Borders of these regions are marked on every map of the appropriate atlas. Their morphometric characteristics are described in detail in the special paper (Volvenko, 2003d).

Another feature of the tables is more careful, in comparison with atlas, selection of initial data. The data of 34 scientific-research and fishery-research cruises in the Bering Sea within the period from 1982 to 2004, during which at least one valuable pelagic trawling was made, were used when creating the maps. The following trawlings were not considered as valuable: 1) emergency, 2) technical or adjustment, 3) purely fishery, 4) lasting for more than 3.5 hours or not more than 10 minutes (if in the latter case the trawl was taken out without a catch), and 5) conducted in epipelagic water layers (the depth of headrope towing is down to 200 m) with a speed not less than 3 knots. After quality control the number of sampling was equal to 3063 trawl stations. In order to make the tables, we had to exclude additionally fishery-research trawlings and aiming trawlings by echo records. The matter is that the majority of them contain reliable information only on the most abundant commercial objects, which substantially distorts the real ratio of species abundance. So, sampling amount reduced to 2951 stations (Fig. 1, Table 1).

Number and biomass of every species or intraspecific/interspecific group of animals per caught

[1] By preparation of the book for printing, the data given here can be specified.

area unit – a square kilometer – (in ind./km^2 and kg/km^2) for every trawl station were calculated by formula, described in detail and justified by Volvenko (2003b), and then summarized by the 13 above-mentioned regions. Besides, in order to reveal peculiarities of spatial-temporal distribution of hydrobionts, three more classification and basic data selection principles were introduced:

A) According to the trawled water layers they are subdivided into:
   1) epipelagic - the depth of headrope towing down to 200 m,
   2) upper epipelagic - the depth of headrope towing down to 25 m,
   3) mesopelagic - the depth of headrope towing down not less than 200 m.

B) According to seasons[1] they are subdivided into:
   1) summer - sampled from June 1 to September 15,
   2) autumn - sampled from September 16 to November 30,
   3) winter - sampled from December 1 to March 31,
   4) spring - sampled from April 1 to May 31.

C) According to years they are subdivided into three long-term periods:
   1) the eighties - 1982-1990,
   2) the first half of the nineties - 1991-1995,
   3) from the second half of the nineties to the present - 1996-2004.

In accordance with this classification 312 tables were obtained. Those of them, calculated on the basis of data of less than 10 trawling stations, are not published. Sampling sizes for the rest tables are given in their titles.

The materials of these tables enable to estimate total stock of any nekton bioresource in the western part of the Bering Sea. Using the area method, applied in this work, values of absolute hydrobionts abundance can be calculated approximately[2] by multiplication of mean density (ind./km^2 and kg/km^2) by a region area (thousand km^2). The result is obtained in thousands individuals and in tons, respectively. For this it is necessary to use Table 2. It gives areas of the regions, calculated (Volvenko, 2003d) using ArcView GIS 3.2 in four equal-area cartographic projections: Albers conic, Lambert cylindrical, Lambert azimuthal and Sanson-Flamsteed sinusoidal (see, for example, Map projections…, 1994). Peculiarities of these projections poorly affect the result of these calculations, that is why Table 2 gives only average values of four calculation variants.

This document contains only the data on salmons. That is why it can be considered as a "Tabular Catalogue of Salmon Abundance in the western part of the Bering Sea".

In the conclusion I shall notice, that the numerous opponents of catchability coefficient application easily can recount the given here data on their own manners, as in third columns of the tables 3-142 the meaning of coefficient (k) is given. For this purpose there is enough multiplication on it any of density parameters - number or biomass. Others, who basically does not deny necessity of catchability coefficient introduction, but disagree with the accepted here meanings of it, also easily can recount density, multiplying it on our coefficient, and then having divided on their own.

[1] In this case not calendar but biological seasons of the sea are meant (see Shuntov, 2001).
[2] About limitations of the area method see Volvenko (2000).

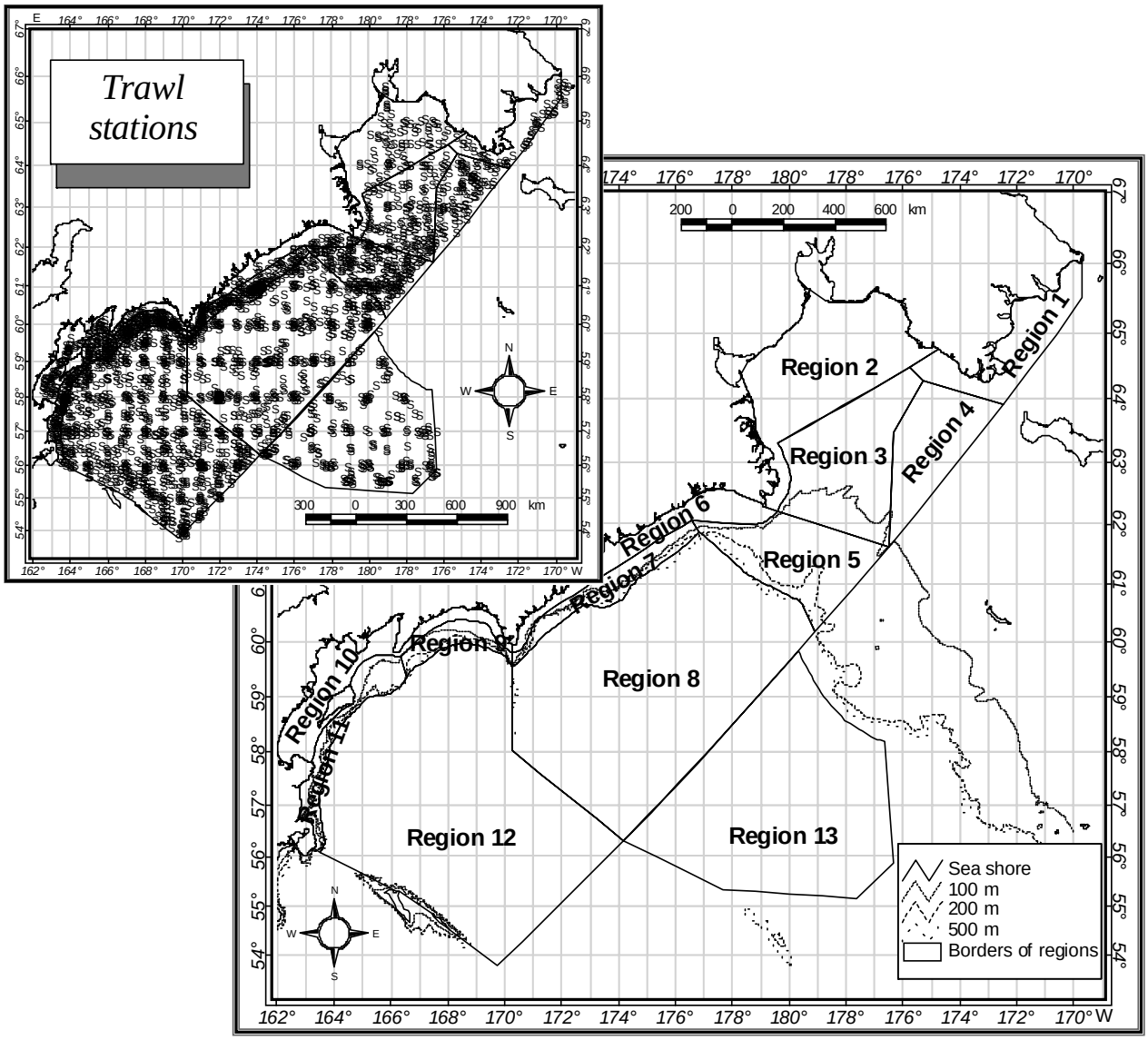

Fig. 1. Standard regions of averaging biostatistical information in the western part of the Bering Sea and spatial distribution of 2951 trawl stations made in 34 research cruises during 20-May-82 – 23-Oct-04

Table 1

A list of selected cruises, with indication of a sampling size, conducted in the Bering Sea from 1982 till 2004

Date		Trawler	Number of stations
starting	ending		
20-May-82	01-Aug-82	BMRT "Mys Teahiy"	76
29-Jul-83	14-Aug-83	BMRT "Tikhookeanskiy"	14
04-May-84	27-May-84	BMRT "Mys Teahiy"	29
08-Sep-86	01-Nov-86	BATM "Babaevsk"	155
06-Aug-87	22-Oct-87	RTMS "Gnevniy"	256
16-Jul-88	01-Aug-88	RTMS "Novoulyanovsk"	17
08-Oct-88	22-Dec-88	RTMS "Novodrutsk"	265
23-May-89	31-Jul-89	RTMS "Gissar"	306
27-May-89	30-Jul-89	STM "Prof. Soldatov"	76
01-Nov-89	30-Nov-89	RTMS "Gissar"	83
09-Apr-90	26-Jun-90	RTMS "Mlechny Put"	272
03-May-90	19-Jun-90	RTM "Shantar"	12
30-Sep-90	18-Nov-90	RTMS "Novokotovsk"	223
20-Oct-90	18-Nov-90	STM "Prof. Soldatov"	56
27-Mar-91	12-May-91	RTMS "Mlechny Put"	13
22-Jun-91	03-Jul-91	STM "Prof. Levanidov"	31
25-Jun-91	03-Jul-91	STM "Prof. Kaganovsky"	24
26-Jun-91	18-Jul-91	RTMS "Novoulyanovsk"	12
18-Nov-91	08-Jan-92	STM "Prof. Kizevetter"	83
04-Jul-92	18-Jul-92	STM "Prof. Levanidov"	57
18-Jun-93	07-Jul-93	STM "Prof. Kizevetter"	42
28-Jun-93	01-Jul-93	STM "TINRO"	11
07-Sep-93	08-Sep-93	Japan vessel "Kasima-maru 8"	12
18-Oct-93	20-Oct-93	Japan vessel "Kasima-maru 8"	14
11-Nov-93	16-Dec-93	STM "TINRO"	65
19-Jun-95	09-Jul-95	STM "Prof. Levanidov"	58
21-Sep-98	19-Oct-98	STM "Prof. Kaganovsky"	44
09-Sep-99	09-Sep-99	STM "Prof. Kizevetter"	1
22-Aug-99	09-Nov-99	STM "TINRO"	95
08-Sep-00	19-Oct-00	STM "TINRO"	126
01-Nov-01	12-Nov-01	STM "Prof. Kaganovsky"	30
30-Jun-02	14-Oct-02	STM "TINRO"	91
17-Jul-03	25-Oct-03	STM "TINRO"	165
21-Jul-04	23-Oct-04	STM "TINRO"	137

Table 2

Water surface area (thousand km^2) in standard biostatistical regions of the Bering Sea (see Fig. 1)

Region	Area	Region	Area
1	19,49	8	203,96
2	48,37	9	9,23
3	44,27	10	26,55
4	27,27	11	16,77
5	37,12	12	249,46
6	18,77	13	175,83
7	15,20		

Table 3

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 1 (number of trawl stations 55)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	3.64%	7.217	9.292	0.300 ± 0.214	0.446	0.837	0.023 ± 0.017
Oncorhynchus keta	≤ 30 cm	0.40	2	3.64%	27.248	28.868	1.020 ± 0.722	2.025	2.685	0.086 ± 0.061
Oncorhynchus keta	> 30 cm	0.30	22	40.00%	5.612	812.709	60.667 ± 23.504	15.462	3215.313	230.140 ± 86.565
Oncorhynchus nerka	≤ 30 cm	0.40	2	3.64%	18.165	64.952	1.511 ± 1.232	1.953	7.368	0.169 ± 0.139
Oncorhynchus nerka	> 30 cm	0.30	1	1.82%	6.754	6.754	0.123 ± 0.124	7.767	7.767	0.141 ± 0.143
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	1.82%	9.083	9.083	0.165 ± 0.167	1.780	1.780	0.032 ± 0.033
Oncorhynchus tschawytscha	> 30 cm	0.30	9	16.36%	5.856	31.166	2.445 ± 0.887	22.839	319.981	18.818 ± 8.184

Table 4

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 2 (number of trawl stations 86)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	1.16%	27.078	27.078	0.315 ± 0.317	0.821	0.821	0.010 ± 0.010
Oncorhynchus keta	> 30 cm	0.30	29	33.72%	6.028	895.451	42.552 ± 12.730	21.098	3233.572	153.972 ± 46.750
Oncorhynchus kisutch	> 30 cm	0.30	1	1.16%	12.515	12.515	0.146 ± 0.146	53.816	53.816	0.626 ± 0.629
Oncorhynchus nerka	≤ 30 cm	0.40	2	2.33%	9.026	9.387	0.214 ± 0.151	0.375	0.866	0.014 ± 0.011
Oncorhynchus nerka	> 30 cm	0.30	3	3.49%	6.586	37.546	0.608 ± 0.454	7.573	24.280	0.523 ± 0.332
Oncorhynchus tschawytscha	> 30 cm	0.30	14	16.28%	6.389	156.451	6.585 ± 2.463	8.358	300.094	20.008 ± 6.150

Table 5

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 3 (number of trawl stations 135)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.74%	9.008	9.008	0.067 ± 0.067	0.423	0.423	0.003 ± 0.003
Oncorhynchus gorbuscha	> 30 cm	0.30	1	0.74%	14.736	14.736	0.109 ± 0.110	17.315	17.315	0.128 ± 0.129
Oncorhynchus keta	≤ 30 cm	0.40	6	4.44%	17.576	315.263	3.857 ± 2.450	0.624	24.870	0.337 ± 0.200
Oncorhynchus keta	> 30 cm	0.30	31	22.96%	7.438	4200.558	64.845 ± 34.797	22.711	6723.282	121.236 ± 58.545
Oncorhynchus kisutch	> 30 cm	0.30	1	0.74%	7.120	7.120	0.053 ± 0.053	17.087	17.087	0.127 ± 0.127
Oncorhynchus nerka	≤ 30 cm	0.40	7	5.19%	6.580	151.822	1.939 ± 1.185	0.276	28.762	0.329 ± 0.222
Oncorhynchus nerka	> 30 cm	0.30	9	6.67%	6.616	372.527	6.505 ± 3.714	4.387	224.218	4.609 ± 2.463
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	1.48%	9.294	9.837	0.142 ± 0.100	0.911	2.990	0.029 ± 0.023
Oncorhynchus tschawytscha	> 30 cm	0.30	16	11.85%	3.467	140.611	3.056 ± 1.224	3.467	162.917	4.922 ± 1.728

Table 6

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 4 (number of trawl stations 96)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	2.08%	8.663	91.709	1.046 ± 0.964	0.754	8.584	0.097 ± 0.090
Oncorhynchus keta	≤ 30 cm	0.40	4	4.17%	9.191	752.014	10.199 ± 8.124	0.653	73.413	0.928 ± 0.781
Oncorhynchus keta	> 30 cm	0.30	25	26.04%	5.620	7817.657	102.839 ± 82.089	12.911	20254.837	254.049 ± 212.251
Oncorhynchus nerka	≤ 30 cm	0.40	6	6.25%	8.521	91.709	1.606 ± 1.001	0.700	14.398	0.221 ± 0.154
Oncorhynchus nerka	> 30 cm	0.30	4	4.17%	6.911	61.271	1.116 ± 0.709	14.443	42.387	1.010 ± 0.549
Oncorhynchus tschawytscha	> 30 cm	0.30	12	12.50%	9.147	122.543	5.228 ± 1.958	6.646	207.890	9.050 ± 3.262

Table 7

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 5 (number of trawl stations 207)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	8	3.86%	7.959	98.796	1.744 ± 0.785	0.440	8.633	0.142 ± 0.066
Oncorhynchus gorbuscha	> 30 cm	0.30	5	2.42%	10.595	59.072	0.613 ± 0.340	15.321	70.453	0.875 ± 0.464
Oncorhynchus keta	≤ 30 cm	0.40	7	3.38%	8.981	390.159	3.535 ± 2.015	1.356	41.917	0.328 ± 0.209
Oncorhynchus keta	> 30 cm	0.30	43	20.77%	2.007	8713.823	163.936 ± 53.654	5.017	8875.191	216.100 ± 62.336
Oncorhynchus kisutch	> 30 cm	0.30	3	1.45%	7.535	12.183	0.151 ± 0.088	9.043	29.734	0.312 ± 0.195
Oncorhynchus nerka	≤ 30 cm	0.40	12	5.80%	7.839	391.438	4.690 ± 2.189	0.321	20.638	0.481 ± 0.178
Oncorhynchus nerka	> 30 cm	0.30	24	11.59%	9.284	2644.195	19.980 ± 13.007	5.725	1777.548	15.291 ± 8.911
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	0.48%	7.741	7.741	0.037 ± 0.037	1.099	1.099	0.005 ± 0.005
Oncorhynchus tschawytscha	> 30 cm	0.30	27	13.04%	1.997	259.027	4.793 ± 1.482	1.798	528.958	11.233 ± 3.649

Table 8

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 6 (number of trawl stations 54)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	15	27.78%	7.573	761.146	39.821 ± 17.559	37.484	3262.054	143.714 ± 69.368
Oncorhynchus nerka	> 30 cm	0.30	1	1.85%	4.730	4.730	0.088 ± 0.088	13.528	13.528	0.251 ± 0.253
Oncorhynchus sp.	> 30 cm	0.30	1	1.85%	41.143	41.143	0.762 ± 0.769	205.713	205.713	3.809 ± 3.845
Oncorhynchus tschawytscha	> 30 cm	0.30	6	11.11%	4.730	82.285	3.899 ± 1.983	13.035	740.566	26.081 ± 15.491

Table 9

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 7 (number of trawl stations 158)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	1.27%	1.519	18.174	0.125 ± 0.116	0.084	1.681	0.011 ± 0.011
Oncorhynchus gorbuscha	> 30 cm	0.30	1	0.63%	12.424	12.424	0.079 ± 0.079	15.307	15.307	0.097 ± 0.097
Oncorhynchus keta	≤ 30 cm	0.40	3	1.90%	17.824	152.177	1.248 ± 0.986	1.462	4.540	0.051 ± 0.033
Oncorhynchus keta	> 30 cm	0.30	28	17.72%	5.807	4112.458	59.739 ± 28.673	5.807	2664.264	66.080 ± 23.068
Oncorhynchus kisutch	> 30 cm	0.30	2	1.27%	11.447	26.635	0.241 ± 0.184	16.014	186.445	1.281 ± 1.187
Oncorhynchus nerka	≤ 30 cm	0.40	5	3.16%	8.002	226.817	2.892 ± 1.900	1.584	39.391	0.505 ± 0.328
Oncorhynchus nerka	> 30 cm	0.30	15	9.49%	10.345	559.095	10.423 ± 5.025	10.812	412.240	8.901 ± 3.966
Oncorhynchus tschawytscha	≤ 30 cm	0.40	3	1.90%	9.073	17.824	0.253 ± 0.151	1.461	3.244	0.048 ± 0.029
Oncorhynchus tschawytscha	> 30 cm	0.30	16	10.13%	3.794	148.809	3.420 ± 1.384	3.826	179.919	6.574 ± 2.142

Table 10

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 8 (number of trawl stations 366)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	39	10.66%	8.189	7033.630	38.647 ± 20.314	0.803	511.437	3.868 ± 1.660
Oncorhynchus gorbuscha	> 30 cm	0.30	18	4.92%	6.686	555.346	6.369 ± 2.276	6.352	736.389	8.448 ± 3.073
Oncorhynchus keta	≤ 30 cm	0.40	11	3.01%	6.909	521.703	1.915 ± 1.440	0.492	65.213	0.242 ± 0.181
Oncorhynchus keta	> 30 cm	0.30	176	48.09%	6.565	14403.514	510.011 ± 62.323	2.954	8179.984	356.104 ± 39.613
Oncorhynchus kisutch	≤ 30 cm	0.40	14	3.83%	6.248	33.455	0.464 ± 0.145	1.762	7.661	0.121 ± 0.037
Oncorhynchus kisutch	> 30 cm	0.30	26	7.10%	11.370	339.729	3.926 ± 1.284	4.668	123.989	2.186 ± 0.572
Oncorhynchus nerka	≤ 30 cm	0.40	26	7.10%	6.977	194.469	2.259 ± 0.730	0.567	32.202	0.439 ± 0.138
Oncorhynchus nerka	> 30 cm	0.30	156	42.62%	8.708	2610.946	111.833 ± 15.604	8.520	1928.512	103.228 ± 13.660
Oncorhynchus tschawytscha	≤ 30 cm	0.40	28	7.65%	5.360	57.695	1.423 ± 0.338	0.311	14.567	0.317 ± 0.081
Oncorhynchus tschawytscha	> 30 cm	0.30	140	38.25%	5.496	899.419	25.506 ± 4.006	4.897	933.711	31.621 ± 4.687

Table 11

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 9 (number of trawl stations 146)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.68%	221.992	221.992	1.520 ± 1.526	28.113	28.113	0.193 ± 0.193
Oncorhynchus gorbuscha	> 30 cm	0.30	3	2.05%	6.631	71.365	0.625 ± 0.500	6.763	96.831	0.825 ± 0.676
Oncorhynchus keta	≤ 30 cm	0.40	4	2.74%	7.059	310.789	2.578 ± 2.153	1.024	25.334	0.212 ± 0.176
Oncorhynchus keta	> 30 cm	0.30	27	18.49%	5.629	3018.513	35.380 ± 20.998	12.518	1849.622	42.024 ± 14.559
Oncorhynchus kisutch	≤ 30 cm	0.40	2	1.37%	4.510	195.353	1.369 ± 1.343	0.586	61.669	0.426 ± 0.424
Oncorhynchus kisutch	> 30 cm	0.30	1	0.68%	6.631	6.631	0.045 ± 0.046	18.102	18.102	0.124 ± 0.124
Oncorhynchus nerka	≤ 30 cm	0.40	2	1.37%	246.814	639.338	6.070 ± 4.699	48.018	109.975	1.082 ± 0.823
Oncorhynchus nerka	> 30 cm	0.30	9	6.16%	26.523	1066.692	15.974 ± 8.695	23.775	1222.032	14.338 ± 8.856
Oncorhynchus tschawytscha	≤ 30 cm	0.40	10	6.85%	4.510	150.955	2.943 ± 1.273	0.361	32.864	0.575 ± 0.267
Oncorhynchus tschawytscha	> 30 cm	0.30	10	6.85%	4.120	40.048	1.117 ± 0.431	32.509	109.991	4.377 ± 1.453

Table 12

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 10 (number of trawl stations 120)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	3	2.50%	6.624	1087.355	15.374 ± 11.014	0.318	63.062	0.990 ± 0.700
Oncorhynchus gorbuscha	> 30 cm	0.30	7	5.83%	8.584	182.889	2.798 ± 1.644	7.554	240.991	3.662 ± 2.181
Oncorhynchus keta	≤ 30 cm	0.40	10	8.33%	7.983	1042.049	17.516 ± 9.532	0.136	62.319	1.300 ± 0.650
Oncorhynchus keta	> 30 cm	0.30	23	19.17%	6.622	1001.261	18.948 ± 9.047	18.530	3615.664	61.896 ± 32.014
Oncorhynchus kisutch	≤ 30 cm	0.40	3	2.50%	4.850	18.564	0.306 ± 0.194	0.631	2.192	0.042 ± 0.026
Oncorhynchus nerka	≤ 30 cm	0.40	10	8.33%	4.069	354.068	7.063 ± 3.613	0.185	34.340	0.679 ± 0.349
Oncorhynchus nerka	> 30 cm	0.30	1	0.83%	13.726	13.726	0.114 ± 0.115	11.461	11.461	0.096 ± 0.096
Oncorhynchus tschawytscha	≤ 30 cm	0.40	16	13.33%	4.500	621.799	23.514 ± 8.388	0.468	69.168	2.800 ± 0.969
Oncorhynchus tschawytscha	> 30 cm	0.30	8	6.67%	6.618	85.147	1.214 ± 0.736	3.849	102.586	3.595 ± 1.484

Table 13

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 11 (number of trawl stations 162)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	4	2.47%	11.623	52.857	0.604 ± 0.365	1.154	4.757	0.054 ± 0.033
Oncorhynchus gorbuscha	> 30 cm	0.30	15	9.26%	7.443	757.618	16.063 ± 7.212	8.411	925.513	19.693 ± 8.849
Oncorhynchus keta	≤ 30 cm	0.40	7	4.32%	4.286	1064.176	9.520 ± 6.846	0.407	91.635	0.792 ± 0.584
Oncorhynchus keta	> 30 cm	0.30	24	14.81%	5.870	331.977	6.727 ± 2.350	14.383	209.822	13.302 ± 3.129
Oncorhynchus kisutch	≤ 30 cm	0.40	3	1.85%	4.286	13.358	0.156 ± 0.099	0.600	2.137	0.025 ± 0.016
Oncorhynchus nerka	≤ 30 cm	0.40	8	4.94%	5.582	1821.122	21.339 ± 13.931	1.228	147.827	1.930 ± 1.216
Oncorhynchus nerka	> 30 cm	0.30	6	3.70%	6.832	143.463	1.227 ± 0.901	2.828	74.874	0.893 ± 0.531
Oncorhynchus tschawytscha	≤ 30 cm	0.40	13	8.02%	5.834	537.432	7.678 ± 3.949	0.928	161.230	1.873 ± 1.123
Oncorhynchus tschawytscha	> 30 cm	0.30	10	6.17%	6.832	53.038	1.204 ± 0.464	6.960	216.137	5.312 ± 2.063

Table 14

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 12 (number of trawl stations 577)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	90	15.60%	6.878	47780.333	261.415 ± 89.456	0.481	2943.644	21.975 ± 6.026
Oncorhynchus gorbuscha	> 30 cm	0.30	114	19.76%	6.477	3107.223	40.064 ± 8.241	6.991	3305.500	45.811 ± 9.257
Oncorhynchus keta	≤ 30 cm	0.40	56	9.71%	8.508	3354.861	25.251 ± 8.377	0.429	371.184	2.377 ± 0.821
Oncorhynchus keta	> 30 cm	0.30	302	52.34%	5.291	2965.881	146.622 ± 14.295	2.784	3568.412	166.057 ± 14.254
Oncorhynchus kisutch	≤ 30 cm	0.40	58	10.05%	3.676	295.708	3.815 ± 0.789	0.772	85.920	0.987 ± 0.214
Oncorhynchus kisutch	> 30 cm	0.30	22	3.81%	7.144	181.506	1.028 ± 0.371	3.254	66.533	0.852 ± 0.234
Oncorhynchus masou	≤ 30 cm	0.40	1	0.17%	5.898	5.898	0.010 ± 0.010	0.624	0.624	0.001 ± 0.001
Oncorhynchus nerka	≤ 30 cm	0.40	48	8.32%	5.452	926.310	7.930 ± 2.288	0.353	122.937	1.144 ± 0.318
Oncorhynchus nerka	> 30 cm	0.30	287	49.74%	4.398	2026.905	95.833 ± 9.650	2.971	3076.169	89.391 ± 10.142
Oncorhynchus tschawytscha	≤ 30 cm	0.40	104	18.02%	3.446	335.273	8.000 ± 1.182	0.516	46.252	1.263 ± 0.178
Oncorhynchus tschawytscha	> 30 cm	0.30	106	18.37%	2.604	107.854	3.307 ± 0.414	2.604	239.340	7.569 ± 0.994

Table 15

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 13 (number of trawl stations 118)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.85%	38.028	38.028	0.322 ± 0.324	4.563	4.563	0.039 ± 0.039
Oncorhynchus gorbuscha	> 30 cm	0.30	2	1.69%	6.602	6.988	0.115 ± 0.081	6.140	6.638	0.108 ± 0.077
Oncorhynchus keta	≤ 30 cm	0.40	3	2.54%	8.925	741.544	6.967 ± 6.335	2.508	89.366	0.912 ± 0.771
Oncorhynchus keta	> 30 cm	0.30	29	24.58%	6.988	1477.352	32.607 ± 14.990	8.970	1065.579	26.761 ± 11.769
Oncorhynchus kisutch	> 30 cm	0.30	1	0.85%	2.759	2.759	0.023 ± 0.023	3.586	3.586	0.030 ± 0.031
Oncorhynchus nerka	≤ 30 cm	0.40	5	4.24%	8.925	129.246	1.880 ± 1.173	1.740	26.588	0.358 ± 0.237
Oncorhynchus nerka	> 30 cm	0.30	22	18.64%	8.028	532.391	14.956 ± 5.425	6.244	370.449	12.840 ± 4.079
Oncorhynchus tschawytscha	≤ 30 cm	0.40	8	6.78%	9.122	50.421	1.565 ± 0.620	1.805	10.554	0.329 ± 0.130
Oncorhynchus tschawytscha	> 30 cm	0.30	31	26.27%	6.439	160.194	9.249 ± 2.094	5.113	212.658	14.244 ± 3.193

Table 16

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 1 (number of trawl stations 54)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	3.70%	7.217	9.292	0.306 ± 0.218	0.446	0.837	0.024 ± 0.018
Oncorhynchus keta	≤ 30 cm	0.40	2	3.70%	27.248	28.868	1.039 ± 0.735	2.025	2.685	0.087 ± 0.062
Oncorhynchus keta	> 30 cm	0.30	22	40.74%	5.612	812.709	61.791 ± 23.920	15.462	3215.313	234.402 ± 88.090
Oncorhynchus nerka	≤ 30 cm	0.40	2	3.70%	18.165	64.952	1.539 ± 1.255	1.953	7.368	0.173 ± 0.142
Oncorhynchus nerka	> 30 cm	0.30	1	1.85%	6.754	6.754	0.125 ± 0.126	7.767	7.767	0.144 ± 0.145
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	1.85%	9.083	9.083	0.168 ± 0.170	1.780	1.780	0.033 ± 0.033
Oncorhynchus tschawytscha	> 30 cm	0.30	8	14.81%	5.856	31.166	2.091 ± 0.827	22.839	242.088	13.241 ± 6.053

Table 17

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 2 (number of trawl stations 74)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	1.35%	27.078	27.078	0.366 ± 0.368	0.821	0.821	0.011 ± 0.011
Oncorhynchus keta	> 30 cm	0.30	29	39.19%	6.028	895.451	49.452 ± 14.662	21.098	3233.572	178.941 ± 53.862
Oncorhynchus kisutch	> 30 cm	0.30	1	1.35%	12.515	12.515	0.169 ± 0.170	53.816	53.816	0.727 ± 0.732
Oncorhynchus nerka	≤ 30 cm	0.40	2	2.70%	9.026	9.387	0.249 ± 0.176	0.375	0.866	0.017 ± 0.013
Oncorhynchus nerka	> 30 cm	0.30	2	2.70%	6.586	37.546	0.596 ± 0.517	7.573	24.280	0.430 ± 0.345
Oncorhynchus tschawytscha	> 30 cm	0.30	13	17.57%	6.389	156.451	7.303 ± 2.839	8.358	234.783	19.197 ± 5.977

Table 18

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 3 (number of trawl stations 80)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	1.25%	9.008	9.008	0.113 ± 0.113	0.423	0.423	0.005 ± 0.005
Oncorhynchus gorbuscha	> 30 cm	0.30	1	1.25%	14.736	14.736	0.184 ± 0.185	17.315	17.315	0.216 ± 0.218
Oncorhynchus keta	≤ 30 cm	0.40	6	7.50%	17.576	315.263	6.509 ± 4.129	0.624	24.870	0.569 ± 0.337
Oncorhynchus keta	> 30 cm	0.30	25	31.25%	7.438	4200.558	102.551 ± 58.549	22.711	6723.282	191.287 ± 98.310
Oncorhynchus kisutch	> 30 cm	0.30	1	1.25%	7.120	7.120	0.089 ± 0.090	17.087	17.087	0.214 ± 0.215
Oncorhynchus nerka	≤ 30 cm	0.40	7	8.75%	6.580	151.822	3.272 ± 1.996	0.276	28.762	0.556 ± 0.374
Oncorhynchus nerka	> 30 cm	0.30	7	8.75%	7.592	372.527	9.383 ± 6.094	4.387	224.218	6.302 ± 3.916
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	2.50%	9.294	9.837	0.239 ± 0.169	0.911	2.990	0.049 ± 0.039
Oncorhynchus tschawytscha	> 30 cm	0.30	14	17.50%	3.467	140.611	4.588 ± 1.999	3.467	100.384	6.225 ± 2.090

Table 19

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 4 (number of trawl stations 64)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	3.13%	8.663	91.709	1.568 ± 1.449	0.754	8.584	0.146 ± 0.136
Oncorhynchus keta	≤ 30 cm	0.40	4	6.25%	9.191	752.014	15.299 ± 12.199	0.653	73.413	1.392 ± 1.173
Oncorhynchus keta	> 30 cm	0.30	22	34.38%	5.869	7817.657	153.132 ± 123.287	12.911	20254.837	378.536 ± 318.883
Oncorhynchus nerka	≤ 30 cm	0.40	6	9.38%	8.521	91.709	2.409 ± 1.499	0.700	14.398	0.332 ± 0.231
Oncorhynchus nerka	> 30 cm	0.30	4	6.25%	6.911	61.271	1.674 ± 1.063	14.443	42.387	1.515 ± 0.820
Oncorhynchus tschawytscha	> 30 cm	0.30	10	15.63%	9.147	122.543	6.025 ± 2.580	6.646	207.890	10.128 ± 4.285

Table 20

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 5 (number of trawl stations 53)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	8	15.09%	7.959	98.796	6.813 ± 3.000	0.440	8.633	0.553 ± 0.253
Oncorhynchus gorbuscha	> 30 cm	0.30	5	9.43%	10.595	59.072	2.392 ± 1.317	15.321	70.453	3.417 ± 1.793
Oncorhynchus keta	≤ 30 cm	0.40	7	13.21%	8.981	390.159	13.807 ± 7.808	1.356	41.917	1.281 ± 0.815
Oncorhynchus keta	> 30 cm	0.30	30	56.60%	7.640	8713.823	629.231 ± 198.612	9.711	8875.191	831.963 ± 225.757
Oncorhynchus kisutch	> 30 cm	0.30	3	5.66%	7.535	12.183	0.588 ± 0.343	9.043	29.734	1.217 ± 0.757
Oncorhynchus nerka	≤ 30 cm	0.40	12	22.64%	7.839	391.438	18.317 ± 8.383	0.321	20.638	1.878 ± 0.668
Oncorhynchus nerka	> 30 cm	0.30	19	35.85%	9.284	2644.195	73.788 ± 50.685	5.725	1777.548	51.560 ± 34.112
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	1.89%	7.741	7.741	0.146 ± 0.147	1.099	1.099	0.021 ± 0.021
Oncorhynchus tschawytscha	> 30 cm	0.30	20	37.74%	5.607	259.027	15.318 ± 5.400	3.078	429.275	26.632 ± 9.288

Table 21

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 6 (number of trawl stations 49)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	15	30.61%	7.573	761.146	43.885 ± 19.290	37.484	3262.054	158.379 ± 76.271
Oncorhynchus nerka	> 30 cm	0.30	1	2.04%	4.730	4.730	0.097 ± 0.098	13.528	13.528	0.276 ± 0.279
Oncorhynchus sp.	> 30 cm	0.30	1	2.04%	41.143	41.143	0.840 ± 0.848	205.713	205.713	4.198 ± 4.242
Oncorhynchus tschawytscha	> 30 cm	0.30	6	12.24%	4.730	82.285	4.297 ± 2.182	13.035	740.566	28.742 ± 17.057

Table 22

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 7 (number of trawl stations 44)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	4.55%	1.519	18.174	0.448 ± 0.418	0.084	1.681	0.040 ± 0.039
Oncorhynchus gorbuscha	> 30 cm	0.30	1	2.27%	12.424	12.424	0.282 ± 0.286	15.307	15.307	0.348 ± 0.352
Oncorhynchus keta	≤ 30 cm	0.40	3	6.82%	17.824	152.177	4.482 ± 3.552	1.462	4.540	0.183 ± 0.117
Oncorhynchus keta	> 30 cm	0.30	21	47.73%	7.501	4112.458	204.836 ± 101.172	15.745	2664.264	220.897 ± 79.008
Oncorhynchus kisutch	> 30 cm	0.30	2	4.55%	11.447	26.635	0.865 ± 0.661	16.014	186.445	4.601 ± 4.294
Oncorhynchus nerka	≤ 30 cm	0.40	5	11.36%	8.002	226.817	10.384 ± 6.803	1.584	39.391	1.814 ± 1.174
Oncorhynchus nerka	> 30 cm	0.30	13	29.55%	10.345	559.095	35.831 ± 17.704	15.249	412.240	30.482 ± 13.880
Oncorhynchus tschawytscha	≤ 30 cm	0.40	3	6.82%	9.073	17.824	0.910 ± 0.539	1.461	3.244	0.172 ± 0.103
Oncorhynchus tschawytscha	> 30 cm	0.30	12	27.27%	6.268	148.809	11.504 ± 4.815	11.057	179.919	20.808 ± 7.114

Table 23

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 8 (number of trawl stations 150)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	39	26.00%	8.189	7033.630	94.299 ± 49.404	0.803	511.437	9.438 ± 4.022
Oncorhynchus gorbuscha	> 30 cm	0.30	18	12.00%	6.686	555.346	15.539 ± 5.488	6.352	736.389	20.613 ± 7.415
Oncorhynchus keta	≤ 30 cm	0.40	10	6.67%	6.909	521.703	4.456 ± 3.510	0.492	65.213	0.534 ± 0.438
Oncorhynchus keta	> 30 cm	0.30	127	84.67%	7.023	14403.514	1159.681 ± 132.231	6.531	8179.984	810.901 ± 82.068
Oncorhynchus kisutch	≤ 30 cm	0.40	14	9.33%	6.248	33.455	1.133 ± 0.347	1.762	7.661	0.296 ± 0.088
Oncorhynchus kisutch	> 30 cm	0.30	26	17.33%	11.370	339.729	9.579 ± 3.087	4.668	123.989	5.333 ± 1.361
Oncorhynchus nerka	≤ 30 cm	0.40	23	15.33%	6.977	194.469	5.163 ± 1.747	0.849	32.202	1.010 ± 0.331
Oncorhynchus nerka	> 30 cm	0.30	122	81.33%	8.708	2610.946	241.932 ± 31.430	9.423	1928.512	222.016 ± 28.064
Oncorhynchus tschawytscha	≤ 30 cm	0.40	25	16.67%	6.083	57.695	3.302 ± 0.797	0.311	14.567	0.739 ± 0.192
Oncorhynchus tschawytscha	> 30 cm	0.30	103	68.67%	7.615	899.419	52.601 ± 9.058	5.021	933.711	65.198 ± 10.516

Table 24

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 9 (number of trawl stations 60)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	1.67%	221.992	221.992	3.700 ± 3.731	28.113	28.113	0.469 ± 0.473
Oncorhynchus gorbuscha	> 30 cm	0.30	3	5.00%	6.631	71.365	1.521 ± 1.219	6.763	96.831	2.007 ± 1.649
Oncorhynchus keta	≤ 30 cm	0.40	4	6.67%	7.059	310.789	6.274 ± 5.252	1.024	25.334	0.515 ± 0.428
Oncorhynchus keta	> 30 cm	0.30	23	38.33%	5.629	3018.513	84.500 ± 50.909	12.518	1849.622	98.665 ± 34.395
Oncorhynchus kisutch	≤ 30 cm	0.40	2	3.33%	4.510	195.353	3.331 ± 3.283	0.586	61.669	1.038 ± 1.036
Oncorhynchus kisutch	> 30 cm	0.30	1	1.67%	6.631	6.631	0.111 ± 0.111	18.102	18.102	0.302 ± 0.304
Oncorhynchus nerka	≤ 30 cm	0.40	2	3.33%	246.814	639.338	14.769 ± 11.453	48.018	109.975	2.633 ± 2.004
Oncorhynchus nerka	> 30 cm	0.30	8	13.33%	26.523	1066.692	38.316 ± 21.017	23.775	1222.032	34.173 ± 21.485
Oncorhynchus tschawytscha	≤ 30 cm	0.40	9	15.00%	4.510	150.955	7.051 ± 3.048	0.361	32.864	1.389 ± 0.640
Oncorhynchus tschawytscha	> 30 cm	0.30	6	10.00%	4.120	40.048	1.726 ± 0.913	32.509	95.724	5.521 ± 2.338

Table 25

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 10 (number of trawl stations 112)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	3	2.68%	6.624	1087.355	16.473 ± 11.801	0.318	63.062	1.061 ± 0.750
Oncorhynchus gorbuscha	> 30 cm	0.30	7	6.25%	8.584	182.889	2.998 ± 1.761	7.554	240.991	3.924 ± 2.336
Oncorhynchus keta	≤ 30 cm	0.40	10	8.93%	7.983	1042.049	18.767 ± 10.209	0.136	62.319	1.393 ± 0.696
Oncorhynchus keta	> 30 cm	0.30	23	20.54%	6.622	1001.261	20.301 ± 9.686	18.530	3615.664	66.317 ± 34.282
Oncorhynchus kisutch	≤ 30 cm	0.40	3	2.68%	4.850	18.564	0.328 ± 0.208	0.631	2.192	0.045 ± 0.028
Oncorhynchus nerka	≤ 30 cm	0.40	10	8.93%	4.069	354.068	7.567 ± 3.869	0.185	34.340	0.727 ± 0.374
Oncorhynchus nerka	> 30 cm	0.30	1	0.89%	13.726	13.726	0.123 ± 0.123	11.461	11.461	0.102 ± 0.103
Oncorhynchus tschawytscha	≤ 30 cm	0.40	16	14.29%	4.500	621.799	25.193 ± 8.971	0.468	69.168	3.000 ± 1.036
Oncorhynchus tschawytscha	> 30 cm	0.30	8	7.14%	6.618	85.147	1.300 ± 0.789	3.849	102.586	3.852 ± 1.588

Table 26

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 11 (number of trawl stations 72)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	2.78%	12.820	20.476	0.462 ± 0.336	1.154	1.577	0.038 ± 0.027
Oncorhynchus gorbuscha	> 30 cm	0.30	14	19.44%	7.443	757.618	35.966 ± 16.038	8.411	925.513	43.955 ± 19.682
Oncorhynchus keta	≤ 30 cm	0.40	5	6.94%	4.286	1064.176	18.814 ± 15.287	0.407	91.635	1.562 ± 1.305
Oncorhynchus keta	> 30 cm	0.30	19	26.39%	5.870	331.977	12.314 ± 4.940	14.383	209.822	24.884 ± 6.161
Oncorhynchus kisutch	≤ 30 cm	0.40	2	2.78%	4.286	13.358	0.245 ± 0.195	0.600	2.137	0.038 ± 0.031
Oncorhynchus nerka	≤ 30 cm	0.40	8	11.11%	5.582	1821.122	48.012 ± 31.299	1.228	147.827	4.342 ± 2.729
Oncorhynchus nerka	> 30 cm	0.30	5	6.94%	6.832	143.463	2.497 ± 2.017	2.828	74.874	1.519 ± 1.093
Oncorhynchus tschawytscha	≤ 30 cm	0.40	8	11.11%	12.858	537.432	15.892 ± 8.819	1.776	161.230	3.998 ± 2.520
Oncorhynchus tschawytscha	> 30 cm	0.30	6	8.33%	6.832	53.038	1.569 ± 0.833	6.960	182.163	5.917 ± 3.018

Table 27

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-2004. Region # 12 (number of trawl stations 291)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	74	25.43%	7.899	47780.333	458.132 ± 173.499	0.790	2943.644	39.411 ± 11.658
Oncorhynchus gorbuscha	> 30 cm	0.30	113	38.83%	6.477	3107.223	79.417 ± 16.035	6.991	3305.500	90.807 ± 17.999
Oncorhynchus keta	≤ 30 cm	0.40	51	17.53%	8.508	3354.861	49.166 ± 16.511	0.441	371.184	4.647 ± 1.619
Oncorhynchus keta	> 30 cm	0.30	239	82.13%	7.048	2965.881	268.262 ± 25.948	3.714	3568.412	309.489 ± 25.102
Oncorhynchus kisutch	≤ 30 cm	0.40	38	13.06%	5.846	295.708	5.275 ± 1.372	1.402	85.920	1.406 ± 0.381
Oncorhynchus kisutch	> 30 cm	0.30	17	5.84%	7.683	181.506	1.676 ± 0.704	3.254	66.533	1.366 ± 0.419
Oncorhynchus masou	≤ 30 cm	0.40	1	0.34%	5.898	5.898	0.020 ± 0.020	0.624	0.624	0.002 ± 0.002
Oncorhynchus nerka	≤ 30 cm	0.40	44	15.12%	5.452	926.310	13.879 ± 4.351	0.353	122.937	2.007 ± 0.598
Oncorhynchus nerka	> 30 cm	0.30	207	71.13%	6.575	2026.905	158.872 ± 16.584	2.971	2870.347	139.180 ± 15.879
Oncorhynchus tschawytscha	≤ 30 cm	0.40	77	26.46%	5.828	335.273	13.508 ± 2.228	0.516	46.252	2.166 ± 0.335
Oncorhynchus tschawytscha	> 30 cm	0.30	84	28.87%	4.609	107.854	5.289 ± 0.741	3.412	239.340	11.674 ± 1.656

Table 28

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 1 (number of trawl stations 36)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	20	55.56%	5.612	812.709	91.448 ± 35.122	15.462	3215.313	346.134 ± 129.147
Oncorhynchus nerka	> 30 cm	0.30	1	2.78%	6.754	6.754	0.188 ± 0.190	7.767	7.767	0.216 ± 0.219
Oncorhynchus tschawytscha	> 30 cm	0.30	4	11.11%	5.856	31.166	1.514 ± 0.939	26.093	186.996	8.744 ± 5.642

Table 29

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 2 (number of trawl stations 41)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	2.44%	27.078	27.078	0.660 ± 0.669	0.821	0.821	0.020 ± 0.020
Oncorhynchus keta	> 30 cm	0.30	23	56.10%	6.028	293.478	59.018 ± 14.573	21.098	1467.392	214.917 ± 55.688
Oncorhynchus kisutch	> 30 cm	0.30	1	2.44%	12.515	12.515	0.305 ± 0.309	53.816	53.816	1.313 ± 1.329
Oncorhynchus nerka	≤ 30 cm	0.40	2	4.88%	9.026	9.387	0.449 ± 0.318	0.375	0.866	0.030 ± 0.023
Oncorhynchus nerka	> 30 cm	0.30	3	7.32%	6.586	37.546	1.276 ± 0.953	7.573	24.280	1.096 ± 0.693
Oncorhynchus tschawytscha	> 30 cm	0.30	5	12.20%	6.429	156.451	8.914 ± 4.841	8.358	234.783	17.387 ± 8.953

Table 30

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 3 (number of trawl stations 62)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	1	1.61%	14.736	14.736	0.238 ± 0.240	17.315	17.315	0.279 ± 0.282
Oncorhynchus keta	≤ 30 cm	0.40	1	1.61%	17.576	17.576	0.283 ± 0.286	0.624	0.624	0.010 ± 0.010
Oncorhynchus keta	> 30 cm	0.30	20	32.26%	7.438	4200.558	137.517 ± 75.357	22.711	6723.282	254.677 ± 126.420
Oncorhynchus kisutch	> 30 cm	0.30	1	1.61%	7.120	7.120	0.115 ± 0.116	17.087	17.087	0.276 ± 0.278
Oncorhynchus nerka	≤ 30 cm	0.40	1	1.61%	6.580	6.580	0.106 ± 0.107	0.276	0.276	0.004 ± 0.004
Oncorhynchus nerka	> 30 cm	0.30	8	12.90%	6.616	372.527	13.982 ± 8.051	4.387	224.218	9.869 ± 5.328
Oncorhynchus tschawytscha	> 30 cm	0.30	7	11.29%	3.467	140.611	4.248 ± 2.534	3.467	100.384	4.269 ± 2.141

Table 31

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 4 (number of trawl stations 46)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	2.17%	18.665	18.665	0.406 ± 0.410	0.653	0.653	0.014 ± 0.014
Oncorhynchus keta	> 30 cm	0.30	15	32.61%	5.620	7817.657	195.753 ± 171.873	12.911	20254.837	489.675 ± 444.837
Oncorhynchus nerka	≤ 30 cm	0.40	2	4.35%	8.885	9.332	0.396 ± 0.280	0.700	0.906	0.035 ± 0.025
Oncorhynchus nerka	> 30 cm	0.30	4	8.70%	6.911	61.271	2.329 ± 1.476	14.443	42.387	2.108 ± 1.135
Oncorhynchus tschawytscha	> 30 cm	0.30	5	10.87%	13.262	122.543	6.000 ± 3.411	10.664	109.541	6.141 ± 3.319

Table 32

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 5 (number of trawl stations 104)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	5	4.81%	10.595	59.072	1.219 ± 0.676	15.321	70.453	1.741 ± 0.921
Oncorhynchus keta	> 30 cm	0.30	23	22.12%	2.007	8713.823	316.733 ± 105.053	5.017	8875.191	414.697 ± 121.285
Oncorhynchus kisutch	> 30 cm	0.30	3	2.88%	7.535	12.183	0.300 ± 0.176	9.043	29.734	0.620 ± 0.387
Oncorhynchus nerka	≤ 30 cm	0.40	3	2.88%	8.447	391.438	4.278 ± 3.803	0.321	14.317	0.168 ± 0.141
Oncorhynchus nerka	> 30 cm	0.30	14	13.46%	9.284	2644.195	36.290 ± 25.857	5.725	1777.548	24.852 ± 17.413
Oncorhynchus tschawytscha	> 30 cm	0.30	13	12.50%	1.997	259.027	6.446 ± 2.815	1.798	429.275	9.714 ± 4.661

Table 33

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 6 (number of trawl stations 18)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	7	38.89%	7.573	278.081	26.700 ± 16.249	37.484	677.648	72.777 ± 40.146
Oncorhynchus tschawytscha	> 30 cm	0.30	2	11.11%	8.690	57.016	3.650 ± 3.268	13.035	344.759	19.877 ± 19.679

Table 34

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 7 (number of trawl stations 92)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	1	1.09%	12.424	12.424	0.135 ± 0.136	15.307	15.307	0.166 ± 0.167
Oncorhynchus keta	> 30 cm	0.30	16	17.39%	5.807	4112.458	89.313 ± 48.833	5.807	2664.264	98.657 ± 39.008
Oncorhynchus kisutch	> 30 cm	0.30	1	1.09%	11.447	11.447	0.124 ± 0.125	16.014	16.014	0.174 ± 0.175
Oncorhynchus nerka	> 30 cm	0.30	9	9.78%	10.345	559.095	8.573 ± 6.165	10.812	412.240	6.986 ± 4.586
Oncorhynchus tschawytscha	> 30 cm	0.30	10	10.87%	3.794	148.809	5.075 ± 2.348	3.826	171.479	7.979 ± 3.068

Table 35

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 8 (number of trawl stations 170)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	1.18%	9.464	7033.630	41.430 ± 41.496	0.861	511.437	3.014 ± 3.017
Oncorhynchus gorbuscha	> 30 cm	0.30	16	9.41%	6.686	555.346	13.558 ± 4.855	6.352	736.389	17.996 ± 6.559
Oncorhynchus keta	> 30 cm	0.30	96	56.47%	6.565	14403.514	710.813 ± 116.611	2.954	8179.984	515.103 ± 74.002
Oncorhynchus kisutch	≤ 30 cm	0.40	5	2.94%	8.382	18.027	0.322 ± 0.151	2.170	6.201	0.099 ± 0.048
Oncorhynchus kisutch	> 30 cm	0.30	14	8.24%	11.370	23.414	1.093 ± 0.289	4.668	61.233	1.787 ± 0.641
Oncorhynchus nerka	≤ 30 cm	0.40	3	1.76%	9.116	11.185	0.174 ± 0.101	1.048	1.962	0.028 ± 0.016
Oncorhynchus nerka	> 30 cm	0.30	74	43.53%	8.708	2610.946	120.057 ± 23.000	8.520	1928.512	108.957 ± 20.852
Oncorhynchus tschawytscha	> 30 cm	0.30	78	45.88%	5.496	899.419	35.009 ± 7.758	5.230	933.711	41.637 ± 8.754

Table 36

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 9 (number of trawl stations 53)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	3	5.66%	6.631	71.365	1.722 ± 1.381	6.763	96.831	2.272 ± 1.868
Oncorhynchus keta	> 30 cm	0.30	9	16.98%	40.990	225.990	16.692 ± 6.000	74.874	317.651	32.526 ± 11.170
Oncorhynchus kisutch	> 30 cm	0.30	1	1.89%	6.631	6.631	0.125 ± 0.126	18.102	18.102	0.342 ± 0.345
Oncorhynchus nerka	> 30 cm	0.30	5	9.43%	26.523	559.028	20.662 ± 12.983	23.775	333.371	13.227 ± 7.840
Oncorhynchus tschawytscha	> 30 cm	0.30	3	5.66%	4.120	8.071	0.348 ± 0.206	32.509	59.735	2.867 ± 1.694

Table 37

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 10 (number of trawl stations 40)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	7	17.50%	8.584	182.889	8.393 ± 4.891	7.554	240.991	10.987 ± 6.493
Oncorhynchus keta	> 30 cm	0.30	9	22.50%	6.863	93.654	5.374 ± 2.636	18.530	284.643	17.720 ± 8.195
Oncorhynchus nerka	> 30 cm	0.30	1	2.50%	13.726	13.726	0.343 ± 0.348	11.461	11.461	0.287 ± 0.290
Oncorhynchus tschawytscha	> 30 cm	0.30	4	10.00%	6.618	8.396	0.718 ± 0.351	3.849	102.586	5.448 ± 3.319

Table 38

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 11 (number of trawl stations 46)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	14	30.43%	7.443	757.618	56.294 ± 24.785	8.411	925.513	68.798 ± 30.422
Oncorhynchus keta	> 30 cm	0.30	14	30.43%	6.690	68.316	9.468 ± 2.661	14.383	191.296	29.761 ± 8.208
Oncorhynchus nerka	≤ 30 cm	0.40	1	2.17%	5.582	5.582	0.121 ± 0.123	1.228	1.228	0.027 ± 0.027
Oncorhynchus nerka	> 30 cm	0.30	4	8.70%	6.832	143.463	3.741 ± 3.162	2.828	74.874	2.270 ± 1.711
Oncorhynchus tschawytscha	> 30 cm	0.30	4	8.70%	6.832	21.097	0.958 ± 0.536	6.960	75.731	4.542 ± 2.528

Table 39

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 12 (number of trawl stations 225)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	6	2.67%	17.136	47780.333	225.519 ± 213.032	1.002	2943.644	13.501 ± 13.114
Oncorhynchus gorbuscha	> 30 cm	0.30	114	50.67%	6.477	3107.223	102.742 ± 20.498	6.991	3305.500	117.479 ± 22.998
Oncorhynchus keta	≤ 30 cm	0.40	6	2.67%	35.698	1071.012	7.643 ± 4.985	1.660	46.165	0.379 ± 0.225
Oncorhynchus keta	> 30 cm	0.30	169	75.11%	5.291	2416.843	217.715 ± 23.751	7.295	3568.412	292.974 ± 27.369
Oncorhynchus kisutch	≤ 30 cm	0.40	8	3.56%	8.886	295.708	2.237 ± 1.389	1.928	85.920	0.635 ± 0.400
Oncorhynchus kisutch	> 30 cm	0.30	11	4.89%	7.683	57.119	0.862 ± 0.333	4.620	54.788	1.271 ± 0.446
Oncorhynchus nerka	≤ 30 cm	0.40	11	4.89%	5.452	282.778	3.840 ± 1.814	0.353	69.962	0.801 ± 0.397
Oncorhynchus nerka	> 30 cm	0.30	121	53.78%	4.398	2026.905	105.546 ± 15.961	2.971	2870.347	94.136 ± 16.259
Oncorhynchus tschawytscha	≤ 30 cm	0.40	6	2.67%	8.568	335.273	2.370 ± 1.582	0.891	36.871	0.292 ± 0.180
Oncorhynchus tschawytscha	> 30 cm	0.30	59	26.22%	2.604	107.854	4.741 ± 0.817	2.604	239.340	11.115 ± 1.889

Table 40

Salmon abundance in epipelagic water layer in summer. The data of the years 1982-2004. Region # 13 (number of trawl stations 19)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	2	10.53%	6.602	6.988	0.715 ± 0.505	6.140	6.638	0.673 ± 0.475
Oncorhynchus keta	> 30 cm	0.30	8	42.11%	6.988	15.311	4.811 ± 1.472	9.433	55.172	9.566 ± 3.559
Oncorhynchus kisutch	> 30 cm	0.30	1	5.26%	2.759	2.759	0.145 ± 0.149	3.586	3.586	0.189 ± 0.194
Oncorhynchus tschawytscha	> 30 cm	0.30	1	5.26%	7.439	7.439	0.392 ± 0.402	40.172	40.172	2.114 ± 2.172

Table 41

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 1 (number of trawl stations 36)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	20	55.56%	5.612	812.709	91.448 ± 35.122	15.462	3215.313	346.134 ± 129.147
Oncorhynchus nerka	> 30 cm	0.30	1	2.78%	6.754	6.754	0.188 ± 0.190	7.767	7.767	0.216 ± 0.219
Oncorhynchus tschawytscha	> 30 cm	0.30	4	11.11%	5.856	31.166	1.514 ± 0.939	26.093	186.996	8.744 ± 5.642

Table 42

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 2 (number of trawl stations 37)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	2.70%	27.078	27.078	0.732 ± 0.742	0.821	0.821	0.022 ± 0.023
Oncorhynchus keta	> 30 cm	0.30	23	62.16%	6.028	293.478	65.398 ± 15.820	21.098	1467.392	238.152 ± 60.586
Oncorhynchus kisutch	> 30 cm	0.30	1	2.70%	12.515	12.515	0.338 ± 0.343	53.816	53.816	1.454 ± 1.475
Oncorhynchus nerka	≤ 30 cm	0.40	2	5.41%	9.026	9.387	0.498 ± 0.352	0.375	0.866	0.034 ± 0.026
Oncorhynchus nerka	> 30 cm	0.30	2	5.41%	6.586	37.546	1.193 ± 1.040	7.573	24.280	0.861 ± 0.691
Oncorhynchus tschawytscha	> 30 cm	0.30	5	13.51%	6.429	156.451	9.878 ± 5.353	8.358	234.783	19.266 ± 9.895

Table 43

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 3 (number of trawl stations 37)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	1	2.70%	14.736	14.736	0.398 ± 0.404	17.315	17.315	0.468 ± 0.474
Oncorhynchus keta	≤ 30 cm	0.40	1	2.70%	17.576	17.576	0.475 ± 0.482	0.624	0.624	0.017 ± 0.017
Oncorhynchus keta	> 30 cm	0.30	14	37.84%	7.438	4200.558	215.570 ± 125.798	22.711	6723.282	398.000 ± 210.354
Oncorhynchus kisutch	> 30 cm	0.30	1	2.70%	7.120	7.120	0.192 ± 0.195	17.087	17.087	0.462 ± 0.468
Oncorhynchus nerka	≤ 30 cm	0.40	1	2.70%	6.580	6.580	0.178 ± 0.180	0.276	0.276	0.007 ± 0.008
Oncorhynchus nerka	> 30 cm	0.30	6	16.22%	7.592	372.527	19.983 ± 13.143	4.387	224.218	13.344 ± 8.433
Oncorhynchus tschawytscha	> 30 cm	0.30	6	16.22%	3.467	140.611	6.936 ± 4.231	3.467	100.384	7.058 ± 3.549

Table 44

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 4 (number of trawl stations 32)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	3.13%	18.665	18.665	0.583 ± 0.593	0.653	0.653	0.020 ± 0.021
Oncorhynchus keta	> 30 cm	0.30	13	40.63%	5.869	7817.657	279.824 ± 247.934	12.911	20254.837	700.249 ± 641.957
Oncorhynchus nerka	≤ 30 cm	0.40	2	6.25%	8.885	9.332	0.569 ± 0.402	0.700	0.906	0.050 ± 0.036
Oncorhynchus nerka	> 30 cm	0.30	4	12.50%	6.911	61.271	3.348 ± 2.116	14.443	42.387	3.031 ± 1.620
Oncorhynchus tschawytscha	> 30 cm	0.30	5	15.63%	13.262	122.543	8.625 ± 4.875	10.664	109.541	8.828 ± 4.735

Table 45

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 5 (number of trawl stations 23)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	5	21.74%	10.595	59.072	5.513 ± 2.979	15.321	70.453	7.873 ± 4.036
Oncorhynchus keta	> 30 cm	0.30	16	69.57%	7.640	8713.823	1413.863 ± 410.277	19.864	8875.191	1860.346 ± 441.427
Oncorhynchus kisutch	> 30 cm	0.30	3	13.04%	7.535	12.183	1.355 ± 0.780	9.043	29.734	2.804 ± 1.728
Oncorhynchus nerka	≤ 30 cm	0.40	3	13.04%	8.447	391.438	19.346 ± 17.411	0.321	14.317	0.761 ± 0.643
Oncorhynchus nerka	> 30 cm	0.30	13	56.52%	9.284	2644.195	163.188 ± 116.926	5.725	1777.548	111.947 ± 78.636
Oncorhynchus tschawytscha	> 30 cm	0.30	11	47.83%	9.284	259.027	27.249 ± 11.988	8.634	429.275	42.224 ± 20.220

Table 46

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 6 (number of trawl stations 17)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	7	41.18%	7.573	278.081	28.271 ± 17.179	37.484	677.648	77.059 ± 42.397
Oncorhynchus tschawytscha	> 30 cm	0.30	2	11.76%	8.690	57.016	3.865 ± 3.464	13.035	344.759	21.047 ± 20.870

Table 47

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 7 (number of trawl stations 21)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	1	4.76%	12.424	12.424	0.592 ± 0.606	15.307	15.307	0.729 ± 0.747
Oncorhynchus keta	> 30 cm	0.30	9	42.86%	14.502	4112.458	370.995 ± 209.367	21.028	2664.264	397.873 ± 158.546
Oncorhynchus kisutch	> 30 cm	0.30	1	4.76%	11.447	11.447	0.545 ± 0.559	16.014	16.014	0.763 ± 0.781
Oncorhynchus nerka	> 30 cm	0.30	7	33.33%	10.345	559.095	34.213 ± 27.080	15.249	412.240	27.503 ± 19.983
Oncorhynchus tschawytscha	> 30 cm	0.30	6	28.57%	8.006	148.809	20.611 ± 9.844	38.436	171.479	29.090 ± 12.119

Table 48

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 8 (number of trawl stations 73)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	2.74%	9.464	7033.630	96.481 ± 97.016	0.861	511.437	7.018 ± 7.054
Oncorhynchus gorbuscha	> 30 cm	0.30	16	21.92%	6.686	555.346	31.574 ± 11.039	6.352	736.389	41.908 ± 14.930
Oncorhynchus keta	> 30 cm	0.30	64	87.67%	14.202	14403.514	1518.189 ± 234.255	42.605	8179.984	1112.550 ± 142.166
Oncorhynchus kisutch	≤ 30 cm	0.40	5	6.85%	8.382	18.027	0.751 ± 0.347	2.170	6.201	0.230 ± 0.111
Oncorhynchus kisutch	> 30 cm	0.30	14	19.18%	11.370	23.414	2.545 ± 0.638	4.668	61.233	4.161 ± 1.456
Oncorhynchus nerka	≤ 30 cm	0.40	3	4.11%	9.116	11.185	0.405 ± 0.233	1.048	1.962	0.064 ± 0.038
Oncorhynchus nerka	> 30 cm	0.30	57	78.08%	8.708	2610.946	271.244 ± 48.378	16.390	1928.512	245.119 ± 43.866
Oncorhynchus tschawytscha	> 30 cm	0.30	57	78.08%	7.774	899.419	72.154 ± 17.007	5.230	933.711	86.792 ± 19.075

Table 49

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 9 (number of trawl stations 30)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	3	10.00%	6.631	71.365	3.042 ± 2.447	6.763	96.831	4.015 ± 3.311
Oncorhynchus keta	> 30 cm	0.30	9	30.00%	40.990	225.990	29.489 ± 10.114	74.874	317.651	57.462 ± 18.710
Oncorhynchus kisutch	> 30 cm	0.30	1	3.33%	6.631	6.631	0.221 ± 0.225	18.102	18.102	0.603 ± 0.614
Oncorhynchus nerka	> 30 cm	0.30	5	16.67%	26.523	559.028	36.504 ± 22.833	23.775	333.371	23.367 ± 13.755
Oncorhynchus tschawytscha	> 30 cm	0.30	3	10.00%	4.120	8.071	0.615 ± 0.361	32.509	59.735	5.066 ± 2.971

Table 50

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 10 (number of trawl stations 35)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	7	20.00%	8.584	182.889	9.592 ± 5.580	7.554	240.991	12.556 ± 7.407
Oncorhynchus keta	> 30 cm	0.30	9	25.71%	6.863	93.654	6.142 ± 3.000	18.530	284.643	20.252 ± 9.317
Oncorhynchus nerka	> 30 cm	0.30	1	2.86%	13.726	13.726	0.392 ± 0.398	11.461	11.461	0.327 ± 0.332
Oncorhynchus tschawytscha	> 30 cm	0.30	4	11.43%	6.618	8.396	0.821 ± 0.400	3.849	102.586	6.227 ± 3.787

Table 51

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 11 (number of trawl stations 35)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	14	40.00%	7.443	757.618	73.986 ± 32.194	8.411	925.513	90.421 ± 39.523
Oncorhynchus keta	> 30 cm	0.30	14	40.00%	6.690	68.316	12.444 ± 3.359	14.383	191.296	39.114 ± 10.342
Oncorhynchus nerka	≤ 30 cm	0.40	1	2.86%	5.582	5.582	0.159 ± 0.162	1.228	1.228	0.035 ± 0.036
Oncorhynchus nerka	> 30 cm	0.30	4	11.43%	6.832	143.463	4.917 ± 4.164	2.828	74.874	2.983 ± 2.250
Oncorhynchus tschawytscha	> 30 cm	0.30	3	8.57%	6.832	8.899	0.657 ± 0.376	6.960	75.731	4.406 ± 2.973

Table 52

Salmon abundance in upper epipelagic water layer in summer. The data of the years 1982-2004. Region # 12 (number of trawl stations 187)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	6	3.21%	17.136	47780.333	271.346 ± 256.424	1.002	2943.644	16.244 ± 15.785
Oncorhynchus gorbuscha	> 30 cm	0.30	113	60.43%	6.477	3107.223	123.585 ± 24.403	6.991	3305.500	141.309 ± 27.366
Oncorhynchus keta	≤ 30 cm	0.40	6	3.21%	35.698	1071.012	9.196 ± 5.997	1.660	46.165	0.457 ± 0.271
Oncorhynchus keta	> 30 cm	0.30	158	84.49%	7.048	2416.843	254.507 ± 27.685	7.295	3568.412	346.440 ± 31.470
Oncorhynchus kisutch	≤ 30 cm	0.40	8	4.28%	8.886	295.708	2.691 ± 1.671	1.928	85.920	0.764 ± 0.481
Oncorhynchus kisutch	> 30 cm	0.30	11	5.88%	7.683	57.119	1.037 ± 0.400	4.620	54.788	1.529 ± 0.535
Oncorhynchus nerka	≤ 30 cm	0.40	11	5.88%	5.452	282.778	4.621 ± 2.180	0.353	69.962	0.964 ± 0.477
Oncorhynchus nerka	> 30 cm	0.30	111	59.36%	6.575	2026.905	123.246 ± 18.897	2.971	2870.347	109.120 ± 19.309
Oncorhynchus tschawytscha	≤ 30 cm	0.40	6	3.21%	8.568	335.273	2.851 ± 1.903	0.891	36.871	0.352 ± 0.217
Oncorhynchus tschawytscha	> 30 cm	0.30	53	28.34%	4.609	107.854	5.147 ± 0.941	3.412	239.340	12.712 ± 2.237

Table 53

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 1 (number of trawl stations 19)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	10.53%	7.217	9.292	0.869 ± 0.619	0.446	0.837	0.068 ± 0.050
Oncorhynchus keta	≤ 30 cm	0.40	2	10.53%	27.248	28.868	2.953 ± 2.086	2.025	2.685	0.248 ± 0.177
Oncorhynchus keta	> 30 cm	0.30	2	10.53%	12.110	32.481	2.347 ± 1.840	96.144	100.757	10.363 ± 7.319
Oncorhynchus nerka	≤ 30 cm	0.40	2	10.53%	18.165	64.952	4.375 ± 3.594	1.953	7.368	0.491 ± 0.406
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	5.26%	9.083	9.083	0.478 ± 0.491	1.780	1.780	0.094 ± 0.096
Oncorhynchus tschawytscha	> 30 cm	0.30	5	26.32%	9.623	24.780	4.208 ± 1.863	22.839	319.981	37.904 ± 21.208

Table 54

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 2 (number of trawl stations 45)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	6	13.33%	7.686	895.451	27.549 ± 20.452	42.353	3233.572	98.445 ± 73.777
Oncorhynchus tschawytscha	> 30 cm	0.30	9	20.00%	6.389	62.850	4.464 ± 1.748	23.869	300.094	22.397 ± 8.639

Table 55

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 3 (number of trawl stations 73)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	1.37%	9.008	9.008	0.123 ± 0.124	0.423	0.423	0.006 ± 0.006
Oncorhynchus keta	≤ 30 cm	0.40	5	6.85%	29.511	315.263	6.892 ± 4.522	2.671	24.870	0.615 ± 0.370
Oncorhynchus keta	> 30 cm	0.30	11	15.07%	8.580	49.675	3.124 ± 1.036	23.071	107.629	7.903 ± 2.545
Oncorhynchus nerka	≤ 30 cm	0.40	6	8.22%	9.837	151.822	3.496 ± 2.186	1.426	28.762	0.605 ± 0.410
Oncorhynchus nerka	> 30 cm	0.30	1	1.37%	11.246	11.246	0.154 ± 0.155	10.403	10.403	0.143 ± 0.143
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	2.74%	9.294	9.837	0.262 ± 0.185	0.911	2.990	0.053 ± 0.043
Oncorhynchus tschawytscha	> 30 cm	0.30	9	12.33%	10.460	38.790	2.044 ± 0.742	4.848	162.917	5.477 ± 2.655

Table 56

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 4 (number of trawl stations 50)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	4.00%	8.663	91.709	2.007 ± 1.857	0.754	8.584	0.187 ± 0.174
Oncorhynchus keta	≤ 30 cm	0.40	3	6.00%	9.191	752.014	19.209 ± 15.634	1.011	73.413	1.768 ± 1.504
Oncorhynchus keta	> 30 cm	0.30	10	20.00%	7.084	396.767	17.358 ± 9.884	25.646	801.020	37.273 ± 20.080
Oncorhynchus nerka	≤ 30 cm	0.40	4	8.00%	8.521	91.709	2.719 ± 1.909	1.065	14.398	0.393 ± 0.296
Oncorhynchus tschawytscha	> 30 cm	0.30	7	14.00%	9.147	87.542	4.518 ± 2.140	6.646	207.890	11.725 ± 5.513

Table 57

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 5 (number of trawl stations 97)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	8	8.25%	7.959	98.796	3.723 ± 1.662	0.440	8.633	0.302 ± 0.140
Oncorhynchus keta	≤ 30 cm	0.40	7	7.22%	8.981	390.159	7.544 ± 4.288	1.356	41.917	0.700 ± 0.446
Oncorhynchus keta	> 30 cm	0.30	20	20.62%	3.408	418.346	10.253 ± 4.649	8.044	737.878	16.539 ± 8.013
Oncorhynchus nerka	≤ 30 cm	0.40	9	9.28%	7.839	151.817	5.421 ± 2.321	0.835	20.638	0.846 ± 0.347
Oncorhynchus nerka	> 30 cm	0.30	10	10.31%	10.612	159.852	3.728 ± 1.817	7.543	359.934	5.987 ± 3.808
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	1.03%	7.741	7.741	0.080 ± 0.080	1.099	1.099	0.011 ± 0.011
Oncorhynchus tschawytscha	> 30 cm	0.30	13	13.40%	5.607	35.925	2.744 ± 0.786	3.078	146.531	8.103 ± 2.651

Table 58

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 6 (number of trawl stations 34)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	8	23.53%	23.650	761.146	49.110 ± 26.772	77.433	3262.054	189.722 ± 108.615
Oncorhynchus nerka	> 30 cm	0.30	1	2.94%	4.730	4.730	0.139 ± 0.141	13.528	13.528	0.398 ± 0.404
Oncorhynchus sp.	> 30 cm	0.30	1	2.94%	41.143	41.143	1.210 ± 1.228	205.713	205.713	6.050 ± 6.141
Oncorhynchus tschawytscha	> 30 cm	0.30	4	11.76%	4.730	82.285	4.260 ± 2.698	26.076	740.566	30.899 ± 22.663

Table 59

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 7 (number of trawl stations 49)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	4.08%	1.519	18.174	0.402 ± 0.375	0.084	1.681	0.036 ± 0.035
Oncorhynchus keta	≤ 30 cm	0.40	3	6.12%	17.824	152.177	4.025 ± 3.188	1.462	4.540	0.164 ± 0.105
Oncorhynchus keta	> 30 cm	0.30	12	24.49%	7.501	371.988	24.937 ± 11.733	15.745	366.172	27.840 ± 10.864
Oncorhynchus kisutch	> 30 cm	0.30	1	2.04%	26.635	26.635	0.544 ± 0.549	186.445	186.445	3.805 ± 3.844
Oncorhynchus nerka	≤ 30 cm	0.40	5	10.20%	8.002	226.817	9.324 ± 6.112	1.584	39.391	1.629 ± 1.055
Oncorhynchus nerka	> 30 cm	0.30	6	12.24%	11.272	483.875	17.512 ± 11.470	21.350	365.423	15.585 ± 9.538
Oncorhynchus tschawytscha	≤ 30 cm	0.40	3	6.12%	9.073	17.824	0.817 ± 0.484	1.461	3.244	0.155 ± 0.093
Oncorhynchus tschawytscha	> 30 cm	0.30	6	12.24%	6.268	20.523	1.497 ± 0.627	11.057	179.919	6.217 ± 3.854

Table 60

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 8 (number of trawl stations 133)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	37	27.82%	8.189	1948.780	53.397 ± 18.040	0.803	274.945	6.792 ± 2.452
Oncorhynchus gorbuscha	> 30 cm	0.30	2	1.50%	12.035	13.971	0.196 ± 0.139	14.222	18.389	0.245 ± 0.175
Oncorhynchus keta	≤ 30 cm	0.40	10	7.52%	8.989	521.703	5.218 ± 3.964	0.492	65.213	0.662 ± 0.497
Oncorhynchus keta	> 30 cm	0.30	80	60.15%	7.023	4749.386	494.929 ± 77.934	6.531	3003.720	321.552 ± 48.031
Oncorhynchus kisutch	≤ 30 cm	0.40	9	6.77%	6.248	33.455	0.865 ± 0.347	1.762	7.661	0.208 ± 0.080
Oncorhynchus kisutch	> 30 cm	0.30	12	9.02%	12.453	339.729	9.407 ± 3.480	5.093	123.989	3.731 ± 1.340
Oncorhynchus nerka	≤ 30 cm	0.40	22	16.54%	7.093	194.469	5.942 ± 1.974	0.567	32.202	1.165 ± 0.374
Oncorhynchus nerka	> 30 cm	0.30	80	60.15%	16.213	2425.735	154.155 ± 30.580	9.423	1777.438	144.587 ± 25.736
Oncorhynchus tschawytscha	≤ 30 cm	0.40	28	21.05%	5.360	57.695	3.917 ± 0.895	0.311	14.567	0.871 ± 0.215
Oncorhynchus tschawytscha	> 30 cm	0.30	60	45.11%	7.615	318.164	25.285 ± 4.565	4.897	471.163	32.545 ± 6.086

Table 61

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 9 (number of trawl stations 64)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	1.56%	221.992	221.992	3.469 ± 3.496	28.113	28.113	0.439 ± 0.443
Oncorhynchus keta	≤ 30 cm	0.40	4	6.25%	7.059	310.789	5.882 ± 4.922	1.024	25.334	0.483 ± 0.401
Oncorhynchus keta	> 30 cm	0.30	18	28.13%	5.629	3018.513	66.887 ± 47.763	12.518	1849.622	68.931 ± 31.812
Oncorhynchus kisutch	≤ 30 cm	0.40	2	3.13%	4.510	195.353	3.123 ± 3.076	0.586	61.669	0.973 ± 0.971
Oncorhynchus nerka	≤ 30 cm	0.40	2	3.13%	246.814	639.338	13.846 ± 10.735	48.018	109.975	2.469 ± 1.879
Oncorhynchus nerka	> 30 cm	0.30	4	6.25%	33.204	1066.692	19.329 ± 16.832	43.055	1222.032	21.756 ± 19.265
Oncorhynchus tschawytscha	≤ 30 cm	0.40	10	15.63%	4.510	150.955	6.713 ± 2.860	0.361	32.864	1.312 ± 0.601
Oncorhynchus tschawytscha	> 30 cm	0.30	6	9.38%	5.998	40.048	1.926 ± 0.908	37.786	95.724	5.892 ± 2.494

Table 62

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 10 (number of trawl stations 66)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	3	4.55%	6.624	1087.355	27.953 ± 20.028	0.318	63.062	1.800 ± 1.272
Oncorhynchus keta	≤ 30 cm	0.40	10	15.15%	7.983	1042.049	31.848 ± 17.246	0.136	62.319	2.363 ± 1.174
Oncorhynchus keta	> 30 cm	0.30	14	21.21%	6.622	1001.261	31.194 ± 16.327	21.191	3615.664	101.798 ± 57.922
Oncorhynchus kisutch	≤ 30 cm	0.40	3	4.55%	4.850	18.564	0.556 ± 0.352	0.631	2.192	0.076 ± 0.048
Oncorhynchus nerka	≤ 30 cm	0.40	10	15.15%	4.069	354.068	12.841 ± 6.527	0.185	34.340	1.234 ± 0.630
Oncorhynchus tschawytscha	≤ 30 cm	0.40	16	24.24%	4.500	621.799	42.752 ± 14.932	0.468	69.168	5.091 ± 1.722
Oncorhynchus tschawytscha	> 30 cm	0.30	4	6.06%	6.891	85.147	1.771 ± 1.327	16.585	83.891	3.235 ± 1.827

Table 63

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 11 (number of trawl stations 71)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	4	5.63%	11.623	52.857	1.377 ± 0.830	1.154	4.757	0.124 ± 0.074
Oncorhynchus keta	≤ 30 cm	0.40	7	9.86%	4.286	1064.176	21.721 ± 15.623	0.407	91.635	1.808 ± 1.333
Oncorhynchus keta	> 30 cm	0.30	10	14.08%	5.870	331.977	9.216 ± 5.071	16.853	209.822	11.070 ± 4.439
Oncorhynchus kisutch	≤ 30 cm	0.40	3	4.23%	4.286	13.358	0.357 ± 0.224	0.600	2.137	0.057 ± 0.036
Oncorhynchus nerka	≤ 30 cm	0.40	7	9.86%	11.070	1821.122	48.609 ± 31.740	1.414	147.827	4.386 ± 2.768
Oncorhynchus nerka	> 30 cm	0.30	2	2.82%	7.676	18.915	0.375 ± 0.288	4.966	35.276	0.567 ± 0.504
Oncorhynchus tschawytscha	≤ 30 cm	0.40	13	18.31%	5.834	537.432	17.520 ± 8.945	0.928	161.230	4.273 ± 2.554
Oncorhynchus tschawytscha	> 30 cm	0.30	6	8.45%	10.540	53.038	2.127 ± 0.998	31.671	216.137	9.177 ± 4.403

Table 64

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 12 (number of trawl stations 269)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	84	31.23%	6.878	9432.606	372.099 ± 71.641	0.481	963.630	35.843 ± 6.789
Oncorhynchus keta	≤ 30 cm	0.40	50	18.59%	8.508	3354.861	47.771 ± 17.412	0.429	371.184	4.781 ± 1.743
Oncorhynchus keta	> 30 cm	0.30	133	49.44%	5.354	2965.881	132.398 ± 22.547	2.784	2436.058	111.138 ± 17.935
Oncorhynchus kisutch	≤ 30 cm	0.40	50	18.59%	3.676	166.646	6.312 ± 1.217	0.772	41.828	1.586 ± 0.312
Oncorhynchus kisutch	> 30 cm	0.30	11	4.09%	7.144	181.506	1.484 ± 0.745	3.254	66.533	0.764 ± 0.334
Oncorhynchus masou	≤ 30 cm	0.40	1	0.37%	5.898	5.898	0.022 ± 0.022	0.624	0.624	0.002 ± 0.002
Oncorhynchus nerka	≤ 30 cm	0.40	37	13.75%	5.923	926.310	13.798 ± 4.650	0.682	122.937	1.784 ± 0.595
Oncorhynchus nerka	> 30 cm	0.30	159	59.11%	4.972	1963.855	116.691 ± 15.491	6.323	3076.169	112.027 ± 16.724
Oncorhynchus tschawytscha	≤ 30 cm	0.40	96	35.69%	3.446	245.288	14.985 ± 2.083	0.516	46.252	2.409 ± 0.335
Oncorhynchus tschawytscha	> 30 cm	0.30	43	15.99%	5.156	89.117	2.865 ± 0.536	3.816	135.028	5.344 ± 1.104

Table 65

Salmon abundance in epipelagic water layer in autumn. The data of the years 1982-2004. Region # 13 (number of trawl stations 57)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	1.75%	38.028	38.028	0.667 ± 0.673	4.563	4.563	0.080 ± 0.081
Oncorhynchus keta	≤ 30 cm	0.40	3	5.26%	8.925	741.544	14.423 ± 13.162	2.508	89.366	1.888 ± 1.601
Oncorhynchus keta	> 30 cm	0.30	21	36.84%	11.106	1477.352	65.899 ± 30.684	8.970	1065.579	52.212 ± 24.086
Oncorhynchus nerka	≤ 30 cm	0.40	5	8.77%	8.925	129.246	3.892 ± 2.421	1.740	26.588	0.742 ± 0.490
Oncorhynchus nerka	> 30 cm	0.30	22	38.60%	8.028	532.391	30.962 ± 10.929	6.244	370.449	26.582 ± 8.123
Oncorhynchus tschawytscha	≤ 30 cm	0.40	6	10.53%	9.122	50.421	2.348 ± 1.089	1.805	7.059	0.405 ± 0.176
Oncorhynchus tschawytscha	> 30 cm	0.30	24	42.11%	11.862	160.194	16.684 ± 3.994	9.845	212.658	25.218 ± 6.094

Table 66

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 1 (number of trawl stations 18)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	11.11%	7.217	9.292	0.917 ± 0.653	0.446	0.837	0.071 ± 0.053
Oncorhynchus keta	≤ 30 cm	0.40	2	11.11%	27.248	28.868	3.118 ± 2.202	2.025	2.685	0.262 ± 0.187
Oncorhynchus keta	> 30 cm	0.30	2	11.11%	12.110	32.481	2.477 ± 1.943	96.144	100.757	10.939 ± 7.724
Oncorhynchus nerka	≤ 30 cm	0.40	2	11.11%	18.165	64.952	4.618 ± 3.796	1.953	7.368	0.518 ± 0.429
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	5.56%	9.083	9.083	0.505 ± 0.519	1.780	1.780	0.099 ± 0.102
Oncorhynchus tschawytscha	> 30 cm	0.30	4	22.22%	9.623	24.780	3.244 ± 1.670	22.839	242.088	22.233 ± 14.616

Table 67

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 2 (number of trawl stations 37)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	6	16.22%	7.686	895.451	33.505 ± 24.883	42.353	3233.572	119.730 ± 89.767
Oncorhynchus tschawytscha	> 30 cm	0.30	8	21.62%	6.389	62.850	4.727 ± 2.024	23.869	168.079	19.129 ± 6.998

Table 68

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 3 (number of trawl stations 43)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	2.33%	9.008	9.008	0.209 ± 0.212	0.423	0.423	0.010 ± 0.010
Oncorhynchus keta	≤ 30 cm	0.40	5	11.63%	29.511	315.263	11.701 ± 7.664	2.671	24.870	1.043 ± 0.625
Oncorhynchus keta	> 30 cm	0.30	11	25.58%	8.580	49.675	5.303 ± 1.695	23.071	107.629	13.417 ± 4.151
Oncorhynchus nerka	≤ 30 cm	0.40	6	13.95%	9.837	151.822	5.934 ± 3.700	1.426	28.762	1.028 ± 0.695
Oncorhynchus nerka	> 30 cm	0.30	1	2.33%	11.246	11.246	0.262 ± 0.265	10.403	10.403	0.242 ± 0.245
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	4.65%	9.294	9.837	0.445 ± 0.315	0.911	2.990	0.091 ± 0.073
Oncorhynchus tschawytscha	> 30 cm	0.30	8	18.60%	10.460	24.020	2.568 ± 0.881	4.848	84.576	5.509 ± 2.485

Table 69

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 4 (number of trawl stations 32)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	6.25%	8.663	91.709	3.137 ± 2.916	0.754	8.584	0.292 ± 0.273
Oncorhynchus keta	≤ 30 cm	0.40	3	9.38%	9.191	752.014	30.014 ± 24.492	1.011	73.413	2.763 ± 2.358
Oncorhynchus keta	> 30 cm	0.30	9	28.13%	7.084	396.767	26.441 ± 15.361	25.646	801.020	56.823 ± 31.145
Oncorhynchus nerka	≤ 30 cm	0.40	4	12.50%	8.521	91.709	4.248 ± 2.982	1.065	14.398	0.614 ± 0.462
Oncorhynchus tschawytscha	> 30 cm	0.30	5	15.63%	9.147	50.034	3.425 ± 1.810	6.646	207.890	11.429 ± 7.300

Table 70

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 5 (number of trawl stations 29)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	8	27.59%	7.959	98.796	12.451 ± 5.333	0.440	8.633	1.010 ± 0.450
Oncorhynchus keta	≤ 30 cm	0.40	7	24.14%	8.981	390.159	25.234 ± 14.128	1.356	41.917	2.341 ± 1.483
Oncorhynchus keta	> 30 cm	0.30	14	48.28%	8.974	418.346	28.635 ± 15.020	9.711	737.878	45.038 ± 25.929
Oncorhynchus nerka	≤ 30 cm	0.40	9	31.03%	7.839	151.817	18.133 ± 7.402	0.835	20.638	2.829 ± 1.099
Oncorhynchus nerka	> 30 cm	0.30	6	20.69%	10.612	50.665	5.428 ± 2.446	7.543	61.855	5.446 ± 2.607
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	3.45%	7.741	7.741	0.267 ± 0.272	1.099	1.099	0.038 ± 0.039
Oncorhynchus tschawytscha	> 30 cm	0.30	9	31.03%	5.607	35.925	6.383 ± 2.107	3.078	117.259	15.184 ± 5.677

Table 71

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 6 (number of trawl stations 31)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	8	25.81%	23.650	761.146	53.863 ± 29.300	77.433	3262.054	208.083 ± 118.924
Oncorhynchus nerka	> 30 cm	0.30	1	3.23%	4.730	4.730	0.153 ± 0.155	13.528	13.528	0.436 ± 0.444
Oncorhynchus sp.	> 30 cm	0.30	1	3.23%	41.143	41.143	1.327 ± 1.349	205.713	205.713	6.636 ± 6.746
Oncorhynchus tschawytscha	> 30 cm	0.30	4	12.90%	4.730	82.285	4.672 ± 2.957	26.076	740.566	33.889 ± 24.859

Table 72

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 7 (number of trawl stations 21)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	9.52%	1.519	18.174	0.938 ± 0.886	0.084	1.681	0.084 ± 0.082
Oncorhynchus keta	≤ 30 cm	0.40	3	14.29%	17.824	152.177	9.391 ± 7.477	1.462	4.540	0.383 ± 0.244
Oncorhynchus keta	> 30 cm	0.30	12	57.14%	7.501	371.988	58.186 ± 26.295	15.745	366.172	64.960 ± 23.522
Oncorhynchus kisutch	> 30 cm	0.30	1	4.76%	26.635	26.635	1.268 ± 1.300	186.445	186.445	8.878 ± 9.098
Oncorhynchus nerka	≤ 30 cm	0.40	5	23.81%	8.002	226.817	21.756 ± 14.176	1.584	39.391	3.802 ± 2.444
Oncorhynchus nerka	> 30 cm	0.30	6	28.57%	11.272	483.875	40.862 ± 26.602	21.350	365.423	36.364 ± 22.007
Oncorhynchus tschawytscha	≤ 30 cm	0.40	3	14.29%	9.073	17.824	1.907 ± 1.114	1.461	3.244	0.361 ± 0.214
Oncorhynchus tschawytscha	> 30 cm	0.30	6	28.57%	6.268	20.523	3.494 ± 1.378	11.057	179.919	14.507 ± 8.901

Table 73

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 8 (number of trawl stations 73)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	37	50.68%	8.189	1948.780	97.285 ± 32.152	0.803	274.945	12.374 ± 4.386
Oncorhynchus gorbuscha	> 30 cm	0.30	2	2.74%	12.035	13.971	0.356 ± 0.253	14.222	18.389	0.447 ± 0.318
Oncorhynchus keta	≤ 30 cm	0.40	9	12.33%	8.989	521.703	9.062 ± 7.222	0.492	65.213	1.088 ± 0.901
Oncorhynchus keta	> 30 cm	0.30	63	86.30%	7.023	4749.386	864.716 ± 126.227	6.531	3003.720	553.684 ± 76.893
Oncorhynchus kisutch	≤ 30 cm	0.40	9	12.33%	6.248	33.455	1.577 ± 0.625	1.762	7.661	0.379 ± 0.144
Oncorhynchus kisutch	> 30 cm	0.30	12	16.44%	12.453	339.729	17.138 ± 6.232	5.093	123.989	6.798 ± 2.395
Oncorhynchus nerka	≤ 30 cm	0.40	19	26.03%	7.688	194.469	10.109 ± 3.513	0.849	32.202	1.999 ± 0.664
Oncorhynchus nerka	> 30 cm	0.30	63	86.30%	19.232	1996.175	225.624 ± 42.789	9.423	1569.529	210.688 ± 37.465
Oncorhynchus tschawytscha	≤ 30 cm	0.40	25	34.25%	6.083	57.695	6.784 ± 1.545	0.311	14.567	1.518 ± 0.375
Oncorhynchus tschawytscha	> 30 cm	0.30	46	63.01%	7.615	318.164	35.931 ± 7.123	5.021	471.163	47.177 ± 9.761

Table 74

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 9 (number of trawl stations 20)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	5.00%	221.992	221.992	11.100 ± 11.388	28.113	28.113	1.406 ± 1.442
Oncorhynchus keta	≤ 30 cm	0.40	4	20.00%	7.059	310.789	18.823 ± 15.903	1.024	25.334	1.546 ± 1.296
Oncorhynchus keta	> 30 cm	0.30	14	70.00%	5.629	3018.513	209.269 ± 153.104	12.518	1849.622	209.802 ± 97.453
Oncorhynchus kisutch	≤ 30 cm	0.40	2	10.00%	4.510	195.353	9.993 ± 10.012	0.586	61.669	3.113 ± 3.162
Oncorhynchus nerka	≤ 30 cm	0.40	2	10.00%	246.814	639.338	44.308 ± 34.529	48.018	109.975	7.900 ± 6.036
Oncorhynchus nerka	> 30 cm	0.30	3	15.00%	66.150	1066.692	60.194 ± 54.564	60.626	1222.032	67.467 ± 62.506
Oncorhynchus tschawytscha	≤ 30 cm	0.40	9	45.00%	4.510	150.955	21.154 ± 8.546	0.361	32.864	4.168 ± 1.820
Oncorhynchus tschawytscha	> 30 cm	0.30	3	15.00%	9.572	40.048	4.257 ± 2.681	40.182	95.724	8.964 ± 5.533

Table 75

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 10 (number of trawl stations 65)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	3	4.62%	6.624	1087.355	28.383 ± 20.336	0.318	63.062	1.828 ± 1.291
Oncorhynchus keta	≤ 30 cm	0.40	10	15.38%	7.983	1042.049	32.338 ± 17.508	0.136	62.319	2.399 ± 1.192
Oncorhynchus keta	> 30 cm	0.30	14	21.54%	6.622	1001.261	31.674 ± 16.575	21.191	3615.664	103.364 ± 58.805
Oncorhynchus kisutch	≤ 30 cm	0.40	3	4.62%	4.850	18.564	0.565 ± 0.358	0.631	2.192	0.077 ± 0.048
Oncorhynchus nerka	≤ 30 cm	0.40	10	15.38%	4.069	354.068	13.039 ± 6.626	0.185	34.340	1.253 ± 0.640
Oncorhynchus tschawytscha	≤ 30 cm	0.40	16	24.62%	4.500	621.799	43.410 ± 15.150	0.468	69.168	5.169 ± 1.747
Oncorhynchus tschawytscha	> 30 cm	0.30	4	6.15%	6.891	85.147	1.798 ± 1.347	16.585	83.891	3.285 ± 1.855

Table 76

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 11 (number of trawl stations 31)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	6.45%	12.820	20.476	1.074 ± 0.780	1.154	1.577	0.088 ± 0.063
Oncorhynchus keta	≤ 30 cm	0.40	5	16.13%	4.286	1064.176	43.696 ± 35.658	0.407	91.635	3.627 ± 3.046
Oncorhynchus keta	> 30 cm	0.30	5	16.13%	5.870	331.977	14.550 ± 11.001	25.216	209.822	13.635 ± 7.673
Oncorhynchus kisutch	≤ 30 cm	0.40	2	6.45%	4.286	13.358	0.569 ± 0.456	0.600	2.137	0.088 ± 0.072
Oncorhynchus nerka	≤ 30 cm	0.40	7	22.58%	11.070	1821.122	111.331 ± 72.418	1.414	147.827	10.046 ± 6.305
Oncorhynchus nerka	> 30 cm	0.30	1	3.23%	7.676	7.676	0.248 ± 0.252	4.966	4.966	0.160 ± 0.163
Oncorhynchus tschawytscha	≤ 30 cm	0.40	8	25.81%	12.858	537.432	36.910 ± 20.222	1.776	161.230	9.286 ± 5.820
Oncorhynchus tschawytscha	> 30 cm	0.30	3	9.68%	18.216	53.038	2.902 ± 1.896	31.671	182.163	8.768 ± 6.251

Table 77

Salmon abundance in upper epipelagic water layer in autumn. The data of the years 1982-2004. Region # 12 (number of trawl stations 99)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	68	68.69%	7.899	8939.769	834.089 ± 156.495	0.790	963.630	85.161 ± 16.115
Oncorhynchus keta	≤ 30 cm	0.40	45	45.45%	8.508	3354.861	127.148 ± 46.505	0.441	371.184	12.798 ± 4.653
Oncorhynchus keta	> 30 cm	0.30	81	81.82%	7.116	2965.881	307.792 ± 55.477	3.714	2436.058	255.323 ± 42.938
Oncorhynchus kisutch	≤ 30 cm	0.40	30	30.30%	5.846	148.478	10.423 ± 2.449	1.402	34.233	2.689 ± 0.643
Oncorhynchus kisutch	> 30 cm	0.30	6	6.06%	7.822	181.506	2.966 ± 1.932	3.254	66.533	1.129 ± 0.711
Oncorhynchus masou	≤ 30 cm	0.40	1	1.01%	5.898	5.898	0.060 ± 0.060	0.624	0.624	0.006 ± 0.006
Oncorhynchus nerka	≤ 30 cm	0.40	33	33.33%	5.923	926.310	32.068 ± 11.977	0.682	122.937	4.077 ± 1.497
Oncorhynchus nerka	> 30 cm	0.30	93	93.94%	7.816	1599.849	233.329 ± 32.083	6.323	1334.626	202.199 ± 28.252
Oncorhynchus tschawytscha	≤ 30 cm	0.40	70	70.71%	5.828	245.288	33.884 ± 4.875	0.516	46.252	5.572 ± 0.786
Oncorhynchus tschawytscha	> 30 cm	0.30	31	31.31%	7.816	89.117	5.825 ± 1.265	6.789	125.637	10.302 ± 2.425

Table 78

Salmon abundance in epipelagic water layer in winter. The data of the years 1982-2004. Region # 8 (number of trawl stations 25)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	4.00%	6.909	6.909	0.276 ± 0.282	0.636	0.636	0.025 ± 0.026
Oncorhynchus nerka	≤ 30 cm	0.40	1	4.00%	6.977	6.977	0.279 ± 0.285	0.977	0.977	0.039 ± 0.040
Oncorhynchus nerka	> 30 cm	0.30	2	8.00%	9.207	9.212	0.737 ± 0.521	13.819	14.732	1.142 ± 0.807

Table 79

Salmon abundance in epipelagic water layer in winter. The data of the years 1982-2004. Region # 9 (number of trawl stations 16)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus tschawytscha	> 30 cm	0.30	1	6.25%	21.357	21.357	1.335 ± 1.379	109.991	109.991	6.874 ± 7.100

Table 80

Salmon abundance in epipelagic water layer in winter. The data of the years 1982-2004. Region # 12 (number of trawl stations 39)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus nerka	> 30 cm	0.30	7	17.95%	9.212	48.053	4.054 ± 1.722	5.804	105.335	6.741 ± 3.156
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	5.13%	8.850	43.187	1.334 ± 1.139	1.947	12.812	0.378 ± 0.335
Oncorhynchus tschawytscha	> 30 cm	0.30	4	10.26%	10.301	35.707	1.815 ± 1.041	38.115	174.963	10.989 ± 6.129

Table 81

Salmon abundance in epipelagic water layer in winter. The data of the years 1982-2004. Region # 13 (number of trawl stations 20)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	5.00%	36.084	36.084	1.804 ± 1.851	10.554	10.554	0.528 ± 0.541
Oncorhynchus tschawytscha	> 30 cm	0.30	2	10.00%	10.879	11.272	1.108 ± 0.782	5.113	43.962	2.454 ± 2.257

Table 82

Salmon abundance in epipelagic water layer in spring. The data of the years 1982-2004. Region # 8 (number of trawl stations 38)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus tschawytscha	> 30 cm	0.30	2	5.26%	7.257	13.262	0.540 ± 0.399	14.078	152.516	4.384 ± 4.075

Table 83

Salmon abundance in epipelagic water layer in spring. The data of the years 1982-2004. Region # 13 (number of trawl stations 22)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	4.55%	14.765	14.765	0.671 ± 0.687	5.168	5.168	0.235 ± 0.240
Oncorhynchus tschawytscha	> 30 cm	0.30	4	18.18%	6.439	41.658	5.035 ± 2.756	9.658	55.197	7.008 ± 3.742

Table 84

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 1 (number of trawl stations 37)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	18	48.65%	5.612	812.709	86.690 ± 34.348	15.462	3215.313	324.306 ± 126.489
Oncorhynchus nerka	> 30 cm	0.30	1	2.70%	6.754	6.754	0.183 ± 0.185	7.767	7.767	0.210 ± 0.213
Oncorhynchus tschawytscha	> 30 cm	0.30	3	8.11%	5.856	31.166	1.196 ± 0.881	26.093	186.996	6.550 ± 5.191

Table 85

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 2 (number of trawl stations 49)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	23	46.94%	6.028	895.451	62.979 ± 21.245	21.098	3233.572	221.178 ± 77.840
Oncorhynchus nerka	> 30 cm	0.30	2	4.08%	6.586	8.189	0.302 ± 0.214	7.573	13.102	0.422 ± 0.309
Oncorhynchus tschawytscha	> 30 cm	0.30	4	8.16%	6.389	29.348	1.039 ± 0.648	8.358	234.783	7.278 ± 5.064

Table 86

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 3 (number of trawl stations 75)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	1	1.33%	14.736	14.736	0.196 ± 0.198	17.315	17.315	0.231 ± 0.232
Oncorhynchus keta	> 30 cm	0.30	22	29.33%	7.438	262.063	19.828 ± 6.149	22.711	614.870	43.547 ± 13.930
Oncorhynchus kisutch	> 30 cm	0.30	1	1.33%	7.120	7.120	0.095 ± 0.096	17.087	17.087	0.228 ± 0.229
Oncorhynchus nerka	≤ 30 cm	0.40	1	1.33%	6.580	6.580	0.088 ± 0.088	0.276	0.276	0.004 ± 0.004
Oncorhynchus nerka	> 30 cm	0.30	4	5.33%	6.616	120.892	1.918 ± 1.628	4.387	113.504	1.796 ± 1.531
Oncorhynchus tschawytscha	> 30 cm	0.30	6	8.00%	3.467	38.790	1.122 ± 0.588	3.467	162.917	3.534 ± 2.449

Table 87

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 4 (number of trawl stations 53)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	16	30.19%	5.620	7817.657	175.331 ± 149.072	12.911	20254.837	434.036 ± 385.584
Oncorhynchus nerka	> 30 cm	0.30	1	1.89%	6.911	6.911	0.130 ± 0.132	18.659	18.659	0.352 ± 0.355
Oncorhynchus tschawytscha	> 30 cm	0.30	2	3.77%	9.147	20.538	0.560 ± 0.425	36.982	62.299	1.873 ± 1.368

Table 88

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 5 (number of trawl stations 106)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.94%	7.959	7.959	0.075 ± 0.075	0.955	0.955	0.009 ± 0.009
Oncorhynchus keta	> 30 cm	0.30	17	16.04%	2.007	1072.221	22.997 ± 12.356	5.017	1522.554	34.904 ± 20.010
Oncorhynchus kisutch	> 30 cm	0.30	1	0.94%	7.535	7.535	0.071 ± 0.071	9.043	9.043	0.085 ± 0.086
Oncorhynchus nerka	> 30 cm	0.30	7	6.60%	9.284	159.852	2.311 ± 1.545	9.791	359.934	4.366 ± 3.427
Oncorhynchus tschawytscha	> 30 cm	0.30	8	7.55%	1.997	41.665	1.317 ± 0.558	1.798	146.531	3.869 ± 1.893

Table 89

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 6 (number of trawl stations 43)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	15	34.88%	7.573	761.146	50.008 ± 21.876	37.484	3262.054	180.478 ± 86.607
Oncorhynchus nerka	> 30 cm	0.30	1	2.33%	4.730	4.730	0.110 ± 0.111	13.528	13.528	0.315 ± 0.318
Oncorhynchus sp.	> 30 cm	0.30	1	2.33%	41.143	41.143	0.957 ± 0.968	205.713	205.713	4.784 ± 4.841
Oncorhynchus tschawytscha	> 30 cm	0.30	4	9.30%	4.730	82.285	3.046 ± 2.091	13.035	740.566	22.231 ± 17.803

Table 90

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 7 (number of trawl stations 114)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.88%	1.519	1.519	0.013 ± 0.013	0.084	0.084	0.001 ± 0.001
Oncorhynchus keta	> 30 cm	0.30	19	16.67%	5.807	620.162	16.852 ± 6.876	5.807	1085.284	26.851 ± 10.850
Oncorhynchus kisutch	> 30 cm	0.30	1	0.88%	26.635	26.635	0.234 ± 0.235	186.445	186.445	1.635 ± 1.643
Oncorhynchus nerka	> 30 cm	0.30	6	5.26%	11.381	58.860	1.699 ± 0.779	10.812	56.781	1.696 ± 0.777
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	0.88%	13.144	13.144	0.115 ± 0.116	2.885	2.885	0.025 ± 0.025
Oncorhynchus tschawytscha	> 30 cm	0.30	9	7.89%	3.794	20.523	0.757 ± 0.274	3.826	179.919	4.098 ± 1.871

Table 91

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 8 (number of trawl stations 167)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	4	2.40%	19.786	768.464	7.328 ± 5.205	3.159	112.458	0.953 ± 0.714
Oncorhynchus keta	≤ 30 cm	0.40	2	1.20%	32.510	521.703	3.319 ± 3.138	8.669	65.213	0.442 ± 0.395
Oncorhynchus keta	> 30 cm	0.30	50	29.94%	6.565	4276.692	96.340 ± 29.457	2.954	2188.293	61.079 ± 16.278
Oncorhynchus kisutch	≤ 30 cm	0.40	2	1.20%	6.248	6.595	0.077 ± 0.054	2.199	2.322	0.027 ± 0.019
Oncorhynchus nerka	≤ 30 cm	0.40	4	2.40%	7.093	15.852	0.295 ± 0.151	0.567	3.094	0.051 ± 0.028
Oncorhynchus nerka	> 30 cm	0.30	38	22.75%	10.891	467.602	20.423 ± 4.952	9.618	366.747	20.136 ± 4.421
Oncorhynchus tschawytscha	≤ 30 cm	0.40	7	4.19%	5.360	26.382	0.502 ± 0.215	0.311	5.989	0.092 ± 0.044
Oncorhynchus tschawytscha	> 30 cm	0.30	43	25.75%	5.496	197.005	10.299 ± 2.345	4.897	247.438	12.264 ± 2.697

Table 92

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 9 (number of trawl stations 72)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	1.39%	7.059	7.059	0.098 ± 0.099	1.024	1.024	0.014 ± 0.014
Oncorhynchus keta	> 30 cm	0.30	12	16.67%	5.629	284.751	10.645 ± 5.268	12.518	570.712	26.773 ± 11.948
Oncorhynchus kisutch	≤ 30 cm	0.40	1	1.39%	4.510	4.510	0.063 ± 0.063	0.586	0.586	0.008 ± 0.008
Oncorhynchus nerka	> 30 cm	0.30	1	1.39%	33.204	33.204	0.461 ± 0.464	43.055	43.055	0.598 ± 0.602
Oncorhynchus tschawytscha	≤ 30 cm	0.40	6	8.33%	4.510	53.391	1.741 ± 0.898	0.361	8.436	0.292 ± 0.150
Oncorhynchus tschawytscha	> 30 cm	0.30	5	6.94%	5.998	40.048	1.218 ± 0.652	37.786	95.724	4.634 ± 2.158

Table 93

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 10 (number of trawl stations 67)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	2.99%	750.946	1087.355	27.437 ± 19.731	55.416	63.062	1.768 ± 1.253
Oncorhynchus keta	≤ 30 cm	0.40	10	14.93%	7.983	1042.049	31.372 ± 16.991	0.136	62.319	2.328 ± 1.157
Oncorhynchus keta	> 30 cm	0.30	11	16.42%	6.622	1001.261	30.072 ± 16.100	21.191	3615.664	96.630 ± 57.113
Oncorhynchus kisutch	≤ 30 cm	0.40	3	4.48%	4.850	18.564	0.548 ± 0.347	0.631	2.192	0.075 ± 0.047
Oncorhynchus nerka	≤ 30 cm	0.40	9	13.43%	4.069	354.068	12.551 ± 6.433	0.407	34.340	1.213 ± 0.621
Oncorhynchus tschawytscha	≤ 30 cm	0.40	13	19.40%	4.500	621.799	40.459 ± 14.749	0.468	69.168	4.786 ± 1.700
Oncorhynchus tschawytscha	> 30 cm	0.30	4	5.97%	6.891	85.147	1.745 ± 1.307	16.585	83.891	3.186 ± 1.800

Table 94

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 11 (number of trawl stations 92)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	2.17%	11.623	20.476	0.349 ± 0.256	1.319	1.577	0.031 ± 0.022
Oncorhynchus keta	≤ 30 cm	0.40	6	6.52%	4.286	1064.176	15.040 ± 11.955	0.407	91.635	1.252 ± 1.020
Oncorhynchus keta	> 30 cm	0.30	9	9.78%	5.870	331.977	6.429 ± 3.874	16.853	183.414	6.263 ± 2.638
Oncorhynchus kisutch	≤ 30 cm	0.40	3	3.26%	4.286	13.358	0.275 ± 0.173	0.600	2.137	0.044 ± 0.028
Oncorhynchus nerka	≤ 30 cm	0.40	7	7.61%	11.070	1821.122	37.514 ± 24.510	1.414	147.827	3.385 ± 2.138
Oncorhynchus nerka	> 30 cm	0.30	2	2.17%	7.676	18.915	0.289 ± 0.222	4.966	35.276	0.437 ± 0.389
Oncorhynchus tschawytscha	≤ 30 cm	0.40	10	10.87%	5.834	537.432	13.029 ± 6.929	0.928	161.230	3.232 ± 1.974
Oncorhynchus tschawytscha	> 30 cm	0.30	6	6.52%	10.540	53.038	1.642 ± 0.774	31.671	216.137	7.082 ± 3.411

Table 95

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 12 (number of trawl stations 284)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	22	7.75%	26.684	7186.223	90.905 ± 31.816	2.813	963.630	10.505 ± 3.982
Oncorhynchus gorbuscha	> 30 cm	0.30	3	1.06%	6.609	10.010	0.083 ± 0.049	7.931	8.945	0.089 ± 0.052
Oncorhynchus keta	≤ 30 cm	0.40	17	5.99%	11.485	634.978	8.882 ± 3.114	1.353	108.879	1.217 ± 0.483
Oncorhynchus keta	> 30 cm	0.30	78	27.46%	5.291	611.419	22.492 ± 3.923	2.784	488.561	20.250 ± 3.588
Oncorhynchus kisutch	≤ 30 cm	0.40	16	5.63%	3.676	166.646	1.337 ± 0.628	0.772	41.828	0.324 ± 0.156
Oncorhynchus kisutch	> 30 cm	0.30	6	2.11%	7.144	21.726	0.237 ± 0.105	3.254	48.884	0.271 ± 0.179
Oncorhynchus masou	≤ 30 cm	0.40	1	0.35%	5.898	5.898	0.021 ± 0.021	0.624	0.624	0.002 ± 0.002
Oncorhynchus nerka	≤ 30 cm	0.40	9	3.17%	5.923	66.341	0.737 ± 0.305	0.682	8.558	0.121 ± 0.047
Oncorhynchus nerka	> 30 cm	0.30	88	30.99%	4.398	606.651	29.144 ± 4.769	3.959	525.189	26.237 ± 4.156
Oncorhynchus tschawytscha	≤ 30 cm	0.40	39	13.73%	3.446	78.682	2.616 ± 0.516	0.516	16.981	0.464 ± 0.098
Oncorhynchus tschawytscha	> 30 cm	0.30	29	10.21%	2.604	38.306	1.485 ± 0.317	2.604	174.963	3.580 ± 0.964

Table 96

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 13 (number of trawl stations 114)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.88%	38.028	38.028	0.334 ± 0.335	4.563	4.563	0.040 ± 0.040
Oncorhynchus gorbuscha	> 30 cm	0.30	2	1.75%	6.602	6.988	0.119 ± 0.084	6.140	6.638	0.112 ± 0.079
Oncorhynchus keta	≤ 30 cm	0.40	3	2.63%	8.925	741.544	7.211 ± 6.558	2.508	89.366	0.944 ± 0.798
Oncorhynchus keta	> 30 cm	0.30	29	25.44%	6.988	1477.352	33.751 ± 15.509	8.970	1065.579	27.700 ± 12.176
Oncorhynchus kisutch	> 30 cm	0.30	1	0.88%	2.759	2.759	0.024 ± 0.024	3.586	3.586	0.031 ± 0.032
Oncorhynchus nerka	≤ 30 cm	0.40	5	4.39%	8.925	129.246	1.946 ± 1.214	1.740	26.588	0.371 ± 0.245
Oncorhynchus nerka	> 30 cm	0.30	22	19.30%	8.028	532.391	15.481 ± 5.610	6.244	370.449	13.291 ± 4.217
Oncorhynchus tschawytscha	≤ 30 cm	0.40	8	7.02%	9.122	50.421	1.620 ± 0.642	1.805	10.554	0.341 ± 0.134
Oncorhynchus tschawytscha	> 30 cm	0.30	31	27.19%	6.439	160.194	9.573 ± 2.161	5.113	212.658	14.744 ± 3.296

Table 97

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 1 (number of trawl stations 37)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	18	48.65%	5.612	812.709	86.690 ± 34.348	15.462	3215.313	324.306 ± 126.489
Oncorhynchus nerka	> 30 cm	0.30	1	2.70%	6.754	6.754	0.183 ± 0.185	7.767	7.767	0.210 ± 0.213
Oncorhynchus tschawytscha	> 30 cm	0.30	3	8.11%	5.856	31.166	1.196 ± 0.881	26.093	186.996	6.550 ± 5.191

Table 98

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 2 (number of trawl stations 46)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	23	50.00%	6.028	895.451	67.086 ± 22.523	21.098	3233.572	235.602 ± 82.563
Oncorhynchus nerka	> 30 cm	0.30	1	2.17%	6.586	6.586	0.143 ± 0.145	7.573	7.573	0.165 ± 0.166
Oncorhynchus tschawytscha	> 30 cm	0.30	4	8.70%	6.389	29.348	1.106 ± 0.690	8.358	234.783	7.753 ± 5.393

Table 99

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 3 (number of trawl stations 56)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	1	1.79%	14.736	14.736	0.263 ± 0.266	17.315	17.315	0.309 ± 0.312
Oncorhynchus keta	> 30 cm	0.30	17	30.36%	7.438	262.063	17.393 ± 6.967	22.711	614.870	41.049 ± 16.632
Oncorhynchus kisutch	> 30 cm	0.30	1	1.79%	7.120	7.120	0.127 ± 0.128	17.087	17.087	0.305 ± 0.308
Oncorhynchus nerka	≤ 30 cm	0.40	1	1.79%	6.580	6.580	0.118 ± 0.119	0.276	0.276	0.005 ± 0.005
Oncorhynchus nerka	> 30 cm	0.30	2	3.57%	7.592	8.774	0.292 ± 0.207	4.387	12.147	0.295 ± 0.231
Oncorhynchus tschawytscha	> 30 cm	0.30	4	7.14%	3.467	14.096	0.690 ± 0.369	3.467	84.576	1.761 ± 1.526

Table 100

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 4 (number of trawl stations 41)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	14	34.15%	5.869	7817.657	225.422 ± 193.056	12.911	20254.837	558.216 ± 499.510
Oncorhynchus nerka	> 30 cm	0.30	1	2.44%	6.911	6.911	0.169 ± 0.171	18.659	18.659	0.455 ± 0.461
Oncorhynchus tschawytscha	> 30 cm	0.30	2	4.88%	9.147	20.538	0.724 ± 0.550	36.982	62.299	2.421 ± 1.769

Table 101

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 5 (number of trawl stations 20)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	5.00%	7.959	7.959	0.398 ± 0.408	0.955	0.955	0.048 ± 0.049
Oncorhynchus keta	> 30 cm	0.30	7	35.00%	7.640	1072.221	93.684 ± 64.193	18.040	1522.554	155.916 ± 105.166
Oncorhynchus kisutch	> 30 cm	0.30	1	5.00%	7.535	7.535	0.377 ± 0.387	9.043	9.043	0.452 ± 0.464
Oncorhynchus nerka	> 30 cm	0.30	2	10.00%	9.284	10.612	0.995 ± 0.704	11.141	19.102	1.512 ± 1.108
Oncorhynchus tschawytscha	> 30 cm	0.30	2	10.00%	5.607	9.284	0.745 ± 0.543	3.078	22.281	1.268 ± 1.146

Table 102

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 6 (number of trawl stations 39)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	> 30 cm	0.30	15	38.46%	7.573	761.146	55.137 ± 24.020	37.484	3262.054	198.989 ± 95.203
Oncorhynchus nerka	> 30 cm	0.30	1	2.56%	4.730	4.730	0.121 ± 0.123	13.528	13.528	0.347 ± 0.351
Oncorhynchus sp.	> 30 cm	0.30	1	2.56%	41.143	41.143	1.055 ± 1.069	205.713	205.713	5.275 ± 5.344
Oncorhynchus tschawytscha	> 30 cm	0.30	4	10.26%	4.730	82.285	3.358 ± 2.305	13.035	740.566	24.512 ± 19.639

Table 103

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 7 (number of trawl stations 31)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	3.23%	1.519	1.519	0.049 ± 0.050	0.084	0.084	0.003 ± 0.003
Oncorhynchus keta	> 30 cm	0.30	12	38.71%	7.501	620.162	48.233 ± 23.728	15.745	1085.284	75.481 ± 37.885
Oncorhynchus kisutch	> 30 cm	0.30	1	3.23%	26.635	26.635	0.859 ± 0.873	186.445	186.445	6.014 ± 6.114
Oncorhynchus nerka	> 30 cm	0.30	4	12.90%	16.761	43.814	3.981 ± 2.104	19.153	56.781	4.135 ± 2.218
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	3.23%	13.144	13.144	0.424 ± 0.431	2.885	2.885	0.093 ± 0.095
Oncorhynchus tschawytscha	> 30 cm	0.30	5	16.13%	6.268	20.523	1.683 ± 0.808	31.341	179.919	11.097 ± 6.283

Table 104

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 8 (number of trawl stations 23)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	4	17.39%	19.786	768.464	53.210 ± 37.765	3.159	112.458	6.918 ± 5.200
Oncorhynchus keta	≤ 30 cm	0.40	1	4.35%	521.703	521.703	22.683 ± 23.193	65.213	65.213	2.835 ± 2.899
Oncorhynchus keta	> 30 cm	0.30	16	69.57%	10.248	1334.809	229.197 ± 71.579	15.031	843.038	136.187 ± 42.303
Oncorhynchus kisutch	≤ 30 cm	0.40	2	8.70%	6.248	6.595	0.558 ± 0.395	2.199	2.322	0.197 ± 0.139
Oncorhynchus nerka	≤ 30 cm	0.40	2	8.70%	12.495	13.753	1.141 ± 0.807	1.987	3.094	0.221 ± 0.160
Oncorhynchus nerka	> 30 cm	0.30	12	52.17%	27.904	467.602	75.921 ± 28.198	13.087	366.747	61.161 ± 19.898
Oncorhynchus tschawytscha	≤ 30 cm	0.40	4	17.39%	6.083	26.382	2.530 ± 1.376	0.311	5.989	0.446 ± 0.292
Oncorhynchus tschawytscha	> 30 cm	0.30	9	39.13%	7.774	164.486	13.820 ± 7.355	6.344	137.072	13.753 ± 6.735

Table 105

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 9 (number of trawl stations 19)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	5.26%	7.059	7.059	0.372 ± 0.382	1.024	1.024	0.054 ± 0.055
Oncorhynchus keta	> 30 cm	0.30	10	52.63%	5.629	284.751	38.870 ± 19.160	12.518	570.712	95.807 ± 42.702
Oncorhynchus kisutch	≤ 30 cm	0.40	1	5.26%	4.510	4.510	0.237 ± 0.244	0.586	0.586	0.031 ± 0.032
Oncorhynchus tschawytscha	≤ 30 cm	0.40	5	26.32%	4.510	53.391	6.250 ± 3.284	0.361	8.436	1.075 ± 0.549
Oncorhynchus tschawytscha	> 30 cm	0.30	2	10.53%	9.572	40.048	2.612 ± 2.198	40.182	95.724	7.153 ± 5.501

Table 106

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 10 (number of trawl stations 61)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	3.28%	750.946	1087.355	30.136 ± 21.672	55.416	63.062	1.942 ± 1.376
Oncorhynchus keta	≤ 30 cm	0.40	10	16.39%	7.983	1042.049	34.458 ± 18.642	0.136	62.319	2.557 ± 1.269
Oncorhynchus keta	> 30 cm	0.30	11	18.03%	6.622	1001.261	33.030 ± 17.664	21.191	3615.664	106.134 ± 62.688
Oncorhynchus kisutch	≤ 30 cm	0.40	3	4.92%	4.850	18.564	0.602 ± 0.381	0.631	2.192	0.082 ± 0.052
Oncorhynchus nerka	≤ 30 cm	0.40	9	14.75%	4.069	354.068	13.785 ± 7.056	0.407	34.340	1.332 ± 0.681
Oncorhynchus tschawytscha	≤ 30 cm	0.40	13	21.31%	4.500	621.799	44.439 ± 16.132	0.468	69.168	5.256 ± 1.859
Oncorhynchus tschawytscha	> 30 cm	0.30	4	6.56%	6.891	85.147	1.916 ± 1.436	16.585	83.891	3.500 ± 1.976

Table 107

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 11 (number of trawl stations 32)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	3.13%	20.476	20.476	0.640 ± 0.650	1.577	1.577	0.049 ± 0.050
Oncorhynchus keta	≤ 30 cm	0.40	5	15.63%	4.286	1064.176	42.331 ± 34.536	0.407	91.635	3.514 ± 2.950
Oncorhynchus keta	> 30 cm	0.30	4	12.50%	5.870	331.977	12.131 ± 10.543	25.216	100.158	6.652 ± 3.722
Oncorhynchus kisutch	≤ 30 cm	0.40	2	6.25%	4.286	13.358	0.551 ± 0.441	0.600	2.137	0.086 ± 0.070
Oncorhynchus nerka	≤ 30 cm	0.40	7	21.88%	11.070	1821.122	107.852 ± 70.171	1.414	147.827	9.732 ± 6.110
Oncorhynchus nerka	> 30 cm	0.30	1	3.13%	7.676	7.676	0.240 ± 0.244	4.966	4.966	0.155 ± 0.158
Oncorhynchus tschawytscha	≤ 30 cm	0.40	7	21.88%	12.858	537.432	35.265 ± 19.628	1.854	161.230	8.940 ± 5.642
Oncorhynchus tschawytscha	> 30 cm	0.30	3	9.38%	18.216	53.038	2.811 ± 1.837	31.671	182.163	8.494 ± 6.056

Table 108

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1982-1990. Region # 12 (number of trawl stations 40)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	20	50.00%	26.684	7186.223	636.360 ± 210.073	2.813	963.630	73.616 ± 26.687
Oncorhynchus gorbuscha	> 30 cm	0.30	2	5.00%	6.881	10.010	0.422 ± 0.304	8.509	8.945	0.436 ± 0.309
Oncorhynchus keta	≤ 30 cm	0.40	16	40.00%	11.485	634.978	61.338 ± 20.572	1.353	108.879	8.465 ± 3.260
Oncorhynchus keta	> 30 cm	0.30	29	72.50%	7.116	309.652	57.089 ± 12.770	3.714	488.561	61.569 ± 17.415
Oncorhynchus kisutch	≤ 30 cm	0.40	3	7.50%	5.846	21.784	0.837 ± 0.582	1.402	6.802	0.251 ± 0.180
Oncorhynchus kisutch	> 30 cm	0.30	2	5.00%	7.822	8.345	0.404 ± 0.286	3.254	6.242	0.237 ± 0.176
Oncorhynchus masou	≤ 30 cm	0.40	1	2.50%	5.898	5.898	0.147 ± 0.149	0.624	0.624	0.016 ± 0.016
Oncorhynchus nerka	≤ 30 cm	0.40	8	20.00%	5.923	66.341	4.795 ± 2.045	0.682	8.558	0.727 ± 0.293
Oncorhynchus nerka	> 30 cm	0.30	28	70.00%	7.816	606.651	104.932 ± 25.218	6.323	457.473	84.343 ± 19.913
Oncorhynchus tschawytscha	≤ 30 cm	0.40	19	47.50%	5.862	78.682	10.715 ± 2.725	0.516	16.981	2.091 ± 0.553
Oncorhynchus tschawytscha	> 30 cm	0.30	10	25.00%	6.632	20.643	3.050 ± 0.956	6.632	79.082	6.313 ± 2.589

Table 109

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 5 (number of trawl stations 10)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus tschawytscha	> 30 cm	0.30	1	10.00%	55.680	55.680	5.568 ± 5.869	528.958	528.958	52.896 ± 55.757

Table 110

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 8 (number of trawl stations 51)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	14	27.45%	6.686	555.346	44.691 ± 15.522	6.352	736.389	59.284 ± 21.013
Oncorhynchus keta	≤ 30 cm	0.40	1	1.96%	6.909	6.909	0.135 ± 0.137	0.636	0.636	0.012 ± 0.013
Oncorhynchus keta	> 30 cm	0.30	16	31.37%	7.023	783.743	70.069 ± 23.073	6.531	1636.455	144.452 ± 45.766
Oncorhynchus nerka	≤ 30 cm	0.40	2	3.92%	6.977	11.185	0.356 ± 0.259	0.977	1.678	0.052 ± 0.038
Oncorhynchus nerka	> 30 cm	0.30	15	29.41%	8.708	108.036	11.906 ± 3.499	9.423	144.685	15.478 ± 4.438
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	1.96%	57.695	57.695	1.131 ± 1.143	10.601	10.601	0.208 ± 0.210
Oncorhynchus tschawytscha	> 30 cm	0.30	10	19.61%	7.615	60.958	4.449 ± 1.800	11.900	158.055	9.917 ± 4.115

Table 111

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 9 (number of trawl stations 39)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	2	5.13%	6.631	13.262	0.510 ± 0.381	6.763	16.842	0.605 ± 0.467
Oncorhynchus keta	> 30 cm	0.30	7	17.95%	40.990	128.658	14.649 ± 5.585	74.874	317.651	31.529 ± 12.529
Oncorhynchus kisutch	> 30 cm	0.30	1	2.56%	6.631	6.631	0.170 ± 0.172	18.102	18.102	0.464 ± 0.470
Oncorhynchus nerka	> 30 cm	0.30	3	7.69%	26.523	397.845	12.786 ± 10.464	43.034	241.757	8.817 ± 6.487
Oncorhynchus tschawytscha	> 30 cm	0.30	4	10.26%	4.120	21.357	1.020 ± 0.610	32.509	109.991	6.717 ± 3.582

Table 112

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 10 (number of trawl stations 41)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	7	17.07%	8.584	182.889	8.188 ± 4.774	7.554	240.991	10.719 ± 6.336
Oncorhynchus keta	> 30 cm	0.30	9	21.95%	6.863	93.654	5.243 ± 2.574	18.530	284.643	17.288 ± 8.002
Oncorhynchus nerka	> 30 cm	0.30	1	2.44%	13.726	13.726	0.335 ± 0.339	11.461	11.461	0.280 ± 0.283
Oncorhynchus tschawytscha	> 30 cm	0.30	4	9.76%	6.618	8.396	0.701 ± 0.343	3.849	102.586	5.315 ± 3.239

Table 113

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 11 (number of trawl stations 51)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	15	29.41%	7.443	757.618	51.022 ± 22.425	8.411	925.513	62.553 ± 27.517
Oncorhynchus keta	> 30 cm	0.30	13	25.49%	6.690	68.316	8.061 ± 2.413	14.383	191.296	25.383 ± 7.451
Oncorhynchus nerka	≤ 30 cm	0.40	1	1.96%	5.582	5.582	0.109 ± 0.111	1.228	1.228	0.024 ± 0.024
Oncorhynchus nerka	> 30 cm	0.30	4	7.84%	6.832	143.463	3.375 ± 2.850	2.828	74.874	2.047 ± 1.543
Oncorhynchus tschawytscha	> 30 cm	0.30	4	7.84%	6.832	21.097	0.864 ± 0.484	6.960	75.731	4.097 ± 2.284

Table 114

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 12 (number of trawl stations 147)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.68%	7.899	7.899	0.054 ± 0.054	0.790	0.790	0.005 ± 0.005
Oncorhynchus gorbuscha	> 30 cm	0.30	93	63.27%	6.477	3107.223	144.104 ± 30.479	6.991	3305.500	162.312 ± 34.069
Oncorhynchus keta	> 30 cm	0.30	99	67.35%	7.048	557.811	87.740 ± 9.741	13.554	1211.341	170.991 ± 19.131
Oncorhynchus kisutch	> 30 cm	0.30	2	1.36%	7.683	7.775	0.105 ± 0.074	13.295	29.885	0.294 ± 0.223
Oncorhynchus nerka	≤ 30 cm	0.40	7	4.76%	5.452	228.316	3.605 ± 2.004	1.373	69.962	1.050 ± 0.591
Oncorhynchus nerka	> 30 cm	0.30	73	49.66%	6.575	944.024	55.534 ± 10.204	2.971	710.898	43.478 ± 7.158
Oncorhynchus tschawytscha	≤ 30 cm	0.40	6	4.08%	5.828	48.423	0.849 ± 0.454	0.758	12.812	0.216 ± 0.119
Oncorhynchus tschawytscha	> 30 cm	0.30	26	17.69%	4.609	84.687	2.415 ± 0.700	3.412	150.558	8.410 ± 2.067

Table 115

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 8 (number of trawl stations 32)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	14	43.75%	6.686	555.346	71.226 ± 23.745	6.352	736.389	94.483 ± 32.218
Oncorhynchus keta	≤ 30 cm	0.40	1	3.13%	6.909	6.909	0.216 ± 0.219	0.636	0.636	0.020 ± 0.020
Oncorhynchus keta	> 30 cm	0.30	16	50.00%	7.023	783.743	111.673 ± 35.075	6.531	1636.455	230.220 ± 69.219
Oncorhynchus nerka	≤ 30 cm	0.40	2	6.25%	6.977	11.185	0.568 ± 0.412	0.977	1.678	0.083 ± 0.061
Oncorhynchus nerka	> 30 cm	0.30	15	46.88%	8.708	108.036	18.975 ± 5.233	9.423	144.685	24.668 ± 6.610
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	3.13%	57.695	57.695	1.803 ± 1.832	10.601	10.601	0.331 ± 0.337
Oncorhynchus tschawytscha	> 30 cm	0.30	10	31.25%	7.615	60.958	7.091 ± 2.794	11.900	158.055	15.805 ± 6.400

Table 116

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 9 (number of trawl stations 29)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	2	6.90%	6.631	13.262	0.686 ± 0.513	6.763	16.842	0.814 ± 0.629
Oncorhynchus keta	> 30 cm	0.30	7	24.14%	40.990	128.658	19.700 ± 7.333	74.874	317.651	42.401 ± 16.495
Oncorhynchus kisutch	> 30 cm	0.30	1	3.45%	6.631	6.631	0.229 ± 0.233	18.102	18.102	0.624 ± 0.635
Oncorhynchus nerka	> 30 cm	0.30	3	10.34%	26.523	397.845	17.194 ± 14.103	43.034	241.757	11.858 ± 8.727
Oncorhynchus tschawytscha	> 30 cm	0.30	3	10.34%	4.120	8.071	0.636 ± 0.374	32.509	59.735	5.240 ± 3.071

Table 117

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 10 (number of trawl stations 39)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	7	17.95%	8.584	182.889	8.608 ± 5.015	7.554	240.991	11.268 ± 6.657
Oncorhynchus keta	> 30 cm	0.30	9	23.08%	6.863	93.654	5.512 ± 2.702	18.530	284.643	18.175 ± 8.397
Oncorhynchus nerka	> 30 cm	0.30	1	2.56%	13.726	13.726	0.352 ± 0.357	11.461	11.461	0.294 ± 0.298
Oncorhynchus tschawytscha	> 30 cm	0.30	4	10.26%	6.618	8.396	0.737 ± 0.360	3.849	102.586	5.588 ± 3.403

Table 118

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 11 (number of trawl stations 32)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	> 30 cm	0.30	14	43.75%	7.443	757.618	80.923 ± 35.044	8.411	925.513	98.898 ± 43.025
Oncorhynchus keta	> 30 cm	0.30	13	40.63%	6.690	68.316	12.847 ± 3.619	14.383	191.296	40.455 ± 11.141
Oncorhynchus nerka	≤ 30 cm	0.40	1	3.13%	5.582	5.582	0.174 ± 0.177	1.228	1.228	0.038 ± 0.039
Oncorhynchus nerka	> 30 cm	0.30	4	12.50%	6.832	143.463	5.378 ± 4.558	2.828	74.874	3.263 ± 2.461
Oncorhynchus tschawytscha	> 30 cm	0.30	3	9.38%	6.832	8.899	0.718 ± 0.410	6.960	75.731	4.819 ± 3.251

Table 119

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1991-1995. Region # 12 (number of trawl stations 138)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	0.72%	7.899	7.899	0.057 ± 0.057	0.790	0.790	0.006 ± 0.006
Oncorhynchus gorbuscha	> 30 cm	0.30	93	67.39%	6.477	3107.223	153.503 ± 32.317	6.991	3305.500	172.897 ± 36.121
Oncorhynchus keta	> 30 cm	0.30	99	71.74%	7.048	557.811	93.463 ± 10.189	13.554	1211.341	182.142 ± 20.018
Oncorhynchus kisutch	> 30 cm	0.30	2	1.45%	7.683	7.775	0.112 ± 0.079	13.295	29.885	0.313 ± 0.237
Oncorhynchus nerka	≤ 30 cm	0.40	7	5.07%	5.452	228.316	3.841 ± 2.134	1.373	69.962	1.118 ± 0.629
Oncorhynchus nerka	> 30 cm	0.30	71	51.45%	6.575	944.024	58.961 ± 10.809	2.971	710.898	45.926 ± 7.577
Oncorhynchus tschawytscha	≤ 30 cm	0.40	6	4.35%	5.828	48.423	0.904 ± 0.484	0.758	12.812	0.230 ± 0.127
Oncorhynchus tschawytscha	> 30 cm	0.30	25	18.12%	4.609	84.687	2.471 ± 0.740	3.412	109.225	7.868 ± 1.935

Table 120

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 1 (number of trawl stations 18)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	11.11%	7.217	9.292	0.917 ± 0.653	0.446	0.837	0.071 ± 0.053
Oncorhynchus keta	≤ 30 cm	0.40	2	11.11%	27.248	28.868	3.118 ± 2.202	2.025	2.685	0.262 ± 0.187
Oncorhynchus keta	> 30 cm	0.30	4	22.22%	12.110	71.494	7.177 ± 4.313	100.757	310.735	36.577 ± 19.803
Oncorhynchus nerka	≤ 30 cm	0.40	2	11.11%	18.165	64.952	4.618 ± 3.796	1.953	7.368	0.518 ± 0.429
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	5.56%	9.083	9.083	0.505 ± 0.519	1.780	1.780	0.099 ± 0.102
Oncorhynchus tschawytscha	> 30 cm	0.30	6	33.33%	9.623	24.780	5.010 ± 1.963	22.839	319.981	44.033 ± 22.273

Table 121

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 2 (number of trawl stations 37)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	2.70%	27.078	27.078	0.732 ± 0.742	0.821	0.821	0.022 ± 0.023
Oncorhynchus keta	> 30 cm	0.30	6	16.22%	11.058	225.278	15.499 ± 8.024	42.353	852.252	64.970 ± 31.867
Oncorhynchus kisutch	> 30 cm	0.30	1	2.70%	12.515	12.515	0.338 ± 0.343	53.816	53.816	1.454 ± 1.475
Oncorhynchus nerka	≤ 30 cm	0.40	2	5.41%	9.026	9.387	0.498 ± 0.352	0.375	0.866	0.034 ± 0.026
Oncorhynchus nerka	> 30 cm	0.30	1	2.70%	37.546	37.546	1.015 ± 1.029	24.280	24.280	0.656 ± 0.665
Oncorhynchus tschawytscha	> 30 cm	0.30	10	27.03%	11.340	156.451	13.931 ± 5.511	23.869	300.094	36.867 ± 12.289

Table 122

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 3 (number of trawl stations 60)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	1.67%	9.008	9.008	0.150 ± 0.151	0.423	0.423	0.007 ± 0.007
Oncorhynchus keta	≤ 30 cm	0.40	6	10.00%	17.576	315.263	8.678 ± 5.500	0.624	24.870	0.758 ± 0.449
Oncorhynchus keta	> 30 cm	0.30	9	15.00%	11.398	4200.558	121.116 ± 78.026	23.071	6723.282	218.348 ± 130.699
Oncorhynchus nerka	≤ 30 cm	0.40	6	10.00%	9.837	151.822	4.253 ± 2.657	1.426	28.762	0.736 ± 0.499
Oncorhynchus nerka	> 30 cm	0.30	5	8.33%	11.246	372.527	12.238 ± 8.123	10.403	224.218	8.127 ± 5.217
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	3.33%	9.294	9.837	0.319 ± 0.226	0.911	2.990	0.065 ± 0.052
Oncorhynchus tschawytscha	> 30 cm	0.30	10	16.67%	10.460	140.611	5.474 ± 2.647	10.880	100.384	6.657 ± 2.426

Table 123

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 4 (number of trawl stations 43)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	4.65%	8.663	91.709	2.334 ± 2.163	0.754	8.584	0.217 ± 0.202
Oncorhynchus keta	≤ 30 cm	0.40	4	9.30%	9.191	752.014	22.770 ± 18.185	0.653	73.413	2.071 ± 1.750
Oncorhynchus keta	> 30 cm	0.30	9	20.93%	12.508	318.611	13.488 ± 7.701	23.010	851.561	32.204 ± 20.319
Oncorhynchus nerka	≤ 30 cm	0.40	6	13.95%	8.521	91.709	3.585 ± 2.225	0.700	14.398	0.494 ± 0.344
Oncorhynchus nerka	> 30 cm	0.30	3	6.98%	12.443	61.271	2.331 ± 1.576	14.443	42.387	1.821 ± 1.148
Oncorhynchus tschawytscha	> 30 cm	0.30	10	23.26%	12.330	122.543	10.982 ± 4.228	6.646	207.890	17.895 ± 6.936

Table 124

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 5 (number of trawl stations 91)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	7	7.69%	8.981	98.796	3.880 ± 1.770	0.440	8.633	0.311 ± 0.149
Oncorhynchus gorbuscha	> 30 cm	0.30	5	5.49%	10.595	59.072	1.393 ± 0.771	15.321	70.453	1.990 ± 1.051
Oncorhynchus keta	≤ 30 cm	0.40	7	7.69%	8.981	390.159	8.041 ± 4.569	1.356	41.917	0.746 ± 0.476
Oncorhynchus keta	> 30 cm	0.30	26	28.57%	3.408	8713.823	346.121 ± 119.197	8.044	8875.191	450.911 ± 136.770
Oncorhynchus kisutch	> 30 cm	0.30	2	2.20%	11.458	12.183	0.260 ± 0.184	25.705	29.734	0.609 ± 0.432
Oncorhynchus nerka	≤ 30 cm	0.40	12	13.19%	7.839	391.438	10.668 ± 4.937	0.321	20.638	1.094 ± 0.398
Oncorhynchus nerka	> 30 cm	0.30	17	18.68%	10.242	2644.195	42.757 ± 29.541	5.725	1777.548	29.697 ± 19.896
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	1.10%	7.741	7.741	0.085 ± 0.086	1.099	1.099	0.012 ± 0.012
Oncorhynchus tschawytscha	> 30 cm	0.30	18	19.78%	10.133	259.027	8.758 ± 3.224	6.141	429.275	15.232 ± 5.547

Table 125

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 6 (number of trawl stations 11)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus tschawytscha	> 30 cm	0.30	2	18.18%	22.567	57.016	7.235 ± 5.643	107.643	344.759	41.127 ± 33.442

Table 126

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 7 (number of trawl stations 39)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	2.56%	18.174	18.174	0.466 ± 0.472	1.681	1.681	0.043 ± 0.044
Oncorhynchus gorbuscha	> 30 cm	0.30	1	2.56%	12.424	12.424	0.319 ± 0.323	15.307	15.307	0.392 ± 0.398
Oncorhynchus keta	≤ 30 cm	0.40	3	7.69%	17.824	152.177	5.057 ± 4.010	1.462	4.540	0.206 ± 0.132
Oncorhynchus keta	> 30 cm	0.30	9	23.08%	12.116	4112.458	192.758 ± 113.933	30.266	2664.264	189.220 ± 86.580
Oncorhynchus kisutch	> 30 cm	0.30	1	2.56%	11.447	11.447	0.294 ± 0.297	16.014	16.014	0.411 ± 0.416
Oncorhynchus nerka	≤ 30 cm	0.40	5	12.82%	8.002	226.817	11.715 ± 7.671	1.584	39.391	2.047 ± 1.323
Oncorhynchus nerka	> 30 cm	0.30	9	23.08%	10.345	559.095	37.261 ± 19.997	15.249	412.240	31.103 ± 15.667
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	5.13%	9.073	17.824	0.690 ± 0.514	1.461	3.244	0.121 ± 0.091
Oncorhynchus tschawytscha	> 30 cm	0.30	7	17.95%	12.097	148.809	11.641 ± 5.440	11.057	171.479	14.655 ± 6.705

Table 127

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 8 (number of trawl stations 148)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	35	23.65%	8.189	7033.630	87.304 ± 49.822	0.803	511.437	8.490 ± 4.011
Oncorhynchus gorbuscha	> 30 cm	0.30	4	2.70%	12.035	13.971	0.349 ± 0.174	14.222	18.440	0.463 ± 0.231
Oncorhynchus keta	≤ 30 cm	0.40	8	5.41%	8.989	55.230	0.945 ± 0.434	0.492	4.768	0.096 ± 0.042
Oncorhynchus keta	> 30 cm	0.30	110	74.32%	13.129	14403.514	1128.389 ± 135.575	6.000	8179.984	761.937 ± 84.780
Oncorhynchus kisutch	≤ 30 cm	0.40	12	8.11%	8.382	33.455	1.061 ± 0.348	1.762	7.661	0.270 ± 0.087
Oncorhynchus kisutch	> 30 cm	0.30	26	17.57%	11.370	339.729	9.709 ± 3.128	4.668	123.989	5.405 ± 1.378
Oncorhynchus nerka	≤ 30 cm	0.40	20	13.51%	7.688	194.469	5.131 ± 1.777	0.849	32.202	1.009 ± 0.337
Oncorhynchus nerka	> 30 cm	0.30	103	69.59%	13.129	2610.946	249.411 ± 35.364	8.520	1928.512	227.225 ± 30.763
Oncorhynchus tschawytscha	≤ 30 cm	0.40	20	13.51%	8.189	55.230	2.563 ± 0.693	1.326	14.567	0.608 ± 0.178
Oncorhynchus tschawytscha	> 30 cm	0.30	87	58.78%	10.919	899.419	49.920 ± 9.199	5.021	933.711	60.942 ± 10.693

Table 128

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 9 (number of trawl stations 35)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	2.86%	221.992	221.992	6.343 ± 6.435	28.113	28.113	0.803 ± 0.815
Oncorhynchus gorbuscha	> 30 cm	0.30	1	2.86%	71.365	71.365	2.039 ± 2.069	96.831	96.831	2.767 ± 2.807
Oncorhynchus keta	≤ 30 cm	0.40	3	8.57%	25.533	310.789	10.554 ± 9.038	1.609	25.334	0.854 ± 0.737
Oncorhynchus keta	> 30 cm	0.30	8	22.86%	30.360	3018.513	109.361 ± 87.412	50.398	1849.622	85.092 ± 54.424
Oncorhynchus kisutch	≤ 30 cm	0.40	1	2.86%	195.353	195.353	5.582 ± 5.663	61.669	61.669	1.762 ± 1.788
Oncorhynchus nerka	≤ 30 cm	0.40	2	5.71%	246.814	639.338	25.319 ± 19.669	48.018	109.975	4.514 ± 3.441
Oncorhynchus nerka	> 30 cm	0.30	5	14.29%	37.441	1066.692	51.439 ± 34.408	23.775	1222.032	48.757 ± 36.380
Oncorhynchus tschawytscha	≤ 30 cm	0.40	4	11.43%	36.165	150.955	8.695 ± 4.959	5.931	32.864	1.798 ± 1.065
Oncorhynchus tschawytscha	> 30 cm	0.30	1	2.86%	35.519	35.519	1.015 ± 1.030	43.380	43.380	1.239 ± 1.258

Table 129

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 10 (number of trawl stations 12)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	8.33%	6.624	6.624	0.552 ± 0.577	0.318	0.318	0.026 ± 0.028
Oncorhynchus keta	> 30 cm	0.30	3	25.00%	8.832	18.415	3.662 ± 2.102	44.159	133.693	20.371 ± 12.623
Oncorhynchus nerka	≤ 30 cm	0.40	1	8.33%	6.624	6.624	0.552 ± 0.577	0.185	0.185	0.015 ± 0.016
Oncorhynchus tschawytscha	≤ 30 cm	0.40	3	25.00%	14.175	63.609	9.242 ± 5.974	1.758	9.796	1.277 ± 0.880

Table 130

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 11 (number of trawl stations 19)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	10.53%	12.820	52.857	3.457 ± 2.903	1.154	4.757	0.311 ± 0.261
Oncorhynchus keta	≤ 30 cm	0.40	1	5.26%	158.572	158.572	8.346 ± 8.575	13.214	13.214	0.695 ± 0.715
Oncorhynchus keta	> 30 cm	0.30	2	10.53%	24.408	62.884	4.594 ± 3.579	74.445	209.822	14.961 ± 11.826
Oncorhynchus tschawytscha	≤ 30 cm	0.40	3	15.79%	11.598	17.968	2.384 ± 1.357	1.728	2.515	0.317 ± 0.181

Table 131

Salmon abundance in epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 12 (number of trawl stations 146)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	67	45.89%	6.878	47780.333	856.242 ± 345.102	0.481	2943.644	66.405 ± 22.220
Oncorhynchus gorbuscha	> 30 cm	0.30	18	12.33%	11.246	649.476	13.083 ± 5.247	15.177	834.822	17.448 ± 6.846
Oncorhynchus keta	≤ 30 cm	0.40	39	26.71%	8.508	3354.861	82.517 ± 32.242	0.429	371.184	7.027 ± 3.089
Oncorhynchus keta	> 30 cm	0.30	125	85.62%	8.381	2965.881	447.365 ± 47.002	7.794	3568.412	444.716 ± 44.268
Oncorhynchus kisutch	≤ 30 cm	0.40	42	28.77%	7.904	295.708	12.476 ± 2.762	1.747	85.920	3.270 ± 0.763
Oncorhynchus kisutch	> 30 cm	0.30	14	9.59%	11.509	181.506	3.496 ± 1.437	4.620	66.533	2.542 ± 0.814
Oncorhynchus nerka	≤ 30 cm	0.40	32	21.92%	7.813	926.310	26.277 ± 8.659	0.353	122.937	3.230 ± 1.092
Oncorhynchus nerka	> 30 cm	0.30	126	86.30%	11.246	2026.905	266.133 ± 31.691	7.639	3076.169	258.466 ± 35.189
Oncorhynchus tschawytscha	≤ 30 cm	0.40	59	40.41%	8.021	335.273	25.674 ± 4.234	0.891	46.252	3.870 ± 0.621
Oncorhynchus tschawytscha	> 30 cm	0.30	51	34.93%	10.300	107.854	7.749 ± 1.278	5.385	239.340	14.479 ± 2.679

Table 132

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 1 (number of trawl stations 17)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	11.76%	7.217	9.292	0.971 ± 0.691	0.446	0.837	0.075 ± 0.056
Oncorhynchus keta	≤ 30 cm	0.40	2	11.76%	27.248	28.868	3.301 ± 2.331	2.025	2.685	0.277 ± 0.198
Oncorhynchus keta	> 30 cm	0.30	4	23.53%	12.110	71.494	7.599 ± 4.560	100.757	310.735	38.728 ± 20.909
Oncorhynchus nerka	≤ 30 cm	0.40	2	11.76%	18.165	64.952	4.889 ± 4.023	1.953	7.368	0.548 ± 0.455
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	5.88%	9.083	9.083	0.534 ± 0.551	1.780	1.780	0.105 ± 0.108
Oncorhynchus tschawytscha	> 30 cm	0.30	5	29.41%	9.623	24.780	4.036 ± 1.793	22.839	242.088	27.801 ± 15.655

Table 133

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 2 (number of trawl stations 28)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus keta	≤ 30 cm	0.40	1	3.57%	27.078	27.078	0.967 ± 0.985	0.821	0.821	0.029 ± 0.030
Oncorhynchus keta	> 30 cm	0.30	6	21.43%	11.058	225.278	20.481 ± 10.513	42.353	852.252	85.854 ± 41.671
Oncorhynchus kisutch	> 30 cm	0.30	1	3.57%	12.515	12.515	0.447 ± 0.455	53.816	53.816	1.922 ± 1.957
Oncorhynchus nerka	≤ 30 cm	0.40	2	7.14%	9.026	9.387	0.658 ± 0.465	0.375	0.866	0.044 ± 0.034
Oncorhynchus nerka	> 30 cm	0.30	1	3.57%	37.546	37.546	1.341 ± 1.366	24.280	24.280	0.867 ± 0.883
Oncorhynchus tschawytscha	> 30 cm	0.30	9	32.14%	11.340	156.451	17.482 ± 7.154	23.869	202.170	37.999 ± 12.589

Table 134

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 3 (number of trawl stations 24)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	4.17%	9.008	9.008	0.375 ± 0.383	0.423	0.423	0.018 ± 0.018
Oncorhynchus keta	≤ 30 cm	0.40	6	25.00%	17.576	315.263	21.696 ± 13.646	0.624	24.870	1.895 ± 1.108
Oncorhynchus keta	> 30 cm	0.30	8	33.33%	11.398	4200.558	301.255 ± 193.921	23.071	6723.282	541.840 ± 323.228
Oncorhynchus nerka	≤ 30 cm	0.40	6	25.00%	9.837	151.822	10.632 ± 6.587	1.426	28.762	1.841 ± 1.243
Oncorhynchus nerka	> 30 cm	0.30	5	20.83%	11.246	372.527	30.595 ± 20.215	10.403	224.218	20.317 ± 12.956
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	8.33%	9.294	9.837	0.797 ± 0.563	0.911	2.990	0.163 ± 0.131
Oncorhynchus tschawytscha	> 30 cm	0.30	10	41.67%	10.460	140.611	13.684 ± 6.404	10.880	100.384	16.642 ± 5.584

Table 135

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 4 (number of trawl stations 23)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	2	8.70%	8.663	91.709	4.364 ± 4.078	0.754	8.584	0.406 ± 0.382
Oncorhynchus keta	≤ 30 cm	0.40	4	17.39%	9.191	752.014	42.570 ± 34.136	0.653	73.413	3.873 ± 3.291
Oncorhynchus keta	> 30 cm	0.30	8	34.78%	12.508	318.611	24.269 ± 14.259	23.010	851.561	58.236 ± 37.834
Oncorhynchus nerka	≤ 30 cm	0.40	6	26.09%	8.521	91.709	6.702 ± 4.130	0.700	14.398	0.924 ± 0.641
Oncorhynchus nerka	> 30 cm	0.30	3	13.04%	12.443	61.271	4.358 ± 2.937	14.443	42.387	3.405 ± 2.132
Oncorhynchus tschawytscha	> 30 cm	0.30	8	34.78%	12.330	122.543	15.475 ± 6.852	6.646	207.890	23.866 ± 11.234

Table 136

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 5 (number of trawl stations 32)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	7	21.88%	8.981	98.796	11.035 ± 4.875	0.440	8.633	0.886 ± 0.411
Oncorhynchus gorbuscha	> 30 cm	0.30	5	15.63%	10.595	59.072	3.962 ± 2.162	15.321	70.453	5.659 ± 2.936
Oncorhynchus keta	≤ 30 cm	0.40	7	21.88%	8.981	390.159	22.868 ± 12.831	1.356	41.917	2.121 ± 1.345
Oncorhynchus keta	> 30 cm	0.30	23	71.88%	8.974	8713.823	983.612 ± 314.455	9.711	8875.191	1280.492 ± 349.743
Oncorhynchus kisutch	> 30 cm	0.30	2	6.25%	11.458	12.183	0.739 ± 0.522	25.705	29.734	1.732 ± 1.228
Oncorhynchus nerka	≤ 30 cm	0.40	12	37.50%	7.839	391.438	30.338 ± 13.624	0.321	20.638	3.111 ± 1.061
Oncorhynchus nerka	> 30 cm	0.30	17	53.13%	10.242	2644.195	121.589 ± 83.883	5.725	1777.548	84.452 ± 56.415
Oncorhynchus tschawytscha	≤ 30 cm	0.40	1	3.13%	7.741	7.741	0.242 ± 0.246	1.099	1.099	0.034 ± 0.035
Oncorhynchus tschawytscha	> 30 cm	0.30	18	56.25%	10.133	259.027	24.904 ± 8.616	6.141	429.275	43.316 ± 14.793

Table 137

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 6 (number of trawl stations 10)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus tschawytscha	> 30 cm	0.30	2	20.00%	22.567	57.016	7.958 ± 6.213	107.643	344.759	45.240 ± 36.848

Table 138

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 7 (number of trawl stations 13)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	7.69%	18.174	18.174	1.398 ± 1.455	1.681	1.681	0.129 ± 0.135
Oncorhynchus gorbuscha	> 30 cm	0.30	1	7.69%	12.424	12.424	0.956 ± 0.995	15.307	15.307	1.177 ± 1.226
Oncorhynchus keta	≤ 30 cm	0.40	3	23.08%	17.824	152.177	15.171 ± 12.140	1.462	4.540	0.619 ± 0.391
Oncorhynchus keta	> 30 cm	0.30	9	69.23%	12.116	4112.458	578.274 ± 331.724	30.266	2664.264	567.660 ± 236.168
Oncorhynchus kisutch	> 30 cm	0.30	1	7.69%	11.447	11.447	0.881 ± 0.916	16.014	16.014	1.232 ± 1.282
Oncorhynchus nerka	≤ 30 cm	0.40	5	38.46%	8.002	226.817	35.144 ± 22.709	1.584	39.391	6.141 ± 3.910
Oncorhynchus nerka	> 30 cm	0.30	9	69.23%	10.345	559.095	111.782 ± 57.077	15.249	412.240	93.310 ± 44.014
Oncorhynchus tschawytscha	≤ 30 cm	0.40	2	15.38%	9.073	17.824	2.069 ± 1.546	1.461	3.244	0.362 ± 0.276
Oncorhynchus tschawytscha	> 30 cm	0.30	7	53.85%	12.097	148.809	34.924 ± 14.945	11.057	171.479	43.965 ± 18.289

Table 139

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 8 (number of trawl stations 95)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	35	36.84%	8.189	7033.630	136.011 ± 77.455	0.803	511.437	13.226 ± 6.218
Oncorhynchus gorbuscha	> 30 cm	0.30	4	4.21%	12.035	13.971	0.544 ± 0.270	14.222	18.440	0.721 ± 0.358
Oncorhynchus keta	≤ 30 cm	0.40	8	8.42%	8.989	55.230	1.472 ± 0.673	0.492	4.768	0.149 ± 0.065
Oncorhynchus keta	> 30 cm	0.30	95	100.00%	60.182	14403.514	1737.968 ± 183.551	53.310	8179.984	1169.850 ± 111.857
Oncorhynchus kisutch	≤ 30 cm	0.40	12	12.63%	8.382	33.455	1.653 ± 0.535	1.762	7.661	0.420 ± 0.134
Oncorhynchus kisutch	> 30 cm	0.30	26	27.37%	11.370	339.729	15.125 ± 4.801	4.668	123.989	8.421 ± 2.091
Oncorhynchus nerka	≤ 30 cm	0.40	19	20.00%	7.688	194.469	7.685 ± 2.726	0.849	32.202	1.514 ± 0.516
Oncorhynchus nerka	> 30 cm	0.30	95	100.00%	24.853	2610.946	357.226 ± 45.176	16.390	1928.512	327.435 ± 40.305
Oncorhynchus tschawytscha	≤ 30 cm	0.40	20	21.05%	8.189	55.230	3.994 ± 1.054	1.326	14.567	0.946 ± 0.272
Oncorhynchus tschawytscha	> 30 cm	0.30	84	88.42%	10.919	899.419	77.320 ± 13.578	5.021	933.711	94.291 ± 15.686

Table 140

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 9 (number of trawl stations 12)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	8.33%	221.992	221.992	18.499 ± 19.322	28.113	28.113	2.343 ± 2.447
Oncorhynchus gorbuscha	> 30 cm	0.30	1	8.33%	71.365	71.365	5.947 ± 6.212	96.831	96.831	8.069 ± 8.428
Oncorhynchus keta	≤ 30 cm	0.40	3	25.00%	25.533	310.789	30.783 ± 26.809	1.609	25.334	2.492 ± 2.187
Oncorhynchus keta	> 30 cm	0.30	6	50.00%	48.220	3018.513	313.350 ± 258.265	98.133	1849.622	239.164 ± 157.071
Oncorhynchus kisutch	≤ 30 cm	0.40	1	8.33%	195.353	195.353	16.279 ± 17.003	61.669	61.669	5.139 ± 5.368
Oncorhynchus nerka	≤ 30 cm	0.40	2	16.67%	246.814	639.338	73.846 ± 57.799	48.018	109.975	13.166 ± 10.091
Oncorhynchus nerka	> 30 cm	0.30	5	41.67%	37.441	1066.692	150.029 ± 99.214	23.775	1222.032	142.207 ± 106.426
Oncorhynchus tschawytscha	≤ 30 cm	0.40	4	33.33%	36.165	150.955	25.361 ± 13.895	5.931	32.864	5.245 ± 3.007
Oncorhynchus tschawytscha	> 30 cm	0.30	1	8.33%	35.519	35.519	2.960 ± 3.092	43.380	43.380	3.615 ± 3.776

Table 141

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 10 (number of trawl stations 12)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	1	8.33%	6.624	6.624	0.552 ± 0.577	0.318	0.318	0.026 ± 0.028
Oncorhynchus keta	> 30 cm	0.30	3	25.00%	8.832	18.415	3.662 ± 2.102	44.159	133.693	20.371 ± 12.623
Oncorhynchus nerka	≤ 30 cm	0.40	1	8.33%	6.624	6.624	0.552 ± 0.577	0.185	0.185	0.015 ± 0.016
Oncorhynchus tschawytscha	≤ 30 cm	0.40	3	25.00%	14.175	63.609	9.242 ± 5.974	1.758	9.796	1.277 ± 0.880

Table 142

Salmon abundance in upper epipelagic water layer irrespective of a season. The data of the years 1996-2004. Region # 12 (number of trawl stations 113)

Salmon species	Size group	k	Occurrence stn. number	Occurrence stn. share	Number, ind./km^2 minimal	Number, ind./km^2 maximal	Number, ind./km^2 average	Biomass, kg/km^2 minimal	Biomass, kg/km^2 maximal	Biomass, kg/km^2 average
Oncorhynchus gorbuscha	≤ 30 cm	0.40	53	46.90%	17.136	47780.333	954.462 ± 437.990	1.002	2943.644	75.427 ± 28.148
Oncorhynchus gorbuscha	> 30 cm	0.30	18	15.93%	11.246	649.476	16.903 ± 6.750	15.177	834.822	22.544 ± 8.804
Oncorhynchus keta	≤ 30 cm	0.40	35	30.97%	8.508	3354.861	104.901 ± 41.490	0.441	371.184	8.971 ± 3.979
Oncorhynchus keta	> 30 cm	0.30	111	98.23%	21.803	2965.881	556.486 ± 55.787	13.623	3568.412	552.769 ± 51.776
Oncorhynchus kisutch	≤ 30 cm	0.40	35	30.97%	7.904	295.708	13.289 ± 3.410	1.747	85.920	3.531 ± 0.951
Oncorhynchus kisutch	> 30 cm	0.30	13	11.50%	11.509	181.506	4.035 ± 1.794	4.620	66.533	3.053 ± 1.023
Oncorhynchus nerka	≤ 30 cm	0.40	29	25.66%	7.813	926.310	29.354 ± 10.773	0.353	122.937	3.545 ± 1.326
Oncorhynchus nerka	> 30 cm	0.30	108	95.58%	11.246	2026.905	299.982 ± 35.964	7.639	2870.347	272.477 ± 35.932
Oncorhynchus tschawytscha	≤ 30 cm	0.40	52	46.02%	8.021	335.273	29.889 ± 5.277	0.891	46.252	4.555 ± 0.774
Oncorhynchus tschawytscha	> 30 cm	0.30	49	43.36%	10.300	107.854	9.523 ± 1.577	5.385	239.340	18.220 ± 3.367

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