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**ICHTYOPLANKTON IN THE ESTUARY OF THE SUKHODOL RIVER**

**(USSURI BAY, SEA OF JAPAN)**

**© 2013 y. Y.V. Fedorets**

*Pacific Oceanological Institute of the Far East Branch,*

*of Russian Academy of Sciences, Vladivostok*

Ichthyoplankton estuary of the Sukhodol River represented by 25 species

belonging to 9 families, of which 5 species are harvested. Dominated by fish

larvae from the family Cyprinidae and Gobiidae. Maximum number of larvae

recorded in the summer periods, and the minimum - in spring and autumn. In its

zoogeographical characteristics there dominate species of the lowborealnye

complexes (17 species).

*Key words:* eggs, larvae, fishes, species, Sukhodol River, ichtyoplankton.

**INTRODUCTION OF THE RED KING CRAB INTO THE BARENTS SEA**

**AND ITS IMPACT ON THE ECOSYSTEM (A REVIEW).**

**2. COMPETITION WITH NATIVE SPECIES**

**© 2013 y. A.G. Dvoretsky**

*Murmansk Marine Biological Institute of Kola Science Centre RAS, Murmansk*

Analysis of consequences caused by the introduction of the red king crab into

the Barents Sea is continued in this paper. Different examples of crab

competition with native species are discussed. Food competition is possible with

a number of commercially important fishes and crustaceans. A reduced

abundance of the native lithodid crab *Lithodes maja* playing the same role in the

ecosystem and having similar diet is apparently associated with competition

between two crab species.

*Key words*: red king crab, Barents Sea, competition.

**COMPARATIVE ANALYSIS OF WEIGHT-DIMENSIONS RELATIONS OF THREE**

**COMMERCIAL MYTILID’S SPECIES (BIVALVIA) FROM THE SEA OF JAPAN**

**© 2013 y. Е.Е. Vekhova**

*Zhirmunsky Institute of Marine Biology RAS, Vladivostok*

The peculiarities of change of relationships between the dimension and the

different parameters of weight in three mytilid’s species from Vostok Bay,

the sea of Japan were examined. The age differences of rates of weight growth

of the mussels underlie in the ontogenetic and interspecific differences of the

body weight. The differences are discussed from the standpoint of functional

morphology and relatively the spatial distribution patterns of mollusks in coastal

areas of the sea.

*Key words*: mytilids, *Mytilus coruscus, Modiolus modiolus, Crenomytilus*

*grayanus,* Vostok bay, shell length*,* body weight, age.

**DISTRIBUTION AND THE STOCK OF ICELAND SCALLOP**

***(CHLAMYS ISLANDICA)* IN THE LOWER SUB LITTORAL**

**OF THE KOLA PENINSULA COSTAL ZONE (THE BARENTS SEA)**

**© 2013 y. P.N. Zolotarev**

*Polar Research Institute of Marine Fisheries and Oceanography, Murmansk*

Survey targeted of the Iceland scallop was carried out in 2010 at depth ranging

from 40 m to 100 m in the coastal waters of the Kola Peninsula. The scallop

beds were found in Varangerfjord and the area between the Seven Islands

archipelago and the Cape Svyatoy Nos Bay. The total biomass of Iceland

scallop over the survey area was estimated to be about 46 000 tons. Scallops

from 10 mm to 24 mm shell height prevailed in catches in the Vrangerfjord

while large scallops from 70 mm to 85 mm dominated in catches in the eastern

parts of the survey area. Near 20% of all scallops in the area around the Seven

Islands archipelago had indications of a fungal infection.

*Key words:* Iceland scallop, the Barents Sea, distribution, stock, size

composition, fungal infection.

**CURRENT DATA ON STURGEON POPULATION STATUS ON THE BORDER**

**OF THE MIDDLE AND LOWER AMUR**

**© 2013 y. V. N. Koshelev, V.Yu. Kolobov, A. P. Shmigirilov**

*Khabarovsk branch of the Pacific Research Fisheries Center, Khabarovsk*

Sturgeon population status on the border of the middle and lower Amur was

described. Data on a distribution of both sturgeon species in the studied area

was given. We marked a significant decrease of amur sturgeon and kaluga catch

sizes in comparison with data of 1963-1970. Size, sex and age composition was

specified. It was revealed that juvenile species prevailed in catches.

*Key words:* kaluga, amur sturgeon, the Amur, juvenile, distribution.

**NUTRITION OF VOLGA ZANDER (*SANDER VOLGENSIS*)**

**IN THE RYBINSKOE WATER RESERVOIR**

**© 2013 y. M.N.Ivanova, A.N.Svirskaya, A.S.Litvinov**

*Papanin Institute for Biology of Inland Waters RAS, Borok, Yaroslavl oblast*

For the first time the food structure of mature Volga zander was investigated

in Rybinskoe water reservoir during 1965-2008. It was established that

this reservoir it fed only on fish. Only 2 kinds of fish − a perch and a ruff were

the main diet component (74-98,2 %) of Volga zander unlike the

"kind-companion" of a pike perch for which the wide spectrum of food

was characteristic.

*Key words*: nutrition, Volga zander, pike perch, Rybinskoe water reservoir.

**PACIFIC COD IN THE NORTHWESTERN PART OF THE OKHOTSK SEA**

**© 2013 y. V. P. Ovsyannikov, A.Yu. Nemchenko, Yu.V. Sidyakov**

*Khabarovsk branch of the Pacific Research Fisheries Center, Khabarovsk*

Based on the results obtained during bottom trawl surveys conducted in

the northwestern part of the Okhotsk Sea in August-September 2000 and 2009,

we present data on biology and ecology of cod in the Territorial Sea and out

of its boundaries. On the basis of these materials a comprehensive characteristic

of this species in the studied area is given.

*Key words*: pacific cod, Okhotsk Sea, distribution, size, age, feeding.

**DYNAMICS OF STOCKS WALLEYE POLLOCK**

**© 2013 y. L.M. Zverkova**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow*

Results of the analysis of dynamics stocks of Walleye pollock *Theragra*

*chalcogramma* are presented. Substantial growth of a biomass of fish on all area

has occurred in the middle of 70-80 years of the XX-th century. The available

statistics catches and other indirect data testifies that the previous period high

biomass of this species was in the middle of 30-40 of the XX-th century.

The current state is characterized by a stock rate of a pollock below mean

annual on the basic part area. On a long-term time scale of high abundance and

biomass pollock reaches at approach of the period of strengthening of activity

of Aleutian Low.

*Key words*: Walleye pollock, stocks, dynamics, Okhotsk, Bering, Japan Seas,

Aleutian Low.

**ASSESSMENT OF THE MAGNITUDE OF POACHING CATCH**

**OF THE SIBERIAN STERLET – ACIPENSER RUTENUS MARSIGLII BRANDT**

**IN THE AVERAGE FLOW OF THE IRTYSH RIVER**

**© 2013 y. A.I. Litvinenko 1, A.A. Rostovtsev 2, V.F. Zaitsev 2, A.S. Bessarab 2**

*1 – “Gosribcentr”, Tumen*

*2 – Novosibirsk branch of “Gosribcenter” – West-Siberian Research Institute*

*of Bioresources and Aquaculture, Novosibirsk*

The data on the state of stocks and the value of the catch of the sterlet in the

Irtysh river within the limits of Omsk region are contains. The structure of the

population of sterlet are considered. The algorithms for calculation of volume of

poaching catch sterlet in the Irtysh river are provided. The principles of the

further development of the fishery sterlet are considered.

*Key words:* Irtysh river; sterlet, population structure, poaching, algorithms,

fishing reserves.

**COMPARATIVE ANALYSIS FOR GENETIC AND MORPHOMET-RIC**

**VARIABILITY OF HATCHERY JUVENILES AND SPAWNERS OF STELLATE**

**STURGEONS OF NORTH CASPIAN**

**© 2013 y. G.D. Ryabova 1, V.O. Klimonov , D.I. Vyshkvartsev 2, A.B. Ryabov 3**

*1 − Vavilov Institute of General Genetics RAS, Moscow*

*2 − Zhirmunsky Institute of Marine Biology RAS, Vladivostok*

*3 − Institute of Chemistry and Biology of Marine Environment, Oldenburg*

Size of adult male and fecundity of adult female of stellate sturgeon positively

correlates with the genotype homozygosity of the most frequent allele of

*PGM-1\** locus. Ural sturgeon demonstrate a greater fraction of such spawners in

comparison with Volga sturgeon, whose reproduction is affected by hatcheries.

Rearing fingerlings in ponds with low-density planting increases survival and

growth rate of juveniles with the genotypes dominant in natural spawning.

It may contribute to the growth of population size.

*Key words***:** hatchery, stellate sturgeon, genetic and morphometric variability.

**RESULTS OF TESTING THE DYNAMICS OF FISH CATCH BY BEAM TRAWL**

**IN PETER THE GREAT BAY**

**© 2013 y. A.N. Vdovin**

*Pacific Scientific Research Fisheries Center, Vladivostok*

Variations of the beam trawl fish catches are investigated for seven grounds in

Peter the Great Bay (Japan Sea). The catches dynamics and dispersion were not

species-specific, but depended on ecological features of fish species (either

near-bottom or pelagic-bottom mode of life) and their abundance and catch

frequency. Other factors like migration activity and aggregation density could

be essential, as well.

*Key words:* beam trawl, abundance, catch frequency, catch variability,

migration activity.

**PARASITIC FAUNA OF PACIFIC HERRING IN THE NORTHERN OKHOTSK SEA**

**© 2013 y. N.L. Aseeva, Z.I. Motora, S.V. Loboda**

*Pacific Scientific Research Fisheries Center, Vladivostok*

Parasitic fauna of pacific herring is investigated on the samples collected in the

northern Okhotsk Sea in 2002-2008, 18 species of parasites are founded.

Significant difference is revealed for parasitic infection in the northwestern and

northeastern parts of the Sea that confirms the conception on two populations of

herring in the northern Okhotsk Sea. The areas with the highest infestation are

revealed, in particular for *Anisakis simplex l.*, dangerous for human health.

*Key words:* parasitic fauna, pacific herring, infection, ecosystem.

**THE FISHING INDUSTRY OF THE MURMANSK REGION:**

**THE PRESENT CONDITION AND DEVELOPMENT PROSPECTS**

**© 2013 y. A.M. Vasiliev**

*Luzin Institute for Economic Studies of Kola Science Centre RAS, Apatity*

There are analyzed the main results of the fishing complex performance in the

Murmansk region in 2008-2010 (after the decisions of the Federal authorities

improved conditions of the fishing industry functioning): catching fish and sea

products, manufacture of fish products, export and deliveries of fish from the

sea abroad, unloading of fish in Murmansk, condition of the fishing fleet.

On the basis of studies of the domestic and foreign sea fishing there were

substantiated proposals directed to increasing efficiency of the fishing industry

in the Murmansk region and accelerate the upgrade fishing fleet by quota

holders.

*Key words:* sea fishing, the Murmansk region, analysis, substantiation,

prospects.

**THE INTERNATIONAL RELATIONS AND THE RUSSIAN RESEARCHES**

**IN THE FIELD OF MARINE FISHERIES IN THE EARLY PERIOD**

**PART 1. EUROPEAN SEAS**

**© 2013 y. A.I. Glubokov, N.R. Popova**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow*

We consider the Russian international relations in the field of marine fisheries

from the Middle Ages to the first quarter of the XX century in the Black, Azov,

Caspian, Barents and Baltic Seas. The survey includes little-known sources,

which allows to characterize the formation of the Russian international marine

fisheries interactions.

*Key words:* history of the international fisheries, marine fisheries law,

international fisheries management research.

**APPLICATION OF AERIAL PHOTOGRAPHY IN THE SEAWEED RESOURCE**

**RESEARCH OF THE BLACK SEA COAST WITHIN KRASNODAR REGION**

**© 2013 y. O.Y. Vilkova**

*Russian Federal Research Institute of Fisheries & Oceanography, Moscow*

Based on interpretation of aerial photographs of the Black Sea nearshore zone

within the Russian Federation it was established that the total area of the bottom

covered with seaweed is about 43 km2; the area of thickets with commercial

stock within the high productivity area between Capes Anapa and Idokopas

within a depth of 5 m is 17,6 km2. Almost all commercial stock of Cystoseira –

35 thousand metric tons is concentrated within this area. That's value should be

taken for estimation of the possible *Cystoseira* catch.

*Key words*: aerial photography interpretation, the Black Sea, macrophytes,

Cystoseira, stock.

**PRE-SPAWNING COHO SALMON *ONCORHYNCHUS KISUTCH* OF THE DRANKAZYMNIK**

**RIVER SYSTEM (KARAGINSKY BAY, NE KAMCHATKA)**

**© 2013 y. A.A. Yarzhombek**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow*

Analysis of coho salmon catch in the estuary of the Dranka-Zimnik river system

in august 2001: body size and mass rows, dynamcs of gonad-indexes.

On the basis of the scale-analysis, the formation of age structure

of the spawning school discussed.

*Key words:* coho salmon, estuary, length, age, growth, scale.

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**CURRENT STATE OF ZEISKO-BUREINSKY POPULATIONS OF KALUGA AND AMUR STURGEON**

**V.N. Koshelev1, D.V. Kotsyuk1, G.I. Ruban2**

*1 – Khabarovsk branch of Pacific Research Fisheries Center, Khabarovsk*

*2 – A.N. Severtsov's Institute of Ecology and Evolution of RAS, Moscow*

On the basis of research and literary data the current state of Zeisko-Bureinsky populations of kaluga *Acipenser dauricus* and amur sturgeon *Acipenser schrenckii* is described. It is shown that these populations have an extremely low abundance because of overfishing. The following measures are suggested to increase these species abundance: to reduce kaluga and amur sturgeon catches in the Middle and Upper Amur river and to build a new hatchery in Blagoveshchensk city.

*Key words*: kaluga, amur sturgeon, Zeisko-Bureinsky poations, overfishing.

**THE SIZE-AGE COMPOSITION AND DYNAMICS OF ABUNDANCE OF THREADED SCULPIN GYMNOCANTHUS PISTILLIGER (COTTIDAE) IN PETER THE GREAT BAY (SEA OF JAPAN)**

**© 2013 y. V.V. Panchenko**

*Pacific Research Fisheries Center, Vladivostok*

According to trawling surveys of 1991-2011, it is revealed that the threaded sculpin abundance’s variations have poorly expressed cyclic character. The highest level of the stock was observed in the beginning of 90th years. Last years the species is on the abundance reduction. Trade mortality shouldn't exceed 30 % of the commercial stock.

*Key words:* threaded sculpin, size, age, dynamics, abundance, stock, Peter the Great bay.

**THE BERING SEA POLLOCK (THERAGRA CHALCOGRAMMA) STOCK ASSESSMENT, AND IT’S FISHERIES IN THE NORTHERN BERING SEA IN EARLY 2010-S.**

**© 2013 y. М.А. Stepanenko, Е.V.Gritsay**

*Pacific Research Fisheries Centre, Vladivostok*

Pollock biomass and abundance in the Bering Sea recovered to an average levelin 2010 as result of incoming of some abundant year classes – in 2006, 2008 and 2009. Biomass estimated in 6,2 mln. t, and abundance – in 18.35x109 in 2010, in comparison with 2009 it’s higher on 87. 8,3% and 42,4% consequently. Distribution of postspawning and immature pollock in summer-autumn period into northwestern Bering Sea and Russian EEZ increased in 2010-2011.

*Key words:* pollock, Bering Sea, abundance, biomass, stock assessment, seasonal migrations, recruitment, fisheries.

**VARIATIONS OF REPRODUCTION EFFICIENCY OF PINK SALMON *ONCORHYNCHUS GORBUSCHA* AND CHUM SALMON *ONCORHINCHUS KETA* AT SPAWNING GROUNDS OF SAKHALIN ISLAND RIVERS**

**© 2013 y. A.A. Zhivoglyadov, A.A. Antonov, V.А. Rudnev, Kim Khe Yun**

*Sakhalin Research Institute of Fishing and Oceanography, Yuzhno-Sakhalinsk*

The results of studying the efficiency of reproduction of pink salmon *Oncorhynchus gorbuscha* and chum salmon *Oncorhynchus keta* in the Southern Sakhalin in 2007-2011 are represented. Statistically authentic distinctions in efficiency of pink salmon and chum salmon reproduction on spawning grounds of different channel zones are revealed. It is shown that the lowest indicators of embryonic stages survival rate are dated for spawning areas of a flat rivers part.

*Key words*: pink salmon*,* chum salmon, Southern Sakhalin, efficiency of reproduction, salmon river, channel zones.

**FISHERY OF *LYCODES SOLDATOVI* (ZOARCIDAE) IN THE SEA OF OKHOTSK IN 2000-2010**

**© 2013 y. O.Z. Badaev**

*Pacific Ocean scientific research fishery center, Vladivostok*

In the Okhotsk Sea *Lycodes soldatovi* produced as by-catch in different types of fishing. We consider the actual development of the fishery of this species. On the example of Greenland halibut longline fishing in the Sea of Okhotsk shows the efficiency of the fishery and the possible ways of rationalizing.

*Key words:* fishing efficiency, eelpout Soldatov, bycatch, discards, bottom longline.

**ON THE FUNCTIONAL STATE OF BLACK SEA TURBOT *SCOPHTHALMUS MAEOTICUS MAEOTICUS* DURING THE SPAWNING PERIOD OF 2009-2010**

**© 2013 y. N.E. Boiko, T.V. Strizhakova, O.A. Rudnitskaya, L.P. Ruzhinskaya, M.A. Morozova, E.A. Samarskaja, N.I. Tsema**

*Azov fisheries research institute, Rostov-na-Donu*

Results of morphological, microbiological, parasitological and biochemical analysis of the Black Sea turbot that spawned in the Russian shelf of the Black Sea in 2009-2010 are presented, as well as the parameters of cellular and humoral immune factors have also been considered. Some specificities concerning the reaction of fish with skin abnormalities and lesions (ulcers and neoplasms) are revealed.

*Key words*: turbot, spawning, skin pathology, physiological and biochemical parameters, microflora, parazitic fauna, Black Sea.

**PERSPECTIVE REGION FOR CULTIVATION OF JAPANESE SCALLOP (JAPAN SEA)**

**© 2013 y. D.D. Gabaev**

*A.V. Zhirmunsky Institute of Marine Biology, FEB RAS, Vladivostok*

In the result of collection larvas of Japanese scallop on collectors in sea farms of a mariculture it is revealed, that on water area of mean Primorye are supervised the more favourable conditions for its reproduction than in the south - in Peter the Great Bay. And dynamics of number of Japanese scallop on the average and southern regions have asynchronous nature. It allows sea farms of a mariculture of exchange landing material in case off year on one of them.

*Key words:* scallop, proportion of floors, larvae, young.

**ESTIMATION OF TRADE RETURN CASPIAN STELLATE STURGEON *AСIPENSER STELLATUS* FROM YOUNG FISH OF ARTIFICIAL REPRODUCTION**

**© 2013 y. G.F. Zykova1, L.A. Zykov2, F.V. Klimov2**

*1* – *The Caspian scientific research institute of a fish economy, Astrakhan*

*2* – *Astrakhan branch of the Kazakh Institute of Environmental Design (Kazekoprojekt), Astrakhan*

On the basis of the model describing change of generation number used by a fishing during life cycle, trade return stellate sturgeon from fingerling of artificial reproduction taking into account rates of maturity, periodicity of spawning and trade and natural death rate of individuals entering into its structure is defined. The role of artificial reproduction in formation of population abundance and catches structure is estimated. Recommendations about restoration and rational use of its stocks are made.

*Key words:* stellate sturgeon, artificial reproduction, number, a biomass, population, trade return.

**SPECIFICS OF THE GREY SEA URCHIN *STRONGYLOCENTROTUS INTERMEDIUS* JUVENILES NATURAL BAY (THE JAPAN SEA) REPRODUCTION AND GROWTH IN VLADIMIR**

**© 2013 y. V.A. Pavluychkov, N.A. Shepel**

*Pacific Research Fisheries Centre, Vladivostok*

The object of research is the grey sea urchin Strongylocentrotus intermedius, which is widespread in the coastal waters of northern Primorye. Found that a large number of the grey sea urchin larvae are drifted to Vladimir Bay, where they settle to the collector sets for sea scallop cultivation. Possibility of the settled grey sea urchin juvenile rearing up to viable stage in the growing cages and further settling on the depauperated open coastal fishing grounds is studied.

*Key words:* grey sea urchin, artificial reproduction, number of larvae, juvenile growth, Vladimir Bay.

**STATE AND PERSPECTIVES OF INVESTIGATIONS ON THE PROBLEM OF POND ECOSYSTEMS PRODUCTIVITY INCREASE AT STOCKING FISH REARING**

**© 2013 y. Z.I. Shmakova**

*All-Russian Scientific Research Institute of Freshwater Fisheries, p. Rybnoe, Moscow area*

Approaches to the ecosystem formation of growout ponds and new methods of natural food supply increase are being considered. Data on improvement of fish-farming characteristics for fish stock rearing (viability, average fish mass, natural and total fish productivity, decrease of mixed feeds expenditure) by methods of the directed influence on a pond ecosystem are being given.

*Key words*: productivity, natural food supply, influence on biotopes and biocenoses, fish, polyculture, effectivity of ponds ecosystem, function.

**PATHOLOGICAL CHANGES IN ORGANS AND TISSUES OF RAINBOW TROUT (ONCORHYNCHUS MYKISS) DUE TO VIRUS INFECTION PANCREATIC NECROSIS (IPN)**

**© 2013 y. N.N. Matvienko**

*Institute of Fisheries NAAS of Ukraine, Kiev*

Elucidation of the mechanisms of adaptation of fish to disease, the definition of the norm and pathology in modern conditions is an important scientific aspect. The article provides information about pathological changes in the organs and tissues of rainbow trout under the influence of infectious pancreatic necrosis virus. With the development of viral infection in the first place affects the liver, as demonstrated shift of certain cell functions, accompanied by a corresponding shift of cytologic characteristics.

*Key words*: virus, pathology, salmon, histology, organs, tissues.

**LYMPHOCYCTIS IN FLOUNDER (*PLATICHTHYS FLESUS* L*.*) IN THE RUSSIAN WATERS OF THE SOUTH BALTIC: DYNAMICS OF THE DISEASE PREVALENCE IN 2005-2010**

**© 2013 y. G.N. Rodjuk, S.V. Ivanov**

*Atlantic Research Institute of Marine Fisheries and Oceanography, Kaliningrad*

The study results on the dynamics of the lymphocystis prevalence in flounder

in the Russian waters of the ICES 26 Subdivision of the Baltic Sea in 2005-2010 are presented. The relations between the lymphocystis prevalence and fish biological parameters (length, age, sex) as well as environmental factors (surface and bottom temperature and of water salinity) are studied.

*Key words:* limphocystis, flounder, *Platichthys flesus*, Baltic Sea, prevalence.

**TO THE PROBLEM OF THE CASPIAN SEA (AREA OF RESPONSIBILITY OF THE RUSSIAN FEDERATION) STRATIFICATION FOR TRAWL SURVEYS**

**© 2013 y. T.I. Bulgakova1, V.K. Babayan1, D.A. Vasilyev1, A.I. Mikhailov1, I.A. Safaraliev2**

*1* – *Russian Federal Research Institute of Fisheries and Oceanography, Moscow*

*2* – *The Caspian scientific research institute of a fish economy, Astrakhan*

Methodological aspects of survey planning and processing with an example for the Northern Caspian Sea are considered. An example of region stratification and the procedure of estimation of density of Russian sturgeon (*Acipenser gueldenstaedtii*) by strata and their precision is presented.

*Key words:* stratificated survey, Russian sturgeon, the Caspian Sea, stock assessment.

**COMPARISON OF LENGTH FREQUENCY DISTRIBUTION OF ANTARCTIC KRILL (*EUPHAUSIA SUPERBA*) IN CATCHES OF CONVENTIONAL AND CONTINUOUS FISHERY TECHNIQUES**

**© 2013 y. D.O. Sologub**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow*

Combination of conventional and continuous techniques during krill fishery at the Russian commercial vessel «Maxim Starostin» allowed to compare the size structure of the Antarctic krill (*Euphausia superba*) caught by these two techniques. Differences between size composition of krill caught by conventional and continuous techniques of fishery which could be connected with the trawls selectivity weren’t found. We assume that the possible influence of differences between selectivity of fishing gears were exceeded by significant space-time variability of Antarctic krill.

*Key words*: Antarctic krill, South Orkney Islands, conventional and continuous techniques of fishery, selectivity of fishing gears, length frequency distribution.

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**BEHAVIOUR OF SALMONID FISHESW (SALMONINAE)**

**© 2013 y. A. A. Yarzhombek**

*Russian Research I nstitute of Fisheries and Oceanography, Moscow*

The lifestyle and behavior of fishes of subfamilie Salmoninae much in common,

but there are significant differences. They may dwell as at the bottom, and

at the pelagiс area. These lifestyles may vary in the course of ontogenesis.

Manifestation of aggressive and gregarious behavior can be seen in different

rate, not only in various species, but in various stages of ontogenesis, and also

on external condition in artificial environment.

*Keywords:* salmons, behavior, larvae, fingerlings, migration, spawning.

**INTRODUCTION OF THE RED KING CRAB INTO THE BARENTS SEA**

**AND ITS IMPACT ON THE ECOSYSTEM (A REVIEW).**

**3. ASSOCIATED ORGANISMS**

**© 2013 y. A. G. Dvoretsky**

*Murmansk Marine Biological I nstitute of Kola Science Centre RAS, 183010*

An analysis of consequences caused with introduction of the red king crab

concerning distribution of its associated organisms is continued in the article. No

invasive species were co-introduced with red king crab invasion. In the Barents

Sea, red king crabs became the most common intermediate host for the fish leech

*Johanssonia arctica*, a blood parasite of fishes. In general, negative impacts for

the Barents Sea ecosystem associated with distribution of its symbionts were not

found.

*Keywords*: red king crab, Barents Sea, symbionts, fouling organisms.

**Long -term changes in si ze structure of Iceland**

**scallop *Chlamys islandica* bed near the Cape Svyatoy Nos**

**(the Barents Sea )**

**© 2013 у. P. N. Z olotarev**

*Polar Research I nstitute of Marine Fisheries and Oceanography,*

*Murmansk, 183038*

Long-term changes in size composition of Iceland scallop bed near the Cape

Svyatoy Nos have been studied for the period 1991–2010. Regular and abundant

annual recruitment has been registered since 1996 till present in the eastern part

of the central region of the scallop bed. In all other parts of the bed no significant

settlement has been recorded for the last 15 years, resulting in gradual aging of

the scallop population.

*Keywords*: Iceland scallop, Barents Sea, size structure, recruitment.

**BIOLOGICAL CHARACTERISTICS OF THE EASTERN SUBSPECIES**

**OF ARCTIC GRAYLING *THYMALLUS ARCTICUS* PALLASI VALENCIENNES**

**OF THE UPPER KOLYMA’S BASIN AND THE MIDDLE KOLYMA’S ONE**

**(WITHIN THE MAGADANSKAYA OBLAST)**

**© 2013 y. A. E. Koposov**

*Federal State Budgetary I nstitution “Ochotskrybvod”, Magadan*

In this article the author analyzes age and size, morphology, some features of the

biology of reproduction, embryogenesis, nutrition of the Eastern subspecies of

arctic grayling of the upper and the middle Kolyma’s currents, the Kolymskoje

water storage basin and some Kolyma’s tributaries. Also the growing equation

and the natural mortality coefficient were calculated. Also there are data on catch

and it is written about the prospects.

*Keywords*: arctic grayling, Kolyma’s basin, morphology, size, equation of size,

development, nutrition, calculating, natural death-rate’s coefficients, age of full

sexual maturation, theoretical maximum age, economic significance.

**Dynamics of Japanese flounder *Pseudopleuronectes yokohamae***

**in Peter the Great Bay (Japan Sea )**

**© 2013 у. A. N. Vdovin, S. F. Solomatov, Yu. I. Zuenko**

*Pacific Recearch Fisheries Centre, Vladivostok, 690950*

Dynamics of Japanese flounder *Pseudopleuronectes yokohamae* abundance in

Peter the Great Bay (Japan Sea) is analyzed from 1984 to 2011. The stock of this

species was high in 1980–1990s, then sharply declined, and just recently began

to recover. Strength of the flounder year-classes was considerably determined by

its spawning stock, but depended also on environments of pre-wintering feeding

of yearlings described by temperature in the upper layer of the Intermediate water

in autumn. Using the reproductive model, the generations of 2010–2011 are

estimated as strong ones, that corresponds to 2–3-decades cyclicity in dynamics

of the Japanese flounder population.

*Keywords:* Japanese flouder, Pseudopleuronectes yokohamae, Peter the Great

Bay, Japan Sea, dynamics of abundance, year-class strength, spawning stock,

upwelling, anomalies of temperature, fish population modeling.

**ESTIMATION OF TRADE RETURN RUSSIAN CASPIAN STURGEON**

***AСIPENSER GUELDENSTAEDTII***

**FROM YOUNG FISH OF ARTIFICIAL REPRODUCTION**

**© 2013 y. L. A. Z ykov, G. F. Z ikova\* , M. I. Abramenko\*\***

*Astrakhan Branch of the Kazakh I nstitute of Environmental D esign,*

*Astrakhan, 414041*

*\*Caspian Scientific Research I nstitute of a Fish Economy,*

*Astrakhan, 414000*

*\*\*Southern Scientific Centre, Russian Academy of Sciences, Rostov-on-Don, 344006*

On the basis of the model describing change of generation number used by a fishing

during life cycle, trade return caspian russian sturgeon from fingerling of artificial

reproduction taking into account rates of maturity, periodicity of spawning and

trade and natural death rate of individuals entering into its structure is defined.

The role of artificial reproduction in formation of population abundance and

catches structure is estimated. Recommendations about restoration and rational

use of its stocks are made.

*Keywords:* russian sturgeon, artificial reproduction, number, a biomass,

population, trade return.

**Cultivation of cold water Crustacean in closed water systems**

**© 2013 у. D. V. Tyrin, N. P. Kovatcheva, A. V. Z higin**

*Russian Research I nstitute of Fisheries and Oceanography, Moscow, 107140*

Were determined the main parameters of the Red king crab and the American

lobster metabolism and researched the dynamic of nitrogen compounds

concentrations in the closed water systems (CWS). Were found the optimum

filler for a biofilter and that the introduction of the nitrogen source in combination

with a gradual decrease of water temperature allows intensification start up

period. Were developed recommendations for the design of CWS for Red king

crab and American lobster cultivation.

*Keywords:* Red king crab, American lobster, closed water systems (recirculation

systems), mariculture, Crustacean.

**FORECASTING OF PROSPECTIVE FISHING GROUNDS ON THE BASIS**

**OF REMOTE SENSING OF SEA SURFACE TEMPERATURE**

**IN CENTRAL-EAST ATLANTIC**

**© 2013 y. M. M. Dubishchuk, V. B. Lukatsky**

*Atlantic Research I nstitute of Marine Fisheries and Oceanography, Kaliningrad, 236022*

In order to improve the level of information provision for navigators and

other professionals in the fisheries sector a decision support system Fishing

Forecast in CEA was developed for specifying prospective fishing grounds. The

fundamentals of functioning as well as methodological principles that served as

a basis for the system were set out. The types of commercial forecasting were

described and a comparative analysis of recommendations provided with actual

situation was carried out based on the work of the Russian fleet in the CEA.

*Keywords:* Central-East Atlantic, forecast of fishing conditions, data base,

satellite data, fishery statistics, decision support system.

**A MODERN APPROACH TO THE MONITORING OF INFECTIOUS**

**HEMATOPOIETIC NECROSIS VIRUS (IHNV) IN KAMCHATKA POPULATIONS**

**OF SOCKEYE *ONCORHYNCHUS NERKA* (SALMONIFORMES, SALMONIDAE)**

**© 2013 у. S. L. Rudakova, E. V. Bochkova**

*Kamchatka Research I nstitute of Fishery and Oceanography, Petropavlovsk-Kamchatskii,*

*683000*

A sampling of mature fish must be done at the end of spawning in the spring

and summer subgroups for a reliable estimate of the IHNV epidemic situation

in the water resources to be established. It has been shown that the spring

subgroup caused instability in the percentage of IHNV among sockeye from

Kamchatka Lakes. The prevalence of IHNV in the annual population of sockeye

from Azabachie Lake (0,16) is significantly below that of Kurilskoe Lake (0,41)

and Nachikinskoe Lake (0,32). A statistically significant trend in the variance of

IHNV prevalence over time was not detected.

*Keywords:* sockeye salmon, Kamchatka, infectious hematopoietic necrosis virus,

monitoring, epidemiology.

**The International Relations and the Russian Researches**

**in the Field of Marine Fisheries in the Early Period .Part 2. Far Eastern seas**

**© 2013 y. A. I. Glubokov, N. R. Popova**

*Russian Federal Research I nstitute of Fisheries and Oceanography, Moscow, 107140*

We consider the Russian international relations in the field of marine fisheries

from the Middle Ages to the first quarter of the XX century in the Far Eastern

Seas. The survey includes little-known sources, which allows to characterize the

formation of the Russian international marine fisheries interactions.

*Keywords*: history of the international fisheries, marine fisheries law, international

fisheries management research.

**ON MATHEMATICAL DESCRIPTION OF GILLNET SELECTIVITY**

**© 2013 у. F. S. Lobyrev, E. A. Kriksunov, А. Е. Bobyrev\*, V. A. Byrmensky**

*Lomonosov Moscow State University*

*\* Severtsov I nstitute of Ecology and Evolution of the Russian Academy of Sciences*

Gillnet selectivity is described on the basis of a physical model of interaction

between fish and gillnet. The key approach is to describe the processes of 1)

entrance the fish into mesh, and 2) retention of fish in mesh. Analysis of the

mechanics of the interaction between fish and gillnet provides a conclusion

about mathematical functions that describe the probability of (i) entrance into

mesh and (ii) retention in mesh. It is suggested about the nature of the formation

of uninomodal and polymodal length frequency distributions of catch.

*Keywords:* gillnet selectivity, model, size group frequency, length class.

**APPLICATION OF THE DATA OF THE THERMAL CONDITIONS SATELLITE**

**MONITORING IN ASSESSMENT AND PREDICTION OF THE FISHERY**

**CONDITIONS IN THE CENTRAL-EASTERN ATLANTIC OCEAN**

**© 2013 у. V. B. Lukatskiy, M. M. Dubischuk, G. E. Maslyankin**

*Atlantic Scientific Research I nstitute of Marine Fisheries*

*and Oceanography, Kaliningrad, 236022*

The uniform data base of fishery and hydrological data (DB “Prom-Hydro CEA”)

for CEA has been created for the purpose of precise diagnostics of the fishing

conditions and more precise assessment of the relationship with environment

conditions variability. The optimal SST values for formation of commercial

aggregations of jack mackerel (*Trachurus trecae*) and horse mackerel (*Trachurus*

*trachurus*) in EEZ of Morocco and Mauritania were found. The new informational

quantitative characteristics and indicators of commercial fishes distribution and

migration peculiarities were obtained.

*Keywords*: the central-eastern atlantic ocean, jack mackerel, database, satellite

data, fishery statistics, thermal conditions.

**SCIENTIFIC AND RESEARCH FISHERY OF THE TOOTHFISH**

**IN THE SUBAREA 88.3 (THE BELLINSGHAUSEN SEA) IN 2010–2012.**

**© 2013 у. A. F. Petrov, V. A. Tatarnikov, I. I. Gordeev, E. F. Uryupova**

*Russian Federal Research I nstitute of Fisheries and Oceanography, Moscow, 107140*

Scientific and research fishery of toothfish of the genus *Dissostichus* was carried

out by Russia in the Subarea 88.3 (the Bellingshausen Sea) in the seasons

2010–2011 and 2011–2012. Obtained data further basic goals of the research for

data-poor area (SC-CAMLR-XXX/5, par. 2.26–2.29, 2011). A total stock of the

toothfish has been estimated in the 1466 to 2026 tones range using the program

“Chartmaster”, while 3433 tones using an areal method in the SSRUs B, C, D.

*Key words:* Antarctic toothfish, trot-line, longline set, biological analysis, length

composition of catches, by-catch of accompanying species.

**ABOUT CAPTURES OF SKILLFISH *ERILEPIS ZONIFER* (ANOPLOPOMATIDAE)**

**IN THE NEAR SURFACE LAYER TO THE EAST FROM KURIL ISLANDS**

**© 2013 y. Yu. N. Poltev, A. O. Shubin**

*Sakhalin Research I nstitute of Fisheries and Oceanography, Y uzhno-Sakhalinsk, 693023*

Studies performed in Pacific waters demonstrated that the skillfish in the near

surface layer to the east from Kuril Islands meets in August. The absolute length

of these individuals has made 38.5–52 cm. The Superficial temperature of water

at which they have been caught see, changed in limits 7.7–10.1°С.

*Keywords:* the skillfish, *Erilepis zonifer*, waters to the east of Kuril Islands.

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**Azov Fisheries Resear ch Institute is 85 years old**

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*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

The history of foundation of our Instituite is considered, the basin and scope

of its activity are indicated, and the most considerable results obtained for the

period of the Institute’s existence are enumerated. The leading scientists who

established the Institute and were in charge of the main research activities are

mentioned.

*Keyword*s: institute, history, science, results.

**FISH STOcKS AND FISHERIES IN THE AZOV AND BLACK SEA BASIN**

**© 2013 у. S. I. D udkin, Yu.I. Rekov, V. D . D akhno , E. M. Saenko**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Materials are presented that characterize the status of water biological resources

in the Azov and Black Sea Basin and sustainable use of fishery resources under

current conditions. The main problems of fisheries development and fishing

efficiency have been specified.

*Keywords:* Azov and Black sea fishery basin, water biological resources, fish

stocks, fisheries.

**Hypoxia and its ecologi cal conseq uences in the Sea of Azov**

**© 2013 г. Z . V. Aleksandrova, T. E. Baskakova**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Based on long-term data (1960–2012) we have considered changes in the

boundaries of hypoxic zones in the Azov Sea in summer. The most important

factors determining hypoxia development in the near-bottom sediments have

been revealed. It is shown that the primary reason of near-bottom oxygen

deficiency in an eutrophic water body with sufficient amounts of organic matter,

such as the Azov Sea, is the considerable consumption of oxygen to oxidize the

organic matter, primarily, of bottom sediments, and the trigger mechanism is the

vertical stability of water masses.

*Keywords:* oxygenation, oxygen deficiency in the near-bottom layer, biochemical

oxygen consumption in the surface layer of bottom sediments, organic carbon,

hydrobionts death, redox processes.

**Spe cifi c fea tures of zoobe nthos deve lopme nt and fee ding**

**of the Azov ro und gob y *Neogobius melanostomus***

**under conditio ns of increase d sa linity**

**© 2013 г. U . N . Aleksandrova, I. G. Korpakova, L. N . Frolenko**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

The increased salinity of 2006–2011 in the Azov Sea has resulted in the

transformation of hydrobiont communities including zoobenthos. The

following species dominate now in the eastern Taganrog Bay: *Oligochaetae*

and *Chironomidae* larvae but in the western part of the bay *Cerastoderma*

*glaucum*, *Abra ovata* and *Hydrobia* mollusks are predominant. *Gastropoda* and

*polychaeta* dominate in the sea proper, primarily, in hypoxic zones; bivalves

are observed in other regions. In the sea the zoobenthos biomass amounted to

86.5 g/m2 in summer and to 139.1 g/m2 in autumn, while in the bay the biomass

averaged 39.5 g/m2 and 49.4 g/m2, respectively. Round goby occurr all over the sea and the bay, with the greatest density in the south-western part of the

sea proper. The fish prefer areas where zoobenthos is abundant. In the sea

proper and in the western body of the bay about 90% of the fish diet consists of

mollusks (in particular, *Cerastoderma glaucum*), in the eastern bay *Polychaeta*,

shellfish and fish prevail in the goby’s diet. The composition and distribution

of zoobenthos, the distribution, size and weight characteristics of round goby

and its feeding corresponded to the parameters observed in 1951–1957 when a

similar salinization had taken place after the regulation of the river Don.

*Keywords*: Azov Sea, salinity, zoobenthos, round goby, biomass, population.

**DYN AMICS OF FISHABLE STOCKS OF HAARDER IN THE AZOV SEA**

**© 2013 y. V. B. Besedin, Yu. I. Rekov**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

The haarder which acclimatized to the conditions of the Azov Sea is at present the

only commercial fish with a large body. In 1997–2012 its fishable stocks ranged

from 8 to 33 th tons. From 2009 we observe a decreasing trend in its fishable stocks.

High abundance of the fish can be restored and sustainable catch can be ensured on

the condition that the haarder yield is limited and its reproduction is successful.

*Keywords*: fishable stocks, haarder, age composition.

**STATU S OF CRAYFISH POPUL ATIONS, ITS STOCKS AND FISHERIES IN THE**

**WATER BODIES OF THE AZOV-DON REGION**

**© 2013 у. E.Yu. Glushko, I. A. Glotova**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Population dynamics, stocks and fisheries of crayfish in the present period

have been characterized and their trends are revealed. Recommendations are

developed on the forecasting, conservation and rational use of the Kuban crayfish

stocks. We have revealed some factors that can hinder the crayfish reproduction,

abundance, stocks and catches.

*Keywords*: Kuban crayfish, population structure, abundance, stocks, fisheries.

**PRESENT -DAY STATU S OF THE BLACK SEA SPRAT**

**IN THE RUSSIAN WATERS OF THE BLACK SEA**

**© 2013 y. V. D . D akhno , O. A. Perevalov**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Materials have been summarized on biological specific features of sprat, its stock

dynamics, distribution and harvest in the Russian territorial waters of the Black

Sea from 1993 to 2012. Principal causes of stocks’ decrease and poor harvest of

the sprat are revealed.

*Keywords*: sprat, store, craft, allocation, Black Sea.

**HYD ROMETEOROLOGICAL REGIME OF THE NORTH-EASTERN BLACK SEA**

**(BY RESULT S OF SURVEYS OF 2001–2010)**

**© 2013 y. S.V. Zhukova, V.M. Shishkin, A.P. Kuropatkin, L.A. Lutynskaya,**

**I.F. Fomenko, T.I. Podmareva, D.S. Burlachko, V.G. Karmanov**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

The materials of research surveys undertaken in the Black Sea in 2001–2010

as well as the data of Russian hydrometeorological service have allowed us to

reveal some specific features of the present-day hydrometeorological regime.

*Keywords*: water temperature, salinity, transparency, water color, long-term

period.

**Natura l repro ductio n of semi -migra tor y fish**

**in the Us t-Manych reservoir wi th prospe cts for res tora tio n of the Do n fish stocks**

**© 2013 у. I. N . Ivanchenko, N. I. Syrovatka**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Results of studies on the Don species of semi-migratory fish in the Ust-Manych

reservoir are presented and the effectiveness of spawning grounds has been

characterized. The bypass channel of the Ust-Manych hydropower station was

surveyed during spring and summer fish anadromous migrations in 2009–2011.

In two branches of the channel we found aggregations of mature migrants of

fish species as zander, bream, roach, carp and vimba. Indigenous species such

as zander volgensis, prussian carp, white bream, river perch and others were

also observed. The stocking capacity of spawning grounds of the reservoir will

increase if the hydrological regime of this waterbody is developed and maintained.

The commercial return of the young grown there will provide greater yields of

valuable fish species, e.g. up to 359 tons of zander and to 279 tons of bream.

*Keywords*: Ust-Manych reservoir, by-pass channel, spawning, semi-migratory

fish, bream, pike perch.

**Cha nges in sa linity of the Azov Sea**

**© 2013 y. A. P. Kuropatkin, S. V. Z hukova, V. M. Shishkin, D. S. Burlachko,**

**V. G. Karmanov, L. A. L utynskaya, I. F. Fomenko, T. I. Podmareva**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Some specific features of changes in salinity and dynamics of freshened waters

of the Azov Sea have been considered over the period 1960–2012.

*Keywords*: salinity, freshening, salinity increase, stabilization, freshened zone,

isohaline.

**Dynami cs of ichthyop lankton dis trib utio n in the nor theas**

**ter n par t of the Black Sea**

**© 2013 у. V. P. N adolinski, O. A. Perevalov**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Fish survivability at early stages of their life is very important not only for

the formation of individual generations but for the whole fish stocks as well.

Ichthyoplankton distribution in the Black Sea is determined by season, egg

buoyancy, depth at which spawning takes place, speed and direction of water

flow and wind intensity. Based on the studies conducted over 2000–2012 we

have revealed the regions and periods of the greatest egg and larvae aggregations

of the Black Sea fish species.

*Keywords:* ichthyoplankton, eggs, larvae, distribution, depth*.*

**THE PRESENT -DAY STATU S OF SEMI-MIGRATORY FISH (PIKE PERCH**

**AND ROACH) OF THE AZOV SEA AND MEASURES TO IMPROVE FISH HABITAT**

**IN THE EASTERN AZOV WATER BODIES**

**© 2013 у. E. A. Poroshina, N. I. Syrovatka, S. I. D udkin**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Data on conditions and efficiency of natural propagation of pike perch and

roach in the water bodies next to the Azov Sea are presented. Potential abilities

of the fish husbandry are shown to be still high in the eastern region despite

considerable changes in the bioecological environment. Reasons have been

analyzed of the low propagation efficiency observed last years, and the necessity

to conduct some optimization measures is discussed.

*Keywords:* eastern water bodies adjoining the Azov Sea, pike perch, roach,

propagation efficiency, ichthyofauna.

**MATU RATION SPECIFICITIES AND PATHOLOGY OF REPRODUCT IVE PRODUCT S OF RED MULL ET *MULLUS BARBATU S PONTICUS* AND WHITING**

***ODONTOGA DUS MERLANGUS EUXINUS* IN THE BLACK SEA**

**© 2013 y. S. G. Sergeeva, G. G. Kornienko, E. A. Samarskaya, I. V. Shishkina,**

**N. I. T sema**

*Azov Fisheries Research I nstitute, Rostov-on-Don 344002*

Results are presented of studies on physiology and maturation of red mullet

and whiting that were conducted in 2009–2011. Prolonged spawning of the

fish affects their metabolic characteristics. High content of proteins, fats and

carotinoids necessary for gametogenesis is kept in the liver and muscles of red

mullet. High content of fats in liver (77%) is typical for whiting with its almost

all-year-round spawning. Continuous type of vitellogenesis and the fractional

type of spawning determine the great amount of yolk oocytes of different size

and the maturation of reserved oocytes.

*Keywords*: red mullet, whiting, gonads, oocytes, maturation stage, physiological

status.

**REPRODUCT IVE ASSESSMENT OF ROUND GOBY *NEOGOBIUS***

***MELANOSTOMU S* FROM THE AZOV SEA IN THE PRESENT DAY PERIOD**

**©2013 y. N . I. T sema, E. A. Samarskaya, S. I. D udkin**

*Azov Sea Research Fisheries I nstitute, Rostov-on-Don, 344002*

Physiological and biochemical parameters of round goby breeders from the

Azov Sea have been studied during their spawning and the results are presented.

The reproductive abilities are shown to be decreased in the females sampled in

some investigated areas. We have come to a conclusion that slow transportation

of trophic substances from the liver to the gonads can decrease the reproductive

potential of breeders, and finally can be a cause of low fish fecundity and poor

viability of the progeny.

*Keywords*: round goby, Azov Sea, gonadosomatic index, hepatosamatic index,

liver, oocytes, fecundity, carotinoids.

**CHARACT ERISTICS OF PLANKTONIC COMMUN ITY OF CILIATES**

**FROM THE AZOV SEA**

**© 2013 у. N . A. Shlyakhova**

*Russian Federal Azov Fisheris Research I nstitute, Rostov-on-Don, 344002*

Taxonomic composition: shell-less brackishwater oligotrichidaes are

predominant. The size of ciliates of the Azov Sea ranges from 10 to 200 micron.

Small organisms dominate in the Taganrog Bay, in the sea proper the larger

ciliates occur more often; the portion of large organisms increases towards

autumn, though the portion of small-sized infusoria has grown last years. The

annual values of the plankton abundance and biomass amount to 6.7 mln ind./

m3 and 216 mg/m3 in the Taganrog Bay and to 4.7 mln ind./m3 and 237 mg/m3

in the sea proper.

*Keywords*: taxonomic composition, size of ciliates, abundance, biomass.

**THE IMPORTANC E OF NATU RE PROTECT ION STUD IES IN THE AZOV-BLACK**

**SEA BASIN AND PROBLEMS OF THEIR IMPLEMENT ATION**

**© 2013 y. I. G. Korpakova**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

We have considered problems of carrying out nature protection studies in the Azov

and Black Sea basin and the improvement of these investigations’ efficiency.

*Keywords:* nature protection research, water bioresources, sea regime, Azov-

Black Sea basin, efficiency.

**RARITY OF MACROPHYT OBENT HOS COMMUN ITIES FROM THE BLACK SEA**

**RUSSIAN SHELF**

**© 2013 y. D . F. Afanasyev, M. M. Sereda\***

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

*\*Southern Federal U niversity, Rostov-on-Don, 344007*

The Black Sea macrophytobenthos communities from the Russian shelf have

been revealed by the Braun-Blanquet method and their rarity has been assessed.

It has been shown that the Mediterranean syntaxa found at the borders of their

habitat in the Black Sea and considered as conditionally clean water dwellers

(classes Lithophylletea and Cystoseiretea, order Cystoseiretalia), as well as

phytocenoses with Zostera (class Zosteretea), include maximum number of

species occurring in confined and particular habitats and characterized by low

abundance.

*Keywords*: rarity, communities, macrophytic algae, syntaxonomy, Black Sea,

Russian shelf.

**THE COASTAL BIOCENOSES OF ABRAU PENINSUL A IN THE BLACK SEA**

**OVER 2010–2012**

**© 2013 у. D . F. Afanasyev, I. E. T sybulski, T. O. Barabashin, L. V. Belova,**

**L.Yu. Naletova, M. V. Bychkova, I. G. Korpakova**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

The paper considers characteristics of phyto- and zooplankton and phyto- and

zoobenthos in the coastal areas of Abrau Peninsula in the Black Sea at transects

differing by their anthropogenic load within the bounds of a phytal zone. Results

of microbiological studies are presented.

*Keywords:* coastal biocenoses, phytal zone, phytoplankton, phytobenthos,

zooplankton, zoobenthos, bacterioplankton, bacteriobenthos, Black Sea.

**PESTICIDES AND POLYC HLORBIPHENYL S IN THE NORTH-EASTERN BLACK**

**SEA ECOSYSTEM BY THE DATA COLL ECT ED IN 1992–2012**

**© 2013 у. I. G. Korpakova, L. I. Korotkova, A. A. L arin, G. G. Kornienko**

*Azov Fisheries Research I nstitute, Rostov-on-Don,344002*

Results are presented on the content of pesticides and polychlorbiphenyls in the

water, bottom sediments and some commercial fish species in the north-eastern

Black Sea over the period 1992–2012. Chlorine-, nitrogen-, phosphorous- and

sulphurcontaining pesticides found in the sea water surpassed the maximum

permissible concentrations. Chlorine pesticides and polychlorbiphenyls were

revealed in the atmospheric precipitations over the north-eastern Black Sea.

Correlation has been found between the pesticides and biphenyls’ concentrations

detected in the fish and histopathological changes observed in their tissues.

*Keywords:* Black Sea, сhlorine pesticides, polychlorbiphenyls, water, bottom

sediments, fish.

**ACCU MUL ATION OF HEAVY METALS IN ICHTHYOFAUN A AND THE**

**ENVIRONMENT OF THE NORTH-EASTERN BLACK SEA**

**© 2013 у. I. G. Korpakova, A. A. L arin, I. V. Korablina**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Results are presented on the concentration of some heavy metals in water,

bottom sediments and valuable commercial fish species of the Black Sea. The

accumulation of metals in organs and tissues of fish have been considered in

regard to the concentration of elements in the water and bottom sediments.

Possible effects of high and low metal concentrations on hydrobionts have been

try to assessed.

*Keywords:* Black Sea, pollution, heavy metals, hydrobionts, permissible

concentration.

**HYDROCARBONS IN THE BIVALVES OF THE AZOV SEA**

**©2013y. I. G. Korpakova, L. F. Pavlenko, A. A. L arin, N. S. Anokhina,**

**G. V. Skrypnik**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Data are given on the accumulation of hydrocarbons and polyarenes by the

bivalves of the Azov Sea, the materials were collected during ecological surveys

conducted over 2004–2010. The correlation between the accumulation rate

of hydrocarbons in the bivalves and the environmental pollution has not been

revealed either in natural or experimental conditions, and the reasons of such

an absence are considered. The application of bivalves as indicators of water

ecosystem pollution is proposed.

*Keywords*: Azov sea, bivalves, water environment, bottom sediments,

hydrocarbons, polyarenes.

**DYN AMICIS OF CESIUM-137 IN THE AZOV AND BLAK SEA**

**ECOSYSTEM AT PRESENT**

**© 2013 у. I. D . Mkhitaryan, N. A. N ebesikhina**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

In 2005–2012 the content of сesium-137 was measured in the bottom sediments

and fish of main commercial species from the Azov Sea (its eastern part), the

Taganrog Bay and the north-eastern Black Sea. The specific volumetric activity

of Cs-137 ranged from <3 Bq/kg (detection limit) 32.2 Bq/kg in the sediments of

the Taganrog Bay, 55.4 Bq/kg in the Azov Sea and 47.8 Bq/kg in the Black Sea.

The maximum activity of radiocesium amounted to 1.9 Bq/kg in the tissues of

pike perch and round goby from the Azov Sea and Black Sea anchovy.

*Keywords:* radiological monitoring, сesium-137, bottom sediments, fish.

**POLLUT ION OF RUSSIAN COASTAL WATERS OF THE BLACK SEA BY**

**PETROLEUM PRODUCT S AND POLYCYCL IC AROMATIC HYD ROCARBONS**

**©2013 y. L . F. Pavlenko, G. V. Skrypnik, N. S. Anokhina, T. L . Klimenko,**

**A. I. Evseeva, V. S. Ekilik, A. A. L arin, I. G. Korpakova**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Based on the results of studies conducted in the north-eastern Black Sea in different

seasons from 1993 to 2012 we have characterized water and bottom sediments

pollution by oil components (hydrocarbons and resins) and polycyclic aromatic

hydrocarbons (PAHs). Contemporary data are presented on the accumulation

levels of petroleum hydrocarbons and individual PAHs in organs and tissues of

commercial fish species from the Black Sea.

*Keywords*: north-eastern Black Sea, pollution, petroleum products, polycyclic

aromatic hydrocarbons, water, bottom sediments, commercial fishes.

**AQUACULTU RE AS A PRIORITY TREND OF RESEARCH ACT IVITIES**

**OF AzNIIRKH**

**© 2013 y. A. V. Mirzoyan**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

It is shown how aquaculture studies have been carrying out by AzNIIRKH during

the last decade, the main achievements and prospects for further development

are considered.

*Keywords*: aquaculture, propagation.

**MORPHOLOGICAL AND BIOLOGICAL PARAMETERS OF THE AZOV-BLACK**

**SEA SHEMAYA *CHALCALBURNUS CHALCOIDES* BREEDERS DU RING THEIR**

**AUTU MN MIGRATION INT O THE RIVER DON**

**© 2013y. G. V. Golovko, A. V. Mirzoyan, G. I. Karpenko, E. V. Pereverzeva\*,**

**L. I. Z ipelt**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

*\*Azov-Don B asin Department of Fisheries and Conservation of B iological Resourses,*

*Rostov-on-Don, 344034*

Morphological and biological characteristics of the Azov-Black Sea shemaya

*Chalcalburnus chalcoides* migrating to the Don for autumn spawning are

presented. In order to develop the standards of artificial breeding of the species,

we have analyzed such parameters as size and weight of the fish, their age

composition, fecundity, gonad state, and have calculated gonado-somatic index.

We have correlated females’ fecundity with commercial length and total weight.

*Keywords:* migratory Azov-Black Sea shemaya, autumn anadromous migration,

breeders, fecundity, weight, length, gonado-somatic index, oocytes.

**ASSESSMENT OF GENETIC VARIATION OF THE BROOK TROUT *SALMO TRUTTA***

**FROM THE RIVERS FLOWING INT O THE NORTH-EASTERN BLACK SEA**

**© 2013 у. N . A. N ebesikhina1, N. N . T imoshkina1, A. E. Barmintseva2,**

**S. B. T uniev3, M. L . Gogua4**

*1 Russian Federal Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

*2 Research I nstitute of Fisheries and Oceanography, Moscow, 107140*

*3 Sochi National Park, 354000*

*4Institute of Ecology, Academy of Sciences of Abkhazia, Sukhum, 384905*

The population structure and effect of artificial reproduction of *Salmo trutta*

on the genofond of the species have been studied. We have analyzed the

polymorphism of eight subsamples of brook trout spawning in the rivers of the

Black Sea coast of Russia and Abkhazia by means of microsatellite markers and

nucleotide sequence of mtDNA D-loop region (474 p.n.). Comparative analysis

of microsatellite markers has revealed reliable genetic differentiation between

most groups of brook trout and homogeneity of the same samples when mtDNA

sequencing has been studied.

*Keywords:* STR , mitochondrial DNA (mtDNA), *Salmo trutta*, genetic

polymorphism.

**ways and metho ds of deve lopme nt of ecologi cal and**

**toxi cologi cal studies on the pes ticide po llutio n**

**of wa terbo dies in the azov sea basi n**

**© 2013 у. O. A. Z inchuk, I. L . L evina**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

During forty years the researchers of Fishery Toxicology Department have

studied pesticides effects on hydrobionts and water bodies in the Azov Sea

basin. The dynamics of the development of our ecological and toxicological

investigations is discussed. The priorities, trends and goals of scientific studies

have been changed and updated in accordance with the market development of

new pesticide preparations.

*Keywords*: pesticides, hydrobionts, toxicity, monitoring, biochemical processes,

teratogenicity.

**STUD IES of Pes ticide po llutio n of coas tal wa ters of the**

**Taga nrog and Yase nski Bays of the Azov Sea in 2009–2011**

**©2013 y. L . A. Bugaev, O. A. Z inchuk, A. V. Voikina, V. A. Valiullin, Yu. E. Karpushina**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Residual amounts of pesticides in the coastal water of the Azov Sea were studied

in spring and autumn seasons of 2009–2011. The concentrations of the pollutants

were determined and the degree of their danger for hydrobionts was assessed.

The concentrations of pesticides diluted in the water of the Taganrog Bay and

the eastern Azov Sea are shown to be lower than the maximum admissible

concentrations set for fishery waterbodies.

*Keywords*: pesticides, maximum permissible concentration, high-performance

liquid chromatography, active ingredients, pesticide pollution, Taganrog bay,

Yasenski bay.

**Tes ting of the wa ter ecos ystems po lluted by pes ticides wi th**

**the he lp of express -me tho ds**

**© 2013 y. S. I. Kataskova, О. А. Z inchuk, L. А. Bugaev**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

In the autumn of 2009 we studied pesticide residues in the coastal waters of the

Taganrog Bay. The additive method allowed us to make a theoretical estimate of

pesticides’ danger for hydrobionts of different trophic levels.

*Keywords*: pesticides, maximum permissible concentration, high-performance

liquid chromatography, active ingredients, pesticide pollution, toxicology.

**assessme nt of synergi c actio n of mo der n pes ticides fo und in the water bo dies of the azov sea basi n on commer cia l fish spe cies and their foo d base**

**© 2013 у. I. L . L evina, O. A. Z inchuk, N. I. Shcherbakova, E. A. Fedorova,**

**L.Ya. Kuznetsova, N. A. Gumnenkova, T. N . Karpusheva, L. M. Besschetnova**

*Azov Fisheries Research I nstitute, Rostov-on-Don, 344002*

Synergic action has been studied of the pesticides (imazalil, iprodione,

tebuconazole and ethofumesate) found in the water bodies of the Azov Sea

basin on phyto- and zooplankton, zoobenthos, sturgeons, gobies and Cyprinidae.

These pesticides in the combination applied are shown to have a negative effect

on some links of the trophic chain even if they are used in concentrations smaller

than maximum admissible concentrations adopted for fishery waterbodies.

*Keywords:* pesticides, hydrobionts, toxicity, fecundity, ontogenesis,

teratogenicity, biochemical processes.

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**REVIEW**

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of Pacific salmon marine ecology (critical notes about the book of Karpenko V.I., Andrievskay L.D., Koval M.V. ≪Feeding and peculiarity of Pacific salmon growth at high seas≫. Petropavlovsk-Kamchatskiy: KamchatNIRO, 2013. 304 p.)

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**INTRODUCTION OF THE RED KING CRAB INTO THE BARENTS SEA AND ITS**

**IMPACT ON THE ECOSYSTEM (A REVIEW).**

**4. FISHERIES AND SOCIO-ECONOMIC ASPECTS**

**© 2014 у. A.G. Dvoretsky**

*Murmansk Marine Biological Institute of Kola Science Centre RAS, 183010, Murmansk*

Stock dynamics of the red king crabs and socio-economic aspects of their introduction in the Barents Sea are discussed in the paper. New commercially important fishery target had a number positive consequences including profits sale of the crab, development of local economics, tourism and aquaculture. An unavoidable negative consequence was uncontrolled illegal crab fishing. In general, introduction of the red king crab has no strongly pronounced

negative impacts for the ecosystem of the Barents Sea.

*Keywords*: red king crab, Barents Sea, introduction, socio-economic consequences.

**Distribution of rare and vulnerable species of fish**

**and cyclostomes in the reservoirs of Vologda region**

**© 2014 у. A. F. Konovalov, M. Ya. Borisov, N. L. Bolotova**

*Vologda laboratory of State Research Institute on Lakes and Rivers Fisheries, Vologda, 160012*

Modern and historical materials on the distribution of rare and vulnerable species of fish and lamprey in the reservoirs of the Vologda region were generalized in the article. The distributions of species in the region were researched for basins of the Caspian, White and Baltic Seas. The changes of population abundance of rare and vulnerable fish and lamprey were analyzed within the boundaries of species areas.

*Keywords*: rare and vulnerable fish and lamprey, distribution, basin, White, Caspian, Baltic Seas, Vologda region.

**THE FISH POPULATION OF THE SMALL RIVERS**

**OF THE UPPER DON BASIN.**

**I. GENERAL CHARACTERISTIC AND DETERMINATIVE FACTORS**

**© 2014 у. V. P. Ivanchev, E. Yu. Ivancheva, V. S. Sarychev\*, V. G. Tereshchenko\*\***

*Okskii Biosphere State Nature Reserve, Brykin Bor, Ryazan oblast, 391072*

*\* Reserve “Galichya gora” of Voronezh state university, Donskoe, Lipetsk oblast, 399240*

*\*\* Papanin Institute for Biology of Inland Waters, Russian Academy of Sciences,*

*Borok, Yaroslavl oblast, 152742*

In total 34 species in ichthyofauna of Upper Don basin small rivers are met. At the analysis of the fish population of the small rivers three main clusters from which in the first the rivers proceeding on the Oka-Don plain are presented mainly, and in two others clusters – across Central Russian upland are allocated. According to dominating species the first cluster can be characterized as roaches-Amur bitterling, and others two – bleak - Amur bitterling -

common minnow and common minnow only. It allows to assume that strength of influence of various ecological factors on specific structure of the fish population in the two areas is various.

*Keywords*: fish population, percentage in population, basin, Upper Don, small rivers.

**THE FISH POPULATION OF THE SMALL RIVERS OF THE UPPER DON**

**BASIN. II. THE FACTORS OPERATING IN VARIOUS OROGRAPHICAL AREAS**

**© 2014 у. V. P. Ivanchev, E. Yu. Ivancheva, V. S. Sarychev\*, V. G. Tereshchenko\*\***

*Okskii Biosphere State Nature Reserve, Brykin Bor, Ryazan oblast, 391072*

*\* Reserve ≪Galichya gora≫ of Voronezh state university, Donskoe, Lipetsk oblast, 399240*

*\*\* Papanin Institute for Biology of Inland Waters, Russian Academy of Sciences, Borok,*

*Yaroslavl oblast, 152742*

The analysis of features of the fish population distribution of the Central Russian upland and the Oka-Don plain small rivers under the influence of various factors of environment is carried out. All analyzed factors influence formation of the fish population of the small river on Central Russian upland in various degree significant (speed of a current, nature of a ground, bed width

etc.), except flood-plain width. Speed of a current and nature of a ground have the greatest value. On the Oka-Don plain for formation of the fish population of the small river all factors are significant including flood-plain width.

*Keywords*: fish population, percentage in population, basin, Upper Don, small rivers.

**SOME Bioecological peculiarities of water bodies with**

**different forms of fisheries**

**© 2014 y. V. P. Mikheev1, I. V. Mikheeva2, P. V. Mikheev3**

*1 All-Russian Scientific research institute of freshwater fisheries,*

*p. Rybnoe, Dmitrov region, Moscow area, 141821*

*2 Dmitrov Branch of Astrakhan State Technical University, p. Rybnoe, Dmitrov region, Moscow area,*

*141821*

*3NTsBNational Centre of Fish Production and Aquaculture Sustainability, Moscow,107140*

An estimation of some bioecological processes, connected with functioning microbial communities in water bodies of different types and various forms of fisheries (extensive, semiintensive, intensive and industrial, has been carried out. Characteristics of microbiological niches for a number of fish-farming water objects, trends of destructive processes, providing favourable water conditions for fish cultivation, have been given. On the example of sestonconsuming

fish, the role of bacterioplankton and detritus in obtaining fish-farming production has been shown.

*Keywords*: commercial fish-farming, ecological niches of microorganisms, destruction, selfpurification of water bodies, detritus, bighead carp.

**MATURATION OF MALES IN SOME SPECIES OF DEEP-WATER SNOW CRABS**

**IN THE SAKHALIN-RURIL AREA**

**© 2014 у. E. R. Perveeva, S. D. Bukin**

*Sakhalin Research Institute of Fisheries and Oceanography , 693023, Yuzhno-Sakhalinsk*

The objects for study are Snow crabs *Chionoecetes angulatus* and *C. japonicus* inhabiting the waters of Sakhalin and Kuril Islands. The data were collected in 2000–2007. The purpose of the work was to describe particular features of maturity and dependences between chela size and carapace width during maturation. The curve parameters of chela height-carapace width dependence are calculated for males of both crab species, certainty of differences of regression parameters for mature and immature males is estimated by years for each species and between

species from different sampling areas.

*Keywords: Chionoecetes angulatus, Chionoecetes japonicus*, allometry; terminal molt, immature and mature males, wide- and narrow-dactyl males.

**The long -term dynamics of fish community species structure**

**according to the records of experimental trawl surveys in**

**the Curonian lagoon of the Baltic sea**

**© 2014 у. M. B. Alexandrova**

*Atlantic Scientific Research Institute of Marine Fisheries and Oceanography, Kaliningrad, 236022*

The long-term dynamics of fish community structure and the species composition according to the records of experimental trawl surveys which had been conducted during the period 1959– 2011 in the Curonian lagoon were analyzed. 22 species of fishes and one of cyclostomes belonging to 11 families were found in the catches composition. Bream and pike-perch form the basis of the catches during the study period. The changes in the fish community species structure related both to the influence of commercial fishing and to natural causes were observed.

*Keywords*: species structure, fish community, Curonian lagoon, experimental trawl survey.

**THE PHYSIOLOGICAL AND BIOCHEMICAL ASPECTS OF FORMATION**

**OF SPAWNING POPULATIONS OF ROACH IN MODERN CONDITIONS**

**OF THE VOLGA-CASPIAN**

**© 2014 у. G. F. Metallov, E. N. Ponomareva, P. P. Geraskin\*, A. V. Kovaleva**

*Southern Science Center of the Russian Academy of Sciences, Rostov-on-Don, 344006*

*\* Astrakhan state technical university, Astrakhan, 414056*

As a result of long term studying of the physiological and biochemical status of roach populations in modern environmental conditions of Volga-Caspian region it was revealed that breeders has a significant shortage of lipids and protein during prewintering and spawning periods, determined the level of sexual products development, the success of spawning migration and, respectively, the commercial catches. The minimal level of fat, limiting its spawn migration, was determined as a result of studying of physiological status of breeders. The way of new data

integration to the method of evaluation of total legal catch with aim of its further improvement by the specialists of catch’s statistics was offered.

*Keywords:* roach, ecology, pollution, nutrition, physiology, commercial stock, spawning.

**ILLEGAL FISHING FOR ATLANTIC SALMON** *SALMO SALAR* **IN THE LOWER**

**TULOMA RESERVOIR CATCHMENT**

**© 2014 у. I.V. Samokhvalov, S.V. Prusov, A.V. Zubchenko**

*Knipovich Polar Research Institute of Marine Fisheries and Oceanography, Murmansk, 183038*

Illegal fishing for Atlantic salmon *Salmo salar* in the Lower Tuloma reservoir catchment is described on the basis of the data on tagging of adult salmon. Distribution of illegal catches in the catchment and selectivity of fishing gears are estimated. Obtained data can be used as a basis for estimates of illegal catches and for development of recommendations on fisheries regulations.

*Keywords*: Atlantic salmon, illegal fishing, tagging, migration.

**PECULIARITIES OF GOODS BREEDING THE RUSSIAN STURGEON**

**IN POLYCULTURE WITH PLANTS-EATING FISHES IN CONDITIONS OF CARP**

**FISH-BREEDING FARMS OF SOUTH KAZAKHSTAN**

**© 2014 у. N. S. Badryzlova, E.V. Fedorov, S. K. Koyshibaeva**

*Kazakh scientific and research institute of fish economy, Alma-Ata, 050035*

The database of productive potential of two- years-old russian sturgeon according to the breeding in ponds in South of Kazakhstan are presented in this article. The results of breeding the russian sturgeon in monoculture and polyculture with grass carp and silver carp are shown. The comparative price of fish-breeding and biological database of two-year-old of Russian sturgeon, which bred in polyculture with grass carp and silver carp, are given. Dynamic of temp of growth of russian sturgeon which had an age from two-years before five-years is

presented. The possibility of principle of breeding the russian sturgeon in adapted ponds in polyculture together with grass carp and silver carp in conditions offish-breeding farms in South of Kazakhstan is shown.

*Keyword*s: sturgeon fishes, russian sturgeon, potential of growth, breeding in monoculture, breeding in polyculture, adapted ponds.

**Determination of the abundance of salmon by catch data**

**of drift net**

**© 2014 у. A. A. Yarzhombek, A. A. Abramov**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

For quantitative determination of the abundance of salmon (fishes per km2) by data of drift net catches (fishes per one net per hover) was used a comparison with the data of trawl catches at rate of 0,5 catchability. An empirical formula of translation proposed: *abundance* (fishes per km2) = 42 *catch* (fishes per one net per hover). It is shown, that the high abundance of salmon in July-August in the water area of the First Kuril Strait due to spawning migration and concentration of fishes in the narrow strait.

*Keywords:* salmon, catch, abundance, net, trawl.

**HYDROACOUSTIC RESEARCHES OF DISTRIBUTION AND STOCKS OF**

**SEAWEED AHNFELTIA TOBUCHINSKY** *AHNFELTIA TOBUCHIENSIS*

**IN THE GREAT PETER BAY**

**© 2014 у. M. Yu. Kuznetsov, L. V. Giltsova, I. A. Ubarchuk, E. V. Syrovatkin**

*Pacific Scientific Research Fisheries Center, Vladivostok, 690091*

It is shown that by means of digital echo sounder Simrad EY60 it is possible to measure with high resolution the height of algae ahnfeltia tobuchinsky layer and layer density on its backscattering ability by a method of echo integration. The regression dependence of nautical area scattering coefficient sA measured by echo sounder from the density of algae is defined. Estimations of spatial distribution and a biomass of ahnfeltia in various areas of its habitation in the Great Peter bay by a hydroacoustic method are received.

*Keywords*: algae, echo sounder, hydroacoustic method, height of layer, density, graduation, biomass of ahnfeltia.

**TO A TECHNIQUE OF DEFINITION OF AGE OF THE BREAM** *ABRAMIS BRAMA*

**L. ON VERTEBRAS**

**© 2014 у. A. V. German, E. A. Zabotkina**

*I. D. Papanin Institute for Biology of Inland Waters Russian Academy of Sciences,*

*Borok, Nekouz, Yaroslavl destrict, 152742*

Article is devoted to methodical aspects of definition of age of fishes. For karp fishes, in particular the bream, the age on slice device Veberov’s first vertebra is offered to define. The technique of preparation of preparations, examples of reading annual rings, advantages of an offered method in comparison with existing techniques of definition on scales and body vertebras are given.

*Keywords*: bream, Weberian apparatus, the definition of age.

**Optimization of planned trawling allocation among the**

**strata and minimum sample size estimation for Russian**

**sturgeon (***Acipenser guеldenstaedtii* **) in the Caspian Sea (area**

**of responsibility of the Russian Federation )**

**© 2014 y. T. I. Bulgakova, V. K. Babayan, D. A. Vasilyev, A. I. Mikhailov, I. A. Safaraliev\***

*Russian Research Institute of Fisheries and Oceanography, Moscow, 107140*

*\*Caspian Fisheries Research Institute, Astrakhan, 41400*

Methodological aspects of survey planning and processing with an example for the Northern Caspian Sea sturgeon (*Acipenser gueldenstaedtii*) are continued to be considering. Questions of optimal trawling allocation among the strata and minimum simple size are considered.

*Keywords*: stratificated survey, Russian sturgeon, the Caspian Sea, stock assessment.

**Periodic ordering of technology development**

**of natural resources**

**© 2014 у. B.Yu. Vorotnikov**

The problem of finding common patterns in the structure of the processing technology of various natural sources of raw materials. Based on systematic process developed by the author proposed a periodic system of technological evolution of natural raw materials.

*Keywords*: cognitive systems, natural resources management, periodization of the evolution of technology.

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**REPRODUCTION OF INCONNU** *STENODUS LEUCICHTHYS NELMA* **FROM**

**KUBENSKOE LAKE**

**© 2014 y. A. A. Lyutikov**

*State Research Institute on Lake and River Fisheries, St. Petersburg, 199053*

The history of artificial cultivation of inconnu *Stenodus leucichthys nelma* from the first works in the fifties of the last century till the present days is summarized. The revue comprises data on the development of spawn incubation biotechnology, fry rearing in ponds, rearing lakes, and on industrial conditions. The data on acclimatization of inconnu from Kubenskoye lake as well as it’s hybridization with other Coregonidae with the objective of commercial rearing

are present.

*Keywords:* inconnu, reproductive history, incubation of eggs, fry rearing, industrial technology.

**FEATURES OF THE SPECIES OF FISH AND FISHERIES ONDOZERO**

**RESERVOIR (Karelia )**

**© 2014 у. N. S. Cherepanovа\*, A. P. Georgiev\*,\*\*, D. E. Ivanter\***

*\*Northern Fisheries Research Institute, Petrozavodsk, 185031*

*\*\*Institute of Northern Water Problems of the Karelian Research Centre of the Russian Academy of*

*Sciences, Petrozavodsk, 185030*

In 1955, the last century as a result of regulation of the r. Onda was created reservoir for floating timber with seasonal adjustment. Under the new conditions associated with changes in water level, the number of changes occur in the nucleus of the fishing community, primarily by reducing the number of whitefish, grayling. This paper presents the materials describing the information about the habitat of aquatic biological resources, including fish community of

one of the major water bodies of Karelia – Ondozero reservoir.

*Keywords*: Karelia, Ondozero reservoir, habitat, species composition of fish fishing.

**GROWTH AND PUBERTY OF STERLET** *ACIPENSER RUTHENUS* **IN VOLZHSK**

**AND KAMSKY REACHES OF THE KUIBYSHEV WATER RESERVOIR**

**© 2014 y. V. A. Kuznetsov, V.V. Kuznetsov**

*Kazan (Privolzhsky) Federal University, Kazan, 420008*

Growth and sterlet puberty in Kamsky and Volzhsk reaches of the Kuibyshev water reservoir in the early 1990, 1993 and in 2006 is surveyed. It is shown that “obtuse-snout” specimen sterlet several overtake advance in growing “sharp-snout” the form a little, and the fishes who are at II fatty stage of a puberty grow faster puberal animal unit. Sterlet puberty is strongly extended in time and the

lobe of the fishes who are at II fatty stage of a puberty reduce. For onservation of stock of sterlet it is required its artificial reproduction with the account different quality population frame.

*Keywords*: sterlet, growth, puberty, different quality, water reservoir.

**The comparative characteristic morphological signs of**

**the spawner THE Caspian sea** *ACIPENSER nudiventris* **, grown in**

**the conditions of warm water cages , with individuals from**

**natural areal are present**

**© 2014 y. E. V. Boubounets, A. V. Zigin\***

*Central Departament for Fisheries Expertise and Standards on Saving, Reproduction of Water Resources and Acclimatization, Moscow, 125009*

*\*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

The comparison of the morphological characteristics of the spawners of the Caspian Sea *Acipenser nudiventris*, grown in the conditions of warm water cages, with individuals from natural areal are present. The estimate of the coefficient of differences, the reliability differences signs and the level of diversity of the sign on the value of the coefficient of variation are given.

The comparisons carried out between the general groups and separately between males and females.

*Keywords*: Caspian Sea, *A. nudiventris*, morphological signs, reliability of differences, coefficient of differences, coefficient of variation.

**SUMMER CHUM SALMON ARTIFICIAL REPRODUCTIN UNDER LOW WATER**

**TEMPERATURE CONDITIONS DURING YOLK SAC FRY DEVELOPMENT:**

**PROSPECTS FOR REPLACEMENT OF PINK BY SUMMER CHUM SALMON AT**

**COLDWATER SALMON HATCHERIES**

**© 2014 у. A. E. Lapshina1,3, V. G. Samarskiy1, L. A. Zhivotovsky2,3**

*1 Sakhalin Basin Department for Fisheries and Conservation of Water Biological Resources, Yuzhno-Sakhalinsk, 693006*

*2 Russian Academy of Science. Vavilov Institute of General Genetics, Moscow, 119991*

*3 Sakhalin State University, Yuzhno-Sakhalinsk, 693000*

The current paper concerns with an experiment on artificial reproduction of the summer chum salmon in Sakhalin Island’s hatcheries under low water temperature during yolk sac fry development to imitate natural conditions for the ontogeny of both summer chum and pink salmon. The goal of this work was to clear up the possibility of replacement of pink salmon by the summer chum salmon in hatcheries without ground water supply.

*Keywords:* summer chum salmon, pink salmon, artificial reproduction, growth rate, ontogeny.

**Acclimatization of fish in the waterbo dies of Volog da region**

**an d its results**

**© 2014 y. A. F. Konovalov**

*Vologda laboratory of State Research Institute on Lakes and Rivers Fisheries, Vologda, 160012*

Events of fish acclimatization in the Vologda region were described in the article. The main results of acclimatization works were analyzed. Recommendations for commercial cultivation and introduction of fish in the reservoirs of the Vologda region were proposed.

*Keywords*: acclimatization and transplantation of fish, introduction, naturalization, commercial fish culture, cultivation of fish, Vologda region.

**Using systems for remote sensing of the Earth for fisheries**

**management Argentine squid**

**© 2014 y. T. B. Barkanova, M. K. Glubokovsky**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

Rapidly developing system of Earth remote sensing, providing a high degree of frequency and precision of measurements of the basic hydrobiological parameters of the World ocean waters: the temperature of the ocean surface, the color of water, salinity, direction and speed of currents, ocean surface, today are successfully playing the role of technical means of commercial fishing

exploration. At work as for example of the South-West Atlantic region, were considered the possibilities of using of real-time and historical satellite information on the variability of the temperature conditions of the spatial-temporal distribution of the fields of phytoplankton, the main currents of the district, with operational fisheries management Argentine squid *Illex*

*argentinus* and estimate their influence on the biological productivity of the fishing area.

*Keywords*: Satellite information, technical means of commercial fishing exploration, fisheries management, sea surface temperature (SST), the dynamics of the fields of phytoplankton, South-West Atlantic, fishing for squid *Illex argentines.*

**MORPHOLOGICAL CHANGES IN ROACH** *RUTILUS RUTILUS* **OF THE**

**SARATOV RESERVOIR**

**© 2014 у. A. K. Mineev**

*Institute of Ecology of the Volga River Basin of the Russian Academy of Sciences*

*Toglyatty, 445003*

The materials of years of research (1995–2011). External morphological disorders, diseases of internal organs and tissues, variations in some hematological parameters in roach *Rutilus rutilus* – one of the most common fish species Saratov Reservoir. Shows a direct correlation of the detected malformations and abnormalities in roach of different age groups (from the early larval

stages to adult animals) on the level of human influence on the ecosystem of the studied reservoir.

*Keywords*: roach, morphological abnormalities, diseases of blood cells, hematological parameters, pathology of the internal organs.

**methods for estimating the fisheries DATA accuracy based**

**on whelk fishery statisti CAL analisis**

**© 2014 y. A. G. Vasilyev**

*Magadan Research Institute for Fisheries and Oceanography, Magadan, 685000*

Statistical analysis of the fisheries data on whelk is presented in the article. It is suggested that the catches comply with the probability distributions. Some types of probability distributions of the catches are considered. New methods of evaluating the accuracy of the fisheries data are offered.

*Keywords*: invertebrates, Buccinum, fisheries, traps, statistical analysis, probability distributions of catches.

**FISHING IN ALASKA IN THE PERIOD OF RUSSIAN AMERICA**

**© 2014 у. A. V. Grinеv**

*St.-Petersburg Polytechnic University, 195251*

In this article for the first time in the Russian historiography are researched the problems of the development of fishing in Alaska during the Period of Russian America.

*Keywords*: fishing, meanings and methods of the fishing, natives of Alaska, Russian America, Russian-American Company.

**State of maritime safety an d prospects for the introduction**

**an d development of automate d systems to ensure the safety**

**of navigation in the Kamchatka region**

**© 2014 y. A. G. Korovin**

*Federal State Institution ≪Petropavlovsk-Кamchatskiy Port Administration≫, 683000*

This article describes the rationale for the introduction of an automated system for ensuring the safety of navigation in the port of Petropavlovsk-Kamchatsky, the author proposed a phased deployment of the system and identified the prospects for the development of an automated system to ensure safety of navigation.

*Keywords:* vessel traffic control system (VTCS); global maritime system distress and safety system (GMDSS); radio navigation safety systems; – automatic identification systems (AIS); differential mode system (DGPS).

**The comparative analysis of some indicators of the immunobiochemical**

**status of iridescent trout** *para Salmo mikyss* **irideus from fish-breeding economy of the Caucasian region**

**© 2014 у. N. I. Silkina, T. A. Suvorova**

Research humoral factors of immunity and intensity of oxidising processes at iridescent trout *Parasalmo mykiss irideus* from fish farms the Caucasian region is carried out. The established decrease in indicators of immunity and change of an oxidation-reduction homeostasis in an organism of the fishes who have been grown up in the Chernorechensky trout economy, can lead to easing of their adaptable potential, development of oxidising stress, survival rate decrease.

*Keywords:* fish, humoral immunity, lipid metabolism.

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**CHANGE OF HEMOLYMPH PARAMETERS IN BLUE KING CRAB**

*PARALITHODES Platip us* **DUE TO THE STRESS CAUSED BY FISHING using**

**CRAB POTs**

**c 2014 y. S. I. Moiseev, S. A. Moiseeva\***

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

*\*Institute of Cell Biophysics of the Russian Academy of Science, Pushchino, 142290*

Changes of biochemical parameters of the hemolymph in blue king crab *P. platypus* exposed to adverse factors associated with pot fishing were studied. Changes in hemocyanin (Hc) concentration and ionic composition of hemolymph were observed in crabs which were repeatedly lifted out of the water in pots. The observed changes were dependent on the molt stage of crabs. The relationship between changes of hemolymph parameters and viability of animals in experiments was analyzed. Based on the obtained data mechanisms of adaptation of blue king crab to the adverse effects of fishing with pots were proposed.

*Keywords*: blue king crab, crab pots, impact of fishing, hemolymph, hemocyanin.

**COMPARISON OF MORPHOMETRIC PARAMETERS OF GRASS SHRIMP**

*PANDALUS LATIROSTRIS* **RATHBUN FROM THE BUSSE LAGOON AND**

**EASTERN ANIVA BAY COAST (EASTERN SAKHALIN)**

**c 2014 y. I. Yu. Panyaeva**

*Environmental Company of Sakhalin, Ltd., Yuzhno-Sakhalinsk, 6930007*

In this article relate results of researches of morphometric descriptions grass shrimp in lag. Busse and coastal zone of Aniva bay. It was realize in process of researches comparative analysis of shrimps of both areas. The analysis of has shown that in many cases there are reliable differences in body proportions between the same size groups from these two regions.

*Keyworks*: grass shrimp**,** Busse lagoon, morphometric parameters, maturity of females, allometry of grows, pleopods.

**ECOLOGY AND FISHING OF ARCTIC CISCO** *COREGONUS AUTUMNALIS*

**(SALMONIFORMES, COREGONIDAE) OF THE INDIGIRKA RIVER**

**c 2014 у. A. F. Kirillov**

*Yakutsk Branch, FSUE State Scientific and Production Center of Fishery, Yakutsk, 677018*

Peculiarities of distribution, length and age structure, feeding, parasital level, hybrids with nelma *Stenodus leucichthys nelma* lake herring *Coregonus sardinella* fishing of Arctic cisco *Coregonus autumnalis* in the Indigirka River are reviewed.

*Keywords*: *Coregonus autumnalis*, Indigirka River, growth, fecundity, feeding, parasites, hybrids, fishing.

**Recent data on** *Ruditapes philippinar um* **(BIVALVIA: VENERIDAE)**

**biology in Amur Bay**

**c 2014 y. S. E. Leskova, I. V. Matrosova, I. G. Rybnikova**

*Far-Eastern State Technical Fishery University, Vladivostok, 690950*

This article provides data on the size and age pattern of the habitations, quantity characteristics of linear growth and biomass growth and reproductive cycle features of *Ruditapes philippinarium* in Amur Bay. The data on histological maker and cell composition of investigated mollusks’ reproductive glands are shown to update the information on reproductive biology of *Ruditapes philippinarium*.

*Keywords*: structure of population, growth, gonads, reproductive cycle, bivalve mollusks, *Ruditapes philippinarium*.

**THE RESULTS OF SURVEYS ON fishery water bodies**

**OF CENTRAL RUSSIA**

**c 2014 y. A. D. Bykov, S. Yu. Brazhnik**

*Federal Research Institute of Fishery and Oceanography, Moscow,107140*

The paper provides an overview of the results of surveys on fishery water bodies of Moscow, Smolensk, Ryazan, Vladimir, Kaluga, Kursk, Tula, Orel, Bryansk regions, and Moscow from 2007 till 2013. It describes the taxonomic composition of ichthyofauna, fish stock condition and fisherу in these water bodies. The paper shows their fisherу value and ways of their rational exploitation.

*Keywords:* water bodies, surveys, ichthyofauna, fish stock condition, catch, fisherу value.

**Feature ichthyofauna and habitat conditions of reservoirs**

**Kuito (Karelia ) in regulation of the flow**

**c2014 у. N. S. Cherepanovа1, A. P. Georgiev1, 2**

*1The Northern Fisheries Research Institute, Petrozavodsk*

*2 Institute of Northern Water Problems of the Karelian Research Centre RAS, Petrozavodsk*

Since the regulation of the Middle and Lower Lakes Kuito (1956), the relative importance of commercial catches of the main commercial families (Cyprinidae, Coregonidae) is quite stable, although in the 1980–s grew share herewith Cyprinidae and a few dropped – Coregonidae (especially whitefish). The article presents data that characterize the habitat of aquatic organisms, materials on commercial fish fauna reservoirs studied and analyzed, identified changes in the structural organization ichthyocenosis by regulation lakes. Analysis

of the current situation in the fisheries complex showed that currently the reservoir fishery resources are used irrationally.

*Keywords*: Karelia, Кuito, habitat, species composition of fish fishing.

**SPECIFIC FEATURES OF SEASONAL VARIABILITY OF HYDROLOGICAL**

**AND HYDROCHEMICAL CHARACTERISTICS OF DESNOGORSK RESERVOIR**

**c 2014 у. S. A. Lapin, I. A. Gangnus, N. M. Zozulya**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

Some specific features of changes of hydrological and hydrochemical characteristics of the Desnogorsk reservoir in the region of Smolensk nuclear station influence were examined. Analysis has been based on data from three complex hydrological and hydrochemical surveys of the Desnogorsk reservoir during different seasons from 2012–2013.

*Keywords*: hydrology, hydrochemistry, reservoir, nutrients, cooling pond.

**Monitoring of phytoplankton in the area of a sea farm in**

**Reefovaya Bay (Peter the Great Bay , Sea of Japan )**

**c 2014 у. O. G. Shevchenko1, 2, A. A. Ponomareva 2, S. I. Maslennikov1**

*1A. V. Zhirmunsky Institute of Marine Biology, Vladivostok, 690059*

*2Research and Educational Center ≪Primorsky Aquarium≫, Ostrov Russkii, Vladivostok, 690091*

The qualitative and quantitative characteristics of phytoplankton in the area of mariculture farm in Riphovaya Bay (Sea of Japan) were study from October 2011 to September 2012. The numbers of microalgae ranged from 1,2 thousand cells/L to 2,9 million cells/L and biomass were from 2,0 mg/m3 to 7,6 g/m3. The peak of numbers was caused by mass development of *Skeletonema costatum* in October, the maximum biomass was observed in winter, dominated by *Thalassiosira nordenskioeldii*. There are seven potentially toxic species of microalgae were recorded.

*Keywords:* phytoplankton, mariculture, toxic species, Reefovaya Bay.

**THE INFLUENCE OF HYDRODYNAMIC CONDITIONS ON FISH**

**DISTRIBUTION IN CHEBOKSARY RESERVOIR**

**c 2014 у. Yu.V. Gerasimov, S. A. Poddubny, M. I. Malin, A. I. Tsvetkov**

*Institute for Biology of Inland Waters of Russian Academy of Sciences, Borok, 152742*

Fish spatial distribution and hydrodynamic processes in Cheboksary reservoir are studied. High productivity zones forming in the central part of the reservoir is observed. The relationship of spatial distribution of fish in immediate proximity to the hydroelectric power plant and its operating schedule is showed. Dynamics of fish stock in the reservoir over the period of its existence is analyzed.

*Keywords:* fish fry, spatial distribution, current, downstream migration, Cheboksary reservoir.

**AGE-RELATED ALTERATIONS ANTIOXIDANT ENZYME REACTIONS**

**IN SCALLOPS** *MIZUHOPECTEN YESSOENSIS* **IN RESPONSE**

**TO OXIDATIVE STRESS**

**c 2014 y. N. N. Belcheva, Yu.V. Koudryashova, A. A. Istomina, T. L. Chizhova**

*V.I.Il’ichev Pacific Oceanological Institute Far Eastern Branch Russian Academy of Sciences,*

*Vladivostok, 690041*

We have identified biochemical parameters: superoxide dismutase, catalase, glutathione reductase and the content of malondialdehyde in the gills of scallop *Mizuhopecten yessoensis* 1, 2, 3 years and their changes after exposure to cadmium (300 mg/l) for 4 days. The results have demonstrated the relationship between the age of mollusks and resistance to oxidative stress.

*Keywords*: scallop *Mizuhopecten yessoensis*, age, oxidative stress, cadmium.

**Analytical determination of the centre masses position**

**V-figurative of the trawl doors**

**c 2014 y. V. I. Gabriuk, I. A. Kornienko, V. V. Kudakaev**

*Far Eastern State Technical Fisheries University (Dalrybvtuz), Vladivostok*

The analytical methods of the determination of the position of the center of the masses V-figurative trawl doors with screens in the form segment circular cone are stated, allowing by means of program CM-STFS to optimize functioning trawling fishing systems with this type of the screens.

*Keywords*: center of the masses, V-figurative, trawl door, segment of circular cone, analytical methods.

**ASSESSMENT OF FISHING CAPACITY OF ANTARCTIC TOOTHFISH**

*DISSOSTICHUS MAWSONI***, THE WEDDELL SEA BASED ON THE RESULTS**

**OF LONGLINE SURVEY 2013**

**c 2014 y. A. F. Petrov, K. V. Shust, I. I. Gordeev**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

Five-year longline survey phase 1 on Antarctic toothfish in the Weddell Sea was carried out in 2013. Eight longline sets were set by Russian vessel ≪Yantar 35≫ in the area of more than 10 thousand sq. km at 74 degree south latitude in the eastern Weddell Sea from February 25 to March 3, 2013. A total of 59,5 tons of toothfish *Dissostichus mawsoni* and 2 tons of by-catch fish species: *Macrourus whitsoni, Chinobathyschus dewitti, Antimora rostrata, Muraenolepsis* spp. were caught. As a result of the survey a stock of Antarctic toothfish of 428

thousand tones was determined.

*Keywords*: Antarctic toothfish, the Weddell Sea, longline sets, commercial fish stock.

**Comparative characteristics of some immunobiochemical**

**indicators of the black sea salmon** *Salmo trutta labrax*

**juveniles from natural and industrial conditions**

**c 2014 y. N. I. Silkina, T. A. Suvorova**

*I. D. Papanin Institute for biology of inland waters Russian Academy of Sciences,*

*Russia, Borok, Yaroslavl range, 152742*

The results of a comparative analysis of immunobiochemical status of juvenile Black Sea salmon, grown in factory conditions and caught in nature, is done. It is shown that the parameters of humoral immunity, the ratio of the lipid components and the balance of the processes prooxidants: antioxidants in the liver river fish, give evidence for good viability of let out the factory juveniles, which able to replenish the natural population of the Black Sea salmon.

*Keywords:* Black Sea salmon, humoral immunity, lipid metabolism.

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Study of the red snow crab *Chionoecetes japonicus* (Decapoda, Majidae) in the Sea of Japan. I. Development of algorithm of density indexes calculation for long-term data comparison

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**GosNIORKh. Centenary anniversary ! Historical milestones and important directions of research GosNIORKh TOWARDS centennial**

**© 2014 у. A. S. Pechnikov, A. A. Lukin, A. P. Pedchenko**

*State research Institute of lake and river fisheries, St. Petersburg, 199053*

The paper presents the stages and important directions of scientific research GosNIORKh since the founding of the Institute. The contribution of specialists and scientists of the Institute in the development of the national aquaculture and fisheries in inland waters are showed. The priority tasks of the Institute in accordance with the strategy of development of the national fishery in the coming decades are designated.

*Keywords: fisheries* research, activities, inland waters, Gulf of Finland, fishing, aquaculture, aquatic biological resources.

**Fishery and stock dynamics of walleye pollock** *Theragra*

*chaclocgamma* **: whether «turbulence» is possible?**

**© 2014 у. O. A. Bulatov**

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

Walleye pollock is the second most extensively fished species in the world. The major fishing grounds are located in the Bering and Okhotsk Seas. Large-scale fishery starting in the 1960s and continues to date with average annual landings over this 50-year period of 2.5 million tons. Yet over this period catches were characterized by considerable variability, which makes fishery management activities difficult. Existing data suggest a close relationship between

PDO index and the fishable biomass in 1978–2013, which allows quantitative estimates of future trends in the biomass and consequently annual catch of walleye pollock. Expected cooling of Northern Pacific will increase the biomass in Sea of Japan and decrease it in Bering Sea and Sea of Okhotsk.

*Keywords:* walleye pollock, biomass, fishery, temperature, climate.

**CURRENT STATUS OF COMMERCIAL BIOLOGICAL RESOURCES IN THE NORTH-EAST ATLANTIC AND THE BARENTS SEA**

**© 2014 у. S. V. Bakanev, K. V. Drevetnyak, A. I. Krysov, P. A. Murashko,**

**A. A. Russkikh, D. V. Prozorkevich, O. V. Smirnov, N. G. Ushakov, E. A. Shamray**

*Knipovich Polar Research Institute of Marine Fisheries and Oceanography, Murmansk, 183038*

The paper provides information on the state of stocks of essential biological resources in the North-East Atlantic and adjacent waters of the Barents Sea. The review describes stocks’ dynamics, characteristics of distribution and commercial catch of fish and invertebrates that are available for the Russian fishing fleet.

*Keywords*: North-East Atlantic, Barents Sea, biological resources, fisheries, stocks’ status, distribution.

**Habitats and fisheries resources SEGOZERo RESERVOIR**

**(KARELIA)**

**© 2014 у. N. S. Cherepanovа1, A. P Georgiev1, 2**

*1 The Northern Fisheries Research Institute, Petrozavodsk*

*2 Institute of Northern Water Problems of the Karelian Research Centre RAS, Petrozavodsk*

In 1957, r. Lower Vig (White Sea basin) was created for multipurpose reservoir compensating flow regulation in the alignment Ondskaya GES The article presents data that characterize the habitat of aquatic organisms, materials for commercial fish fauna Segozero reservoir, identified changes in the structural organization of the fish community as a result of the regulation of the lakes. Under the new conditions associated with regular water level fluctuations, there were

changes in the fish community, primarily reduction of valuable fish species (family Salmonidae and Coregonidae).

*Keywords*: Karelia, Segozero reservoir, habitat, species composition of fish fishing.

**INFLUENCE OF CLIMATIC FACTORS ON THE JUVENILE RED KING CRAB**

**IN THE COASTAL BARENTS SEA**

**© 2014 y. A. G. Dvoretsky, V.G. Dvoretsky**

*Murmansk Marine Biological Institute, Murmansk, 183010*

The aim of this study was to estimate the influence of climatic factors (temperature anomalies and parameters of the global atmospheric circulation winter North Atlantic oscillation indices, NAO) on the abundance of juvenile red king crab in the coastal waters of the Barents Sea. Age group 0–2 year-old crabs accounted for 5 to 100% of the total abundance. Its stock increased with the mean water temperature. The stock of 3–5 year-old crabs decreased with

increase of water temperature (with a shift of 1 year ago) and the NAO index (with a shift of 2 year ago).

*Keywords*: red king crab, Barents Sea, Dalnezelenetskaya Bay, climate.

**The dynamics of commercial catches and the current**

**state of roach** *Rutilus rutilus* **in the Zaporozhian Reservoir**

**© 2014 y. E. V. Fedonenko, O. N. Marenkov**

*Dnepropetrovsk National University named after Oles Honchar,*

*Dnepropetrovsk, Ukraine, 49010*

The characteristic of the commercial catches of fish in the Zaporozhian Reservoir was given. Provides information on the current status and the fishing stock of roach. Linear age-specific of roach, fecundity of fish and values of natural replenishment was given. Calculated the volume of allowable catch roach in 2014.

*Keywords:* roach, the Zaporozhian Reservoir, dynamics of commercial catches, the fishing stock, limit of catches.

**Study of the red snow crab** *Chionoecetes japonicus* **(Decapoda ,**

**Majidae ) in the Sea of Japan . I. Development of algorithm of**

**density indexes calculation for long -term data comparison**

**© 2014 y. A. I. Buyanovsky, V. V. Miroshnikov\***

*Russian Federal Research Institute of Fisheries and Oceanography, Moscow, 107140*

*\* Pacific Fisheries Research Center, Vladivostok, 690950*

Methodology which provides unification CPUE data collected in 1992–2010 and computed by different methods is worked out for red snow crab *Chionoecetes japonicus* population in the Sea of Japan. If empiric data are absent the density index (*ИП*р, crabs per trap) of commercial sized males may be calculated from commercial catches (*КУ*, kg per trap) by equation: *ИП*р = 0,04 × (*КУ*)2 + 0,891×(*КУ*). Dependence between empiric (*ИП*э) and calculated (*ИП*р) values of the density index is described by equation *ИП*р ’ = 0,893 × *ИП*э

+ 0,514. The density index of other groups in the sample may be restored by its size and sex structure. If the range of trap soak varies from 2 to 15 days it does not affect significantly on the density index.

*Keywords*: *Chionoecetes japonicus*, catches per effort, CPUE, density index, trap soak, Sea of Japan.