Public Certification Report

Ozernaya Sockeye Salmon Fishery

MRAG Americas, Inc.

4 September 2012

CLIENT DETAILS:

Delta Co, Ltd.
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Ust-Bolsheretsk region, Kamchatka territory, Russian Federation
&
Vityaz-Avto Co, Ltd.
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MSC reference standards:

MSC Accreditation Manual Version 5
MSC Fisheries Certification Methodology (FCM) Version 6
Fishery Assessment Methodology Version (FAM) Version 2.1
MSC Chain of Custody Certification Methodology (CoC CM) Version 7
MSC TAB Directives (All)
MSC Policy Advisories (All)

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Contents

1 INTRODUCTION

This report sets out the draft results of the assessment of the Ozernaya sockeye salmon Fishery carried out by MRAG Americas, Inc. against the Marine Stewardship Council (MSC) Principles and Criteria for Sustainable Fishing. The purpose of this report is to provide background information, evaluation of the fishery, and justification for scoring the performance indicators provided by the MSC in the generic assessment tree of the Fishery Assessment Methodology v2.1. MRAG conducted no primary research as part of this assessment, and relied on existing information to conduct the analysis. The report intends to clearly set out key issues for consideration during annual surveillance audits and for subsequent recertification.

The record of document amendments is provided in Table 1.

Table 1. Document Amendment Record

Version	Start	End
Client Draft	Aug 2011	Jan 2012
Peer Review Draft	Jan 2012	Apr 2012
Public Comment Draft	June 2012	July 2012
Final Report & Determination	July 2012	Aug 2012
Certification Report	Aug 2012	Aug 2012

The MSC Guidelines to Certifiers specify that the unit of certification is "The fishery or fish stock (=biologically distinct unit) combined with the fishing method/gear and practice (=vessel(s) pursuing the fish of that stock) and management framework."

Unit of Certification

Species:	Sockeye salmon (*Oncorhynchus nerka*)
Geographical Area:	Northwest Pacific, Russian Far East, Sea of Okhotsk, Western coast of Kamchatka peninsula, Ust-Bolsheretsk district, Ozernaya River
Harvest method:	Fixed trap nets, beach seines
Stock:	Population of sockeye salmon, spawning in Ozernaya River and Kuril Lake and its tributaries.
Management System:	Anadromous Fish Commission, Federal Fishery Agency, Regional division of the Federal Fishery Agency, Agency of Fisheries, Research Institute for Fisheries and Oceanography, State Marine Inspection, a combination of federal and state management
Client group:	Fishing Companies Vityaz-Avto and Delta

This Unit of Certification has two gears, trap nets and beach seines. The assessment team determined that the impacts of the two gear types have only minor differences in the impacts of the gears for P2 and that the differences do not warrant separation into two UoCs. Section 3.8 describes the impacts of the gears on the components of the environment.

2 SUMMARY

This report provides details of the MSC assessment process for the Ozernaya sockeye salmon Trap Net and Seine Fishery. The assessment process began in April 2011 and has reached the public comment stage in June 2012. The fishery occurs in the Russian Far East, along the west coast of the Kamchatka peninsula. The assessment covers all companies fishing in the area, but the certificate would apply to fishing companies Vityaz-Avto and Delta.

A rigorous assessment of the wide-ranging MSC Principles and Criteria was undertaken by the assessment team and detailed and fully referenced scoring rationale is provided in the assessment tree provided in Section 6 of this report. Peer reviews of the assessment are presented in Appendix 1.

On completion of the assessment and scoring process, the assessment team concluded that the Ozernaya sockeye salmon fisheries could be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries.

2.1 Evaluation Results

MSC Principle	Fishery Performance
Principle 1: Sustainability of Exploited Stock	Overall: 89.6
Principle 2: Maintenance of Ecosystem	Overall: 84.0
Principle 3: Effective Management System	Overall: 80.4

2.2 Previous Assessments and harmonization with other MSC assessments

No assessment of sockeye salmon in the Russian Far East has occurred previously. No harmonization is required.

2.3 Authors/Reviewers

The assessment team consisted of the following individuals, who collectively have knowledge of the stock status and assessment, ecosystem impacts, and management systems applicable to this fishery:

Mr. Ray Beamesderfer, M.Sc. Senior Fish Scientist, Cramer Fish Services. Mr. Beamesderfer holds a bachelor's degree in Wildlife and Fisheries Biology from the University of California, Davis, and a Master's in Fishery Resources from the University of Idaho. Ray previously worked for the Oregon Department of Fish and Wildlife on salmon research, management and policy analysis. He currently works as a consulting fish scientist on a variety of projects in fishery management, biological assessment, and conservation/recovery planning with an emphasis on Pacific salmon. He is the author of numerous reports, biological assessments, management plans, and scientific articles on fish population dynamics, fish conservation, fishery and hatchery management, sampling, and species interactions. Ray has served on fishery assessment teams for salmon fisheries in Alaska and Russia.

Dr. Dmitry Lajus, Associate Professor in the Department of Ichthyology and Hydrobiology of St Petersburg State University. Dr. Lajus holds a BS and MS from St. Petersburg University, and a PhD from the Zoological Institute of the Russian Academy of Sciences. His research interests include population biology of marine fish and invertebrates, population phenogenetics, stress assessment, history of fisheries, historical ecology, and population dynamics. Dr. Lajus has authored numerous scientific articles, book chapters, and scientific reports, and conducted certification pre-assessments for a number of fisheries in Russia.

Dr. Robert J. Trumble joined MRAG Americas in 2000 as a senior research scientist and became Vice President in 2005. He has wide-ranging experience in marine fish science and management, fishery habitat protection, and oceanography. Dr. Trumble serves as Certification Manager for MRAG and serves as lead assessor for the Ozernaya assessment. He has overseen all MRAG pre-assessments and full assessments. He has received MSC training on three occasions, including the Risk-based Framework, and has led an RBF assessment on three occasions. Previously, he served as Senior Biologist of the International Pacific Halibut Commission in Seattle, Washington, in various research and management positions at the Washington Department of Fisheries, and with the US Naval Oceanographic Office. Dr. Trumble has extensive experience working with government agencies, commercial and recreational fisheries groups, Indian tribes, and national and international advisory groups. He received appointments to the Scientific and Statistical Committees of the South Atlantic Fishery Management Council and the Pacific Fishery Management Council, the Groundfish Management Team of the North Pacific Fishery Management Council, the affiliate faculty of Fisheries at the University of Washington, and the Advisory Committee of the Washington Sea Grant Program. Dr. Trumble received a Ph.D. in Fisheries from the College of Fisheries, University of Washington.

2.4 Peer reviewers

Dr. Greg Ruggerone has investigated population dynamics, ecology, and management of Pacific salmon in Alaska and the Pacific Northwest since 1979. He was the Project Leader of the Alaska Salmon Program, University of Washington, from the mid-1980s to early 1990s where he was responsible for conducting and guiding research at the Chignik and Bristol Bay field stations, preparing salmon forecasts, and evaluating salmon management issues. Most of his research involves factors that affect survival of salmon in freshwater and marine habitats, including climate shifts, habitat degradation, predator-prey interactions, and hatchery/wild salmon interactions. He is currently a member of the Columbia River Independent Scientific Advisory Board and the Independent Scientific Review Panel. He recently served as the fish ecologist on the Secretary of Interior review of dam removal on the Klamath River. During the past six years, he has evaluated salmon fisheries for sustainability using guidelines developed by the Marine Stewardship Council.

Dr. Vladimir Tabunkof, a retired fishery scientist, has worked throughout Sakhalin and the Russian Far East. He has experience in monitoring wild salmon populations, management of sustainable salmon fisheries, establishing salmon protected areas, planning for and evaluation of salmon hatcheries, and knowledge of salmon-dependent ecosystems. He has worked for a Russian fishermen's association, as a private consultant, and as director of SakhTINRO. He has attained a Docent of Hydrobiology, awarded in 1981 by Highest Attestation Commission of the Ministry of Education USSR; a Ph. D. in Biology awarded in 1974 by Zoological Institute of Academy of Science of USSR, St. Petersburg; and the equivalent of Master of Science in Zoology, Kazan State University, 1965.

2.5 Field Inspections

Inspections of the fishery and consultations with the client and various stakeholders were conducted to obtain information on the nature of the fishing, and the nature and relationship of management entities. A meeting with the client in Petropavlovsk-Kamchatsky on 29 May 2011 reviewed the assessment procedure and reviewed details of the site visit. From 30 May to 2 June 2011, the assessment team met in and around Petropavlovsk-Kamchatsky for a visit with the fishery and for consultations with stakeholders. The team also toured the Ozernaya fishery area. The team met with the clients, with the client's consultant, with federal and state salmon scientific and management agencies, and a stakeholder group to discuss scientific aspects of the fishery and to discuss and obtain information on Principles 1, 2, and 3. The team received relevant references, data, and personal communication used in writing the report. The team used this information to assure that all key topics received specific analysis in the assessment report; the stakeholder meetings assured that the team had a clear understanding of the issues of importance to stakeholders.

A summary of the site visit discussions follows:

29 May 2011 (Petropavlovsk-Kamchatsky)

Igor Redkin, Sergey Gluschenko, Aleksandr Tarasov, clients

- Site visit schedule
- Fishery history
- Fishing operations
- Governmental role
- Relationships among fishing companies

30 May 2011

Aleksandr Bugaev, KamchatNIRO scientist

- Population structure
- Fisheries forecasts
- High seas driftnet fishery
- Catch estimation
- Stock assessment

Oleg Zaporozhets, KamchatNIRO scientist

- Poaching
- Hatcheries

Sergey Shubin, KamchatNIRO scientist

- Stock assessment methodology

Sergey Korostelev, KamchatNIRO Director

- Research program

Sergei Barabanov, Cooperative fishing company RKZ-55

- Fishery operations
- Research projects
- Hatchery development limitations
- Annual fishery management process

(Travel to Kuril Lake)

Tikhon Shpilenok, Kronotsky Reserve Director

- Reserve description
- Anti-poaching activities
- Research activities

Vladimir Dubynin

- Stock Assessment
- Scientific basis for fishery management

(Travel to Ozernovsky)

Vityaz-Avto Fish Processing Plant Tour

Eldar Saenko, municipal police department

- Enforcement efforts
- Incidence of illegal harvest

31 May 2011 (Ozernovsky)

Mikhail Puzyrev, Competing fishing company "Kolkhoz Krasny truzhennik"

- Fishery operations
- Management practices
- History of fishery and conflicts among companies
- Concerns over fishery allocation and fishing practices by others

(Return to Petropavlovsk-Kamchatsky)

Team meeting to discuss remaining information needs

Aleksandr Tarasov, client

- Chain of custody

Vyacheslav Smorodin,SVTU, head of department

- Enforcement
- Significance of illegal fishing

1 June 2011 (Petropavlovsk-Kamchatsky)

Vladimir Golitshyn, governmental minister of fisheries

- Fishery regulatory process
- Anadromous Fish Commission
- Annual management process

Tatiana Mikhailova, NGO "Liga nezavisimykh ekspertov"

- Organization objectives
- Environmental concerns related to the fishery
- Regional habitat issues

2 June 2011 (Petropavlovsk-Kamchatsky)

Team meeting to conduct preliminary scoring

Table 2 Participants at meetings during the field inspections.

	Name	Affiliation	Date	Issues	Location
1	Robert Trumble	MRAG	29 May-3 June	All	P-K and Ozern.
2	Ray Beamesderfer	Cramer Fish Science	29 May-3 June	All	P-K and Ozern.
3	Dmitry Lajus	St Petersburg Univ	29 May-3 June	All	P-K and Ozern.
4	Aleksandr Tarasov	Client	29 May-3 June	All	P-K and Ozern.
5	Denis Semenov	WWF-RU	29 May-3 June	All	P-K and Ozern.
6	Mihael Blikshteyn	WSC	29 May-3 June	All	P-K and Ozern.
	Anatoly Dekshtein	WWF-RU	1-3 June	All	PK
7	Aleksandr Bugaev	KamchatNIRO	30 May	Population structure, fisheries forecasts	PK
8	Oleg Zaporozhets	KamchatNIRO	30 May	Hatcheries and poaching	PK
	Sergey Korostelev	KamchatNIRO	30 May	Research	PK
	Sergey Shubin	KamchatNIRO	30 May	Aerial surveys	PK
	Sergei Barabanov	RKZ 55	30 May	Fishery	PK
	Vyacheslav Smorodin	Kamchatka government	30 May	Enforcement	PK
	Vladimir Golitshyn	Kamchatka government	30 May	All	PK
	Tatiana Mikhailova	NGO "Liga nezavisimykh ekspertov"	2 June	Protected areas	PK
	Tikhon Shpilenok	Kronotsky Reserve	30 May	Protected areas	Kuril lake
	Vladimir Dubynin	Kronotsky reserve	30 May	All	Kuril Lake
	Sergey Vakhrin	Internet Portal FishKamchatka.ru	2 June	All	PK
	Igor Redkin	Vityaz-Avto	29 May-3 June	All	P-K-Ozernovsky
	Mikhail Puzyrev	Kolkhoz "Krasny truzhennik"	31 May	All	Ozernovsky
	Sergey Gluschenko	Client	29 May-3June	All	P-K-Ozernovsky
	Oleg Tiuzhekaev	Client	31 May – 1 June	All	Ozernovsky
	Eldar Saenko	Municipal police department	31 May-1 June	Enforcement	Ozernovsky

3 FISHERY DESCRIPTION

3.1 Area description

The certification unit includes terminal fisheries operated in the Ozernaya River and nearshore marine waters near the river mouth at the Sea of Okhotsk in the Southwestern part of Kamchatka Peninsula. Administratively, this area is a part of Ust-Bolsheretsk district of Kamchatka Kray of Far East Federal Region of the Russian Federation, and in terms of fisheries subdivision it is a part of Western Kamchatka subzone which includes North-Eastern part of the Sea of Okhotsk.

The Ozernaya River flows approximately 46 km from its origin in Kuril Lake. Kuril Lake is a large (77 km^2), deep (306 m maximum) crater lake. The lake is fed by snowmelt and several small streams. The lake level is quite stable with seasonal fluctuations of just one to three m. Kuril Lake and the upper portions of the Ozernaya River are located in a national wildlife preserve and the lake is also designated as a UNESCO world heritage site.

The area is extremely remote. This area has no road connecting it with the main city of Kamchatka, Petropavlovsk-Kamchatsky. Thus all transporting is done by water, air and by seashore (using road Petropavlovsk-Kamchatsky – Ust-Bolsheretsk). The watershed is largely undeveloped except for two small towns near the river mouth, Ozernovsky and Zaporozhie on left and right banks of the river, each consisting of about 2,500 residents. During the two-month fishing season, many people also come to the region from Petropavlovsk-Kamchatsky and from mainland Russia for seasonal work with the fishing companies.

3.2 Historical Fisheries

Fishing is and has always been the primary occupation of people in the Ozernaya area. Pacific salmon were fished a long time ago by indigenous peoples in Kamchatka; however, almost nothing is known about this in the Ozernaya river basin. The Russian fishery on the Ozernaya started in 1897, and the first settlement was founded in 1907. In 1914 the first cannery started operating. At the time, “S. Grushevsky and Co” was among the biggest fishing companies in Kamchatka. The fishery industry in the area gradually developed during the Soviet period, although catches began to decrease in the 1950s due to Japanese driftnet fishing and worsening oceanic conditions. In early 1990s considerable changes took place: ban of driftnet fishing in the open ocean and moving it in Exclusive Economic Zone of Russia, with development of Russian driftnet fishing in addition to Japanese and redistribution of fishing parcels and fishing rights in conditions of economic crisis.

Figure 1. Southern Kamchatka Peninsula and including the Ozernaya fishing area addressed by this assessment.

3.3 The Fishing Companies: Vityaz-Avto and Delta

Vityaz-Avto was founded in 1997 and grew quickly. In 2001 the company employed 185 workers; in 2006 new fish processing facilities were built in Ozernovsky (200 mt of production per day), and the number of workers increased to 500-600 in season. The company also has two other branches in the Western coast of Kamchatka (in Oktiabrsky and Sobolevo towns). The company's fleet consists of 10 vessels. Most production is sold abroad, to Japan and Canada.

Delta has worked in Kamchatka since 1998 and operates a modern fish processing facility with a capacity 170 mt per day are located in Ozernovsky town. The company employs more than 500 people in season and more than 100 in the off season. In addition to Ozernaya River, the company fishes in other areas: Opala and Bolshaya River areas. The Opala and Bolshaya Rivers are approximately 50 and 100 km north of the Ozernaya (Figure 1), in a region with no roads. More than half of total production is exported to Asian countries.

The companies pay considerable attention to investing in community development projects of the town of Ozernovsky. In addition to employing the local inhabitants in fish processing factories, the company contributes to maintaining social sphere of the town and has numerous letters of gratitude from different organizations in the area.

Figure 2. Vacuum packing section of the Vityaz-Avto fish processing facility and an example of its production.

3.4 Fishing Method

3.4.1 Gear

The fishery is prosecuted with fixed trap nets in marine waters along the shoreline near the Ozernaya River mouth and with beach seines in the lower reaches of the river.

Coastal trap nets typically consist of a mesh lead set perpendicular to shore to guide fish into one or more mesh wing-style traps where narrowing mesh fykes make it difficult for fish to exit. The mesh lead or "fence" is usually 1100 -1300 m in length and 11-15 m deep at low tide. The mesh size of the central net and the traps is being chosen to prevent fish from being gilled in the net cells. Traps are constructed of net mesh on a steel frame, typically have a wall height of 9 m and do not reach bottom. Coastal trap nets are effective because tidal exchange is relatively small and littoral areas are wide and gradually-sloped. Traps have proven to be especially efficient at capturing fish migrating in the coastal area. This type of fishing is passive and catch per unit effort is related to the intensity of the run strength. Coastal trap nets are operated from small boats. Catch is typically crowded from traps and dip netted into the boats for transport a short distance to shore or the fish processing plant where they are off-loaded by crane or hand at the beach.

Beach seines are long nets used to encircle and crowd fish toward shore where they can be captured. In the Ozernaya, these seines are typically about 200 m in length. Seines are fished in the shallow waters of the lower river where the current is relatively slow and the river is shallow. Seines are set from small skiffs and hauled from shore with vehicles and by hand (Blikshteyn 2011).

Figure 3. Photos of fishing gear deployment: fish trap (above) and beach seine (below).

3.4.2 Seasons

The sockeye fishery is typically conducted from July to early September with the bulk of the harvest occurring in late July and early August. The timing of peak fishing might vary over a several week period depending on annual differences in run timing.

3.4.3 Organization

Vityaz-Avto leases seven fishing parcels in Ozernaya River area: five in the sea (numbers of sea parcels according to the List of Fishery Parcels of the territory of Kamchatka Kray 2007, (http://www.kamchatka.gov.ru, are the following: 189, 190, 191, 197, 203 and 204), and one in the river (752). Not all parcels are used every year, for instance, in 2009 only two sea parcels were used (203 and 204). The river parcel is used in all years because in-river fishing is simpler and cheaper than sea fishing.

Delta leases one sea fishing parcel (198) and one river parcel (758).

There are several other companies participating in fisheries in the Ozernaya river basin. The sockeye catch of Vityaz-Avto and Delta comprises 23-44% of total 2004-2011 catch in the area. Other fishing companies using set nets and beach seines in the Ozernaya River area (mouth of the river and adjacent part of the sea) include: Ozernovsky RKZ N9 55 Ltd, Rybkholkam Ltd, RK Zapadnyi Ltd, Kolkhoz Krasnyi Truzhennik Ltd, Delta Ltd, IP Vazikov I.K., NIO Alyk Ltd, Kondor Ltd, IP Evdokimov S.I., SOI Khaiko, FGU Direktsia LRZ, Energostroy Ltd.

Fishing by indigenous people and sport fishing also occurs.

3.5 Harvested Species – Sockeye Salmon

3.5.1 Description

Sockeye are an anadromous species that spawns and rears in freshwater then migrates to before returning to spawn (Burgner 1991). This species occurs in systems around the north Pacific but primarily from Washington USA to Kamchatka. Unlike other salmon, sockeye generally spawn in areas associated with lakes. Adults typically return to spawn at 5 or 6 years of age after 2 or 3 years at sea. Like most salmon, all adults die after spawning.

The Ozernaya system supports one of only two large sockeye populations in Russia (the other being the Kamchatka River in eastern Kamchatka). The biology and life history of Ozernaya sockeye has been subject to extensive study since 1932 when the Pacific Institute for Fisheries and Oceanography was organized at Kuril Lake (Bugaev et al. 2009). In 1940 the institute organized a research station on the Kuril Lake.

Ozernaya sockeye return to freshwater from late May to early September, with the peak of the run typically occurring in late July and early August. Fish typically require 2 to 7 days to reach the lake with 70% approaching the lake in the third day (Bugaev et al. 2009). Spawning takes place from early July to the end of March, with the most massive spawning from September till November. Spawning occurs predominately in the littoral zone of Kuril Lake at depths of 3 m or less (Figure 4) and also in the upstream part of Ozernaya River and in lake tributaries. Total area of spawning grounds has been estimated at 1,055 thousand m^2. Of this. 26% occurs in the river, 3% in springs, and 71% in the lake.

Figure 4. Sockeye salmon spawning the river outlet of Kuril Lake (from Bugaev et al. 2009).

The life history and limiting factors of Ozernaya sockeye (Figure 5) are among the most studied and documented of any salmon species anywhere (Bugaev 2011). Embryonic development of Ozernaya River sockeye takes from 5 to 8 months. Larvae remain in the gravel for several days or weeks after the yolk sac has been completely resorbed. Fry emerge from the gravel from the end of March to September. Juvenile sockeye rear in Kuril Lake for 2-3 years where they feed on zooplankton. Sockeye smolts typically migrate seaward in June and July.

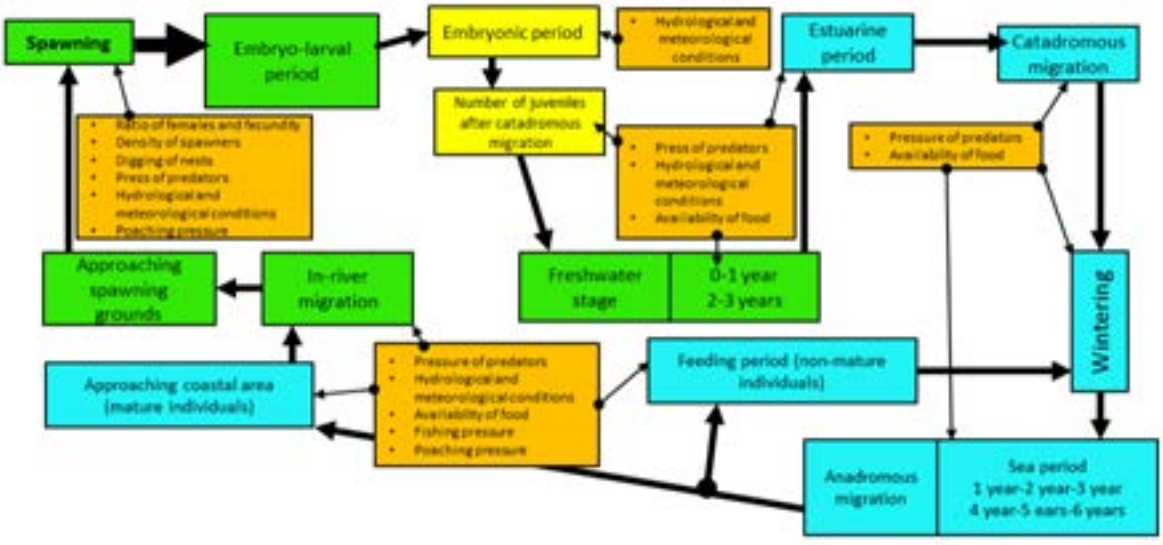

Figure 5. Main stages of the life cycle of sockeye and effecting factors.

The marine period of Ozernaya sockeye has been studied quite well, probably in greater detail than other sockeye stocks. After migrating to the sea, smolts spend 2-3 months near the river of origin and then migrate southeastwards for wintering. In summer time sockeye migrate northwards or northwestwards (Figure 6). Sockeye from Kuril Lake range 600-1600 km in the ocean. Upon approaching the Sea of Okhotsk, not all fish return directly to the Ozernaya River. Some fish migrate along the West Kamchatka coast and in the sea up to 2000 km and return. Many adult Ozernaya sockeye often migrate southward along the west coast of Kamchatka before entering the river.

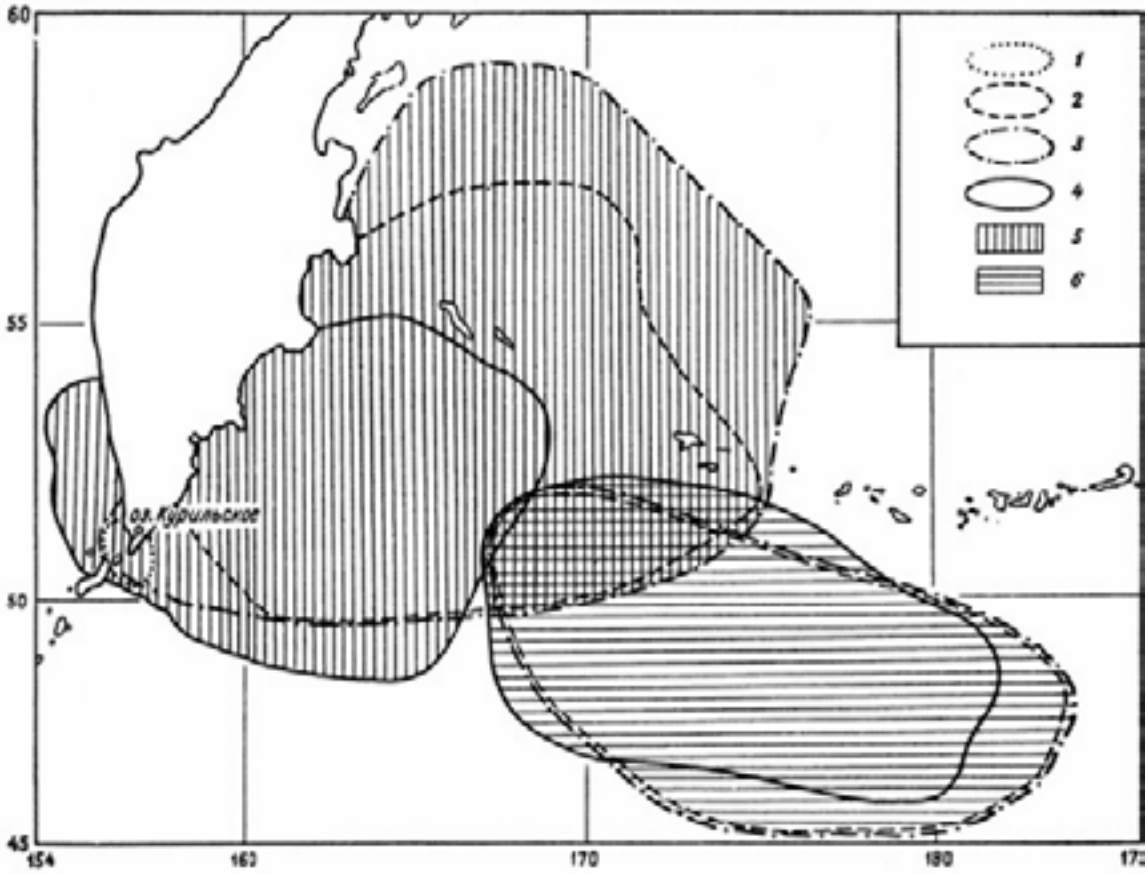

Figure 6. Distribution of different age groups of sockeye of the Ozernaya River in the North part of the Pacific Ocean (Konovalov 1971). 1 = first months after emigration; 2 = after fist winter at sea; 3 = after second winter at sea; 4 = after third winter at sea; 5 = autumn distribution; 6 = winder distribution.

3.5.2 Stock Structure

Two seasonal races of sockeye are recognized in the Ozernaya River. The early run returning primarily in June and early July typically spawns in tributaries to Kuril Lake. The late run returning primarily in July and August spawns in Kuril Lake and the Ozernaya River. The later part of the early run and the early portion of the late run overlap substantially in timing. The late run predominates and its contribution in total amount is approximately 98%.

3.5.3 Status

The Ozernaya/Kuril system supports the largest and most productive stock of sockeye salmon in Asia. Annual run size has averaged over 6 million sockeye per year over the last 20 years. This stock supports over 90% of the annual average catch of sockeye along the west coast of Kamchatka.

Quantitative time series data on run size and escapement of Ozernaya sockeye has been collected since 1940 when the Pacific Institute for Fisheries and Oceanography established a research station at Kuril Lake. In 1940 a counting weir was located in Ozernaya River 5 km downstream from Kuril Lake. In 1967 the weir was moved upstream and now is situated right below Kuril Lake (Figure 7). The weir has been repaired and renovated several times, the last time in 1999. The fish are counted through four movable weir sections, 25-30 cm x 100-120 cm in the weir, which are closed when there are no fish in front of the weir, and are open when fish are present. Operators count fish systematically (for instance, for 10 minutes out of each hour), and results are then extrapolated for the entire period that weir sections are opened. Recently, electronic counters are set up in the counting weir, which will allow counting fish continuously.

In addition to counting fish which enter the Kuril Lake, regular observations of spawning grounds in the lake and inflowing rivers are also made. Annual estimates of juvenile abundance have begun to be made in recent years. Data are also collected on size, age and sex structure of commercial catches in the sea, mouth and source of river, survival of eggs, and distribution and feeding of juveniles.

Figure 7. Photo of salmon counting weir in the Ozernaya River at the outlet of Kuril Lake.

Abundance of Ozernaya sockeye has varied considerably over the years but has generally increased since 1980 and is currently fluctuating about record levels (Figure 8). Recent increases corresponded to favorable changes of ocean conditions coupled with a reduction in intensive Japanese driftnet fishing on the high seas. High abundance in the 1940s was also probably due to favorable oceanic conditions. During this period, high abundance was also observed in other species of Pacific salmon. Population declines in the 1970s occurred during a period of intensive Japanese driftnet fishing in high seas and unfavorable oceanic conditions. Bugayev and Dubynin (2000) have correlated annual abundance to: 1) spawning escapement, 2) length and weight of smolts migrating from Kuril Lake, and 3) inshore abundance of West and North-East Kamchatka pink salmon.

Escapements of Ozernaya sockeye are managed to produce maximum sustained yield based on production curves fit to spawner-recruit data (Figure 9). Escapement is estimated at the counting weir. Production includes future harvest in marine and freshwater fisheries plus escapements apportioned to spawner brood year based on age composition. Current escapement goals are 1 to 2.3 million sockeye as counted at the weir. Escapement goals have changed over the years as stock productivity has varied in response to ocean conditions and marine fishery interception rates. Escapement goals for the period 1970-1994 were 2.5-3.5 million. For instance, for period 1970-1994 the optimal number of spawners was considered about 3 million, and since 1995 it is about 1.5-1.9 million. Escapement goals have been consistently met or exceeded since the goal was reduced in 1994.

At higher than optimal spawning density on the spawning grounds, it has been reported that overspawning results in a decreased number of Ozernaya sockeye recruits per spawner due to resorption of gonads and destruction of redds by later spawners. Large spawner densities have been observed to result in the formation of large schools of sockeye which do not appear to participate in spawning. Substantial numbers of non-reproductive fish were observed in 2007 when a record escapement of 4.9 million sockeye resulted from an unanticipated large run coupled with a late run timing.

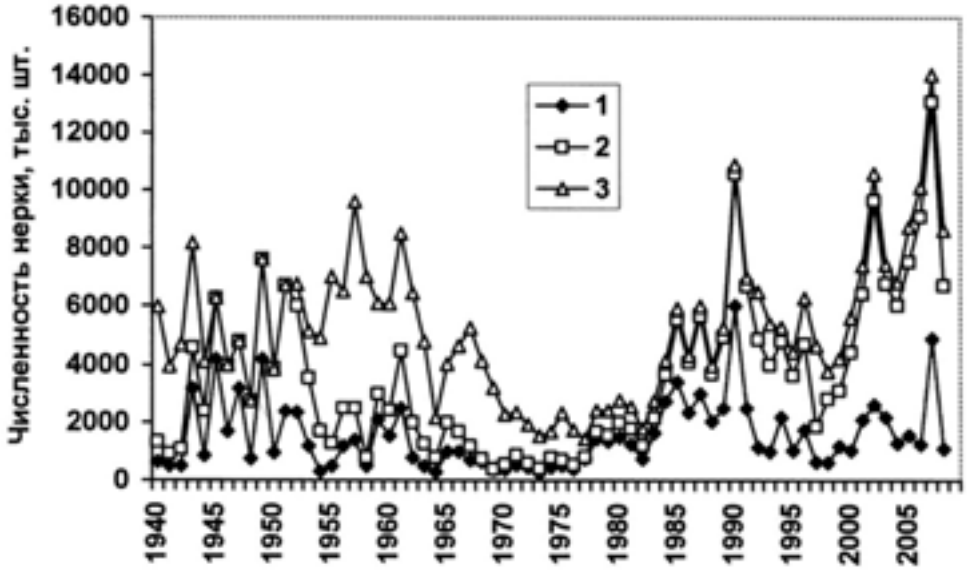

Figure 8. Ozernaya sockeye abundance (millions), 1941-2010 (Dubynin et al. 2007; Antonov et al. 2007; Bugaev et al. 2009). 1=mature part of the stock, 2=fish approaching the shore, 3=spawners.

Table 3. Abundance of Ozernaya sockeye, 1990-2011 (unpublished KamchatNIRO data).

	Abundance (thousands)			Exploitation rates		
Year	Ocean	Coast return	Spawners	Drift net	Local	Total
1990	10883	10583	6000	3%	43%	45%
1991	6979	6679	2500	4%	63%	64%
1992	6477	4883	1150	25%	76%	82%
1993	5408	4005	1000	26%	75%	82%
1994	5282	4818	2200	9%	54%	58%
1995	4448	3648	1050	18%	71%	76%
1996	6258	4728	1750	24%	63%	72%
1997	4654	1870	650	60%	65%	86%
1998	3778	2842	620	25%	78%	84%
1999	4217	3163	1190	25%	62%	72%
2000	5625	4450	1050	21%	76%	81%
2001	7398	6421	2110	13%	67%	71%
2002	10598	9650	2635	9%	73%	75%
2003	7433	6764	2200	9%	67%	70%
2004	6806	6016	1300	12%	78%	81%
2005	8726	7520	1565	14%	79%	82%
2006	10111	9088	1250	10%	86%	88%
2007	14667	13073	4910	11%	62%	67%
2008	9229	7633	1114	17%	85%	88%
2009	7862	7697	1255	2%	84%	84%
2010	9719	7899	1200	19%	85%	88%
2011	12062	10020	1730	17%	83%	86%
Avg. (all)	*7665*	*6520*	*1838*	*17%*	*72%*	*76%*
Avg. 10-yr	*9721*	*8536*	*1916*	*12%*	*78%*	*81%*

[1]*before driftnet fishery harvest.*

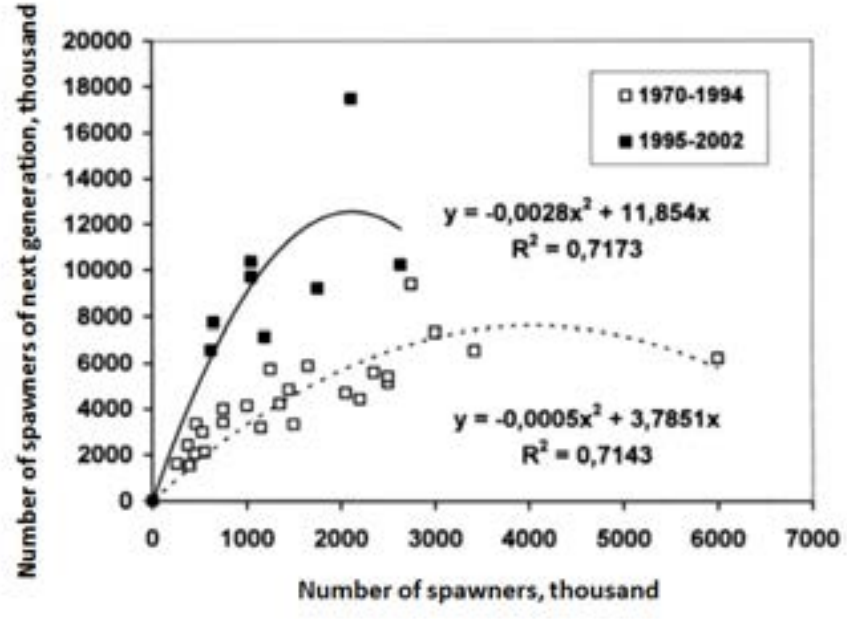

Figure 9. Spawner-recruit relationships for Ozernaya sockeye (thousands of fish) (from Bugaev et al. 2009).

3.6 Harvest

3.6.1 Terminal Commercial Fishery

Since 2000, annual harvest of Ozernaya sockeye in all fisheries has ranged from about 3 to 10 million fish per year and averaged about 6 million. These are equivalent to from about 6 to 20 thousand metric tons per year (average of about 12 million). Corresponding annual exploitation rates of Ozernaya sockeye range from about 60 – 80% per year and average about 70%.

The fishing companies, Vityaz-Avto and Delta, typically account for one quarter to one third of the total harvest of Ozernaya sockeye (Table 4). The sockeye catch by Vityaz-Avto accounted for 12-14% of the total in this fishery between 2004 and 2007, but approached almost 20% in 2008. Delta's catches account for 10-14%. The majority of the sockeye harvest by these two companies occurs in the river and a relatively small portion occurs in the sea nets.

Ozernaya sockeye comprise a substantial portion of the catch in coastal sea nets as far as the Bolshaya River 150 km north of the river. Ozernaya sockeye are estimated to account for 50% of the sockeye harvest near the Bolshaya, 90% near the Opala, and almost 100% south of the Koshegochek Rivers. Migrating salmon from other populations spawning in the rivers situated to the north of Ozernaya River also pass through the area of Vityaz-Avto and Delta sea set nets but interception rates are believed to be very low due to relatively lower abundance and north-to-south coastal migration patterns.

Harvest is managed over the course of the fish run in each year based on fish numbers and run timing in an attempt to ensure that escapement is provided throughout the duration of the run. This objective can be challenging due to the variable and unpredictable nature of the return (Figure 10). Escapements are regulated by the means of fishery closure or "pass" days. Historically, these closures occurred primarily in the river fishery but more recently have also been employed in the marine trap net fishery as well. For instance, in 2010, KamchatNIRO instituted two one-day closures of the river fishery and one 4-day closure of coastal nets around the Ozernaya River (Blikshteyn 2011).

Table 4. Annual harvest of sockeye in Ozernaya fisheries, 2004-2008.

Company	Catch in mt by years				
	2004	2005	2006	2007	2008
Ozernovsky RKZ № 55 Ltd	2 734,000	4 484,000	4 490,000	5 123,000	5 265,000
Rybkholkam Ltd	1 350,000	2 217,000	1 965,000	2 461,000	1 533,000
RK Zapadnyi Ltd	–	343,000	370,000	456,000	459,000
Kolkhoz Krasnyi truzhennik	2 549,000	4 434,000	4 160,000	5 026,550	1 533,000
Vitiaz-Avto Ltd	1 372,000	2 217,000	2 055,000	2 465,000	3 066,000
Delta Ltd	1 372,000	1 742,000	2 145,000	2 212,000	1 988,600
IP Vazikov I.K.	266,000	681,000	660,000	800,000	766,500
NIO Alyk Ltd	180,000	435,000	470,000	505,000	613,200
Kondor Ltd	128,600	260,000	190,000	342,000	–
IP Evdokimov S.I.	128,600	80,000	–	–	–
SOI Khaiko	–	–	–	–	459,900
FGU Direktsia LRZ	–	–	50,000	–	–
Indigenous people	6,700	6,400	–	16,060	–
Sport fishing	–	–	100,000	–	–
Ozernaya river, fishing from sea side					
FGU Direktsia LRZ	–	–	36,754	138,000	–
Energostroy Ltd	–	–	100,000	–	–
IP Evdokimov S.I.	–	–	50,000	–	–
SOI Khaiko	–	25,000	–	–	–
Total in Ozernaya River	10 086,900	16 924,400	16 841,754	19 544,610	15 684,200

Table 5. Annual catch (metric tons) of sockeye in Ozernaya fisheries, 2009-2011.

	2009		2010		2011	
Company	**Sea**	**River**	**Sea**	**River**	**Sea**	**River**
OAO "Ozernovsky RKZ № 55"	305.2	4274.9	1192.3	4113.6	272.7	5535.0
OOO "Rybkholkam"	169.0	1032.6	628.1	1526.3	228.0	2481.6
OOO PK "Zapadny"	0.0	355.3	0.0	322.0	0.0	553.6
RA "Kolkhoz "Krasny Truzhennik""	236.5	673.3	354.7	533.2	212.0	911.8
OOO "Vityaz-Avto"	800.0	3040.0	1091.7	2310.8	400.4	3885.4
OOO "Delta"	509.6	1602.8	356.4	2207.2	176.6	1917.7
OOO NIO "Alyk"	0.0	0.0	0.0	0.0	0.0	449.5
OOO SOI "Khaiko"	33.1	249.3	101.2	44.1	27.3	172.0
OOO "Dary Kamchatki"	50.0	0.0	255.3	0.0	232.7	0.0
OOO "Oktiabrsky rybokombinat"	200.0	0.0	483.9	0.0	351.2	0.0

Sea harvest includes marine traps but not offshore drift net fishery

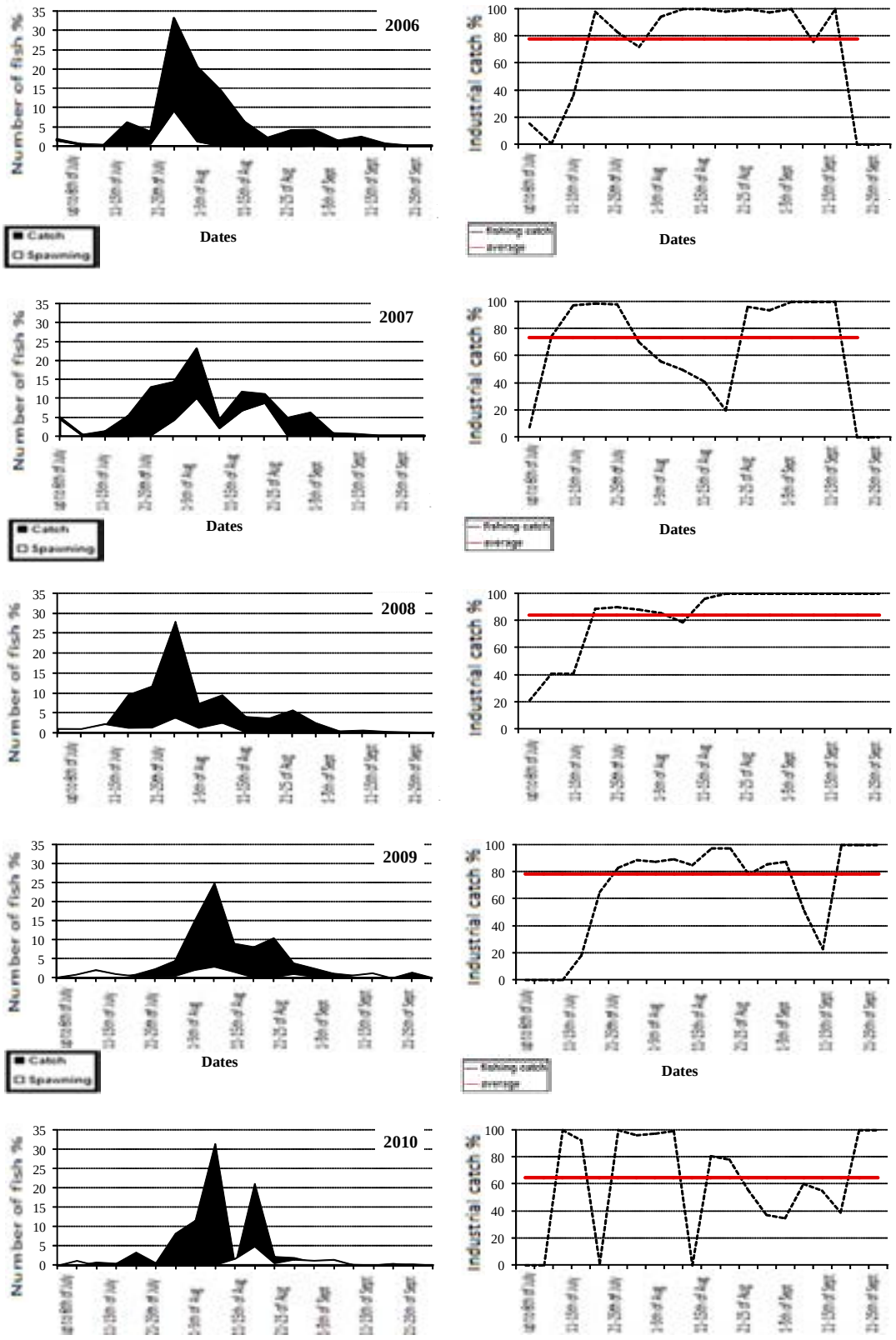

Figure 10. Daily patterns of harvest, escapement and exploitation of Ozernaya sockeye, 2006-2010 (Shevlyakov et al. 2011).

3.6.2 Marine Drift Net Fishery

Ozernaya sockeye are subject to harvested Russian and Japanese drift net fisheries occurring in areas of the Pacific Ocean, Sea of Okhotsk, and Bering Sea (Bugaev and Dubynin 2000; Bugaev et al. 2009). This fishery primarily targets mature sockeye, using net mesh size to avoid catch of smaller, immature fish. By-catch of pink, chum, and cherry salmon taken in high seas drift nets is typically discarded.

Marine harvest rates have varied considerably over the years in response to changes in management of the drift fisheries. Prior to introduction of the 200-mile exclusive economic zone in 1977 and 1978, most harvest of Ozernaya sockeye occurred in the largely unregulated drift net fisheries operated in marine waters primarily by Japan.

From 1977 until 1991, drift fishing effort within the EEZ was very limited and corresponding harvest of Ozernaya sockeye was very low. However, drift fisheries continued in the Pacific Ocean outside of the EEZ until 1993. This fishery harvested large numbers of sockeye including those of Ozernaya origin but estimation of specific numbers is difficult due to incomplete catch data and the mixed stock nature of the far flung fishery. In 1993, drift fisheries outside of the EEZ's were banned by agreement between Russia, Japan, Canada, and the United States under the "Convention for the Conservation of Anadromous Fish Stocks in the North Pacific Ocean."

Beginning in 1992, Russia began leasing some drift fishing rights inside the EEZ to Japanese vessels under bilateral agreements between the governments of the USSR and Japan adopted in 1984 and 1985. For instance, Japan has secured quota from Russia for 10,275 tons of salmon in 2007 and 9,735 tons of salmon in 2008 from the Russian EEZ. Pressure of ocean driftnet fishing is relatively stable in recent years, which makes it easier to account it for. Harvest of Ozernaya sockeye in marine drift net fisheries is estimated annually based on reported harvest and catch composition data. This task has been made much simpler by the current distribution of the drift fishery inside of the EEZ where it primarily harvests Asian sockeye stocks of which the Ozernaya is the largest (Bugaev and Dubynin 2000). Drift net fisheries are currently estimated to account for less than 20% of the annual harvest of Ozernaya sockeye with annual exploitation rates of approximately 67-88% (average 81%) since 2000.

3.6.3 Sport & Indigenous fisheries

Small sport and personal use fisheries by local people occur in the Ozernaya Basin for salmon. At least one high-end fish guiding camp has also been developed for non-local angers fishing primarily for rainbow trout and coho salmon. Annual exploitation rates in these fisheries are reportedly much less than 1%.

3.6.4 Illegal fishing

Illegal fishing has long been a serious problem for salmon in Kamchatka. It is fundamentally a social problem resulting from economic factors and ineffective enforcement. Illegal fishing can take various forms (Maksimov and Leman 2008):

- Industrial poaching: exceeding of quota by fishing companies.
- Criminal poaching: organized illegal fishing in industrial scale.
- Everyday poaching of first type: unorganized illegal fishing by the local population for sale to the market, processing factories and/or illegal packers.

- Everyday poaching of second type: unorganized illegal fishing by the local population primarily for personal use.

Industrial and everyday poaching use both fish and roe, whereas criminal poaching generally uses only roe. Geographically, industrial poaching takes place mostly in sea, mouths of spawning rivers and in large rivers, while criminal and everyday poaching are located in spawning rivers and in spawning grounds.

Illegal harvest volume is difficult to estimate reliably but it is evident that (i) the scale of illegal harvest varies considerably from area to area depending on transportation infrastructure; and (ii) in a number of large river systems, which are major contributors of commercial catch, the scale of illegal catch may be not only comparable, but even (for low abundance species) exceed official catch by up to three fold, according to a 2008 study by TRAFFIC Russia (Dronova and Spiridonov 2008). Large-scale illegal harvest grew rapidly around 1988 during uncertain economic times accompanying the dissolution of the Soviet Union. Levels are believed to have been mediated somewhat by improving conditions in more recent years. However, illegal harvest continues to be a substantial problem in many areas of Kamchatka (Clarke 2007; Clarke et al. 2009).

Illegal harvest of Ozernaya sockeye was historically a serious problem but the incidence has been substantially reduced by strong enforcement efforts over the last 5-10 years. Poaching in the Ozernaya system is currently believed to consist primarily of small scale activities of local or seasonal peoples for personal consumption (Blikshteyn 2011). Russian fishing regulations don't allow for personal or sport take of salmon in the Ozernaya River although no license or limits are required to fish for char (Blikshteyn 2011).

The upper river, lake, and tributaries have been protected since 2007 by inclusion in the South Kamchatka Federal Sanctuary (Figure 11). The present high level of protection of salmon in the Ozernaya River basin has occurred only since the last several years. In 1990s poaching in the area, including Federal Sanctuary, was extremely high. It was mostly targeted on sockeye roe and done by criminal teams equipped with helicopters. During the following 10-15 years, the situation changed drastically. Aggressive anti-poaching efforts in the refuge area have practically eliminated significant poaching enterprises within the reserve where criminal activities were once common.

Concerted enforcement efforts in the lower and middle river, and marine areas are now supported and funded by the commercial fishing companies who are strongly incentivized to protect the resource and also have significant resources to support enforcement activities. Opportunities for large scale poaching by the local population for sale are constrained by the visibility of the accessible area to the local community and costs of transport from the remote area. This area has very poor connection to the administrative center, i.e. Petropavlovsk-Kamchatsky, and thus transporting of poaching production is very expensive.

Figure 11. Area, including Kuril Lake and upper portion of the Ozernaya River, protected by South Kamchatka Federal Sanctuary (yellow border).

We have no official data of number of prosecutions and fines during last decade for Ozernaya river because official data exist only for Ust-Bolsheretsk administrative district, and they are not indicative because they are pooled with other areas where poaching is higher. But all the information from both official (local police of Ozernovsky town, and Ust-Bolsheretsk town, SVTU, South Kamchatka Sanctuary staff), and unofficial sources including interviews of local people, says that currently level of illegal fishing considerable decreased since 1990s, some cases of illegal fishing were recorded until few years ago, but currently it is nil.

Changes in the commercial fishery management and catch allocation system have substantially reduced incentives for industrial poaching. Illegal catch decreased with introduction of a new system of management. Under current Olympic system, companies do not need to hide the catch because of absence of individual quota. Moreover, the size of official catch is taken into consideration during competition for fishing parcels, and therefore companies with larger catch will have advantages at next distribution of leases. In Ozernaya River, where fishing is regulated exclusively by days closed to fishing, the commercial poaching basically means fishing during closed days. This is not easy to do because all fishing operations in the lower part of the river are easily observed from the town.

3.7 Enhancement

No hatcheries are operated in the Ozernaya basin. In total, five hatcheries exist in the Kamchatka region, three in the eastern coast of the peninsula, and two (Table 6) in the western coast on Bolshaia River, whose mouth is situated about 150 km north of the mouth of Ozernaya River. There are plans to build two new hatcheries on Kamchatka, which have not been implemented due to budget limitations. Neither of these involves the Ozernaya River basin. Given the generally high degree of homing fidelity of coho, chum, sockeye and Chinook, and the distance from the Ozernaya River, hatcheries are not thought to impact the wild populations fished in Ozernaya fisheries.

Table 6. Characteristics of Pacific salmon hatcheries in Kamchatka (based on Sovremennye… 2006, Markovtsev 2008).

Hatchery (year of foundation)	River of location	Production				
		Species	Number (millons)	Return rate, %	Use of non-native eggs	Contribution in mixed population
Malkinsky (1982)	Bystraia River (tributary of Bolshaia river)	Sockeye	0.41-0.72 (2000-2002), 0.7 (2008)	4.43		2,7-6,7% in Bolshaia River
		Chinook	0.30-1.18 (2000- 2006), 0,7 (2008)	0.53		1% in mouth of Bolshaia river, 30-50% in Bystraia River
Ozerki (1992)	Plotnikova river (tributary of Bolshaia river)	Chum	3.0-5.3 (2000-2002)	0.24-0.4	Part of eggs transported from Kliuchevka River (other tributary of Bolshaia River)	3,7% (2005) in Bolshaia, 1% in sea
		Sockeye	3.5-7.7 (2000-2002)	0.06-0.1	Part of eggs transported from Bystraia River (other tributary of Bolshaia River)	
		Coho	0.05-0.66	<1%		

3.8 Ecosystem Elements

3.8.1 Retained Species

For the purposes of this assessment, retained species are defined as those which provide a commercial value significant enough to warrant processing and sale (and thus an economic incentive for capture). Other species that are not typically processed for commercial value are treated as bycatch. Some bycatch species are discarded at the net sets and additional sorting occurs at the processing plants. All fish delivered to the plants for processing and sale are weighed and numbers are reported to the management agencies.

In additional to sockeye, the primary species retained and processed by the Ozernaya fishery include pink salmon, chum salmon, coho salmon, and char. Small numbers of marine species including flatfish and sole caught in coastal trap nets might also be retained and processed.

Non-sockeye retained species typically average 6% of the total catch by weight for 2001-2010 (Figure 12). Pink salmon comprised the majority of the non-sockeye total, averaging 5% of the total harvest. Annual proportions can vary from 2 to 20% depending on pink salmon abundance. Pink salmon harvest averaged 9.5% in even years when to 0.4% in odd years (Shevlyakov et al. 2011). (Pink salmon exhibit an even-year dominance cycle in western Kamchatka.)

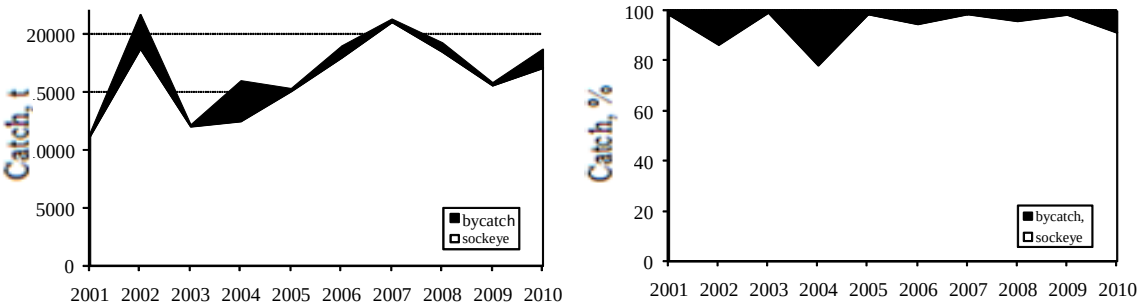

Figure 12. Relative harvest of sockeye and other species (pink salmon, chum salmon, coho salmon, and char) in the Ozernaya sockeye fishery (2001-2010) (Shevlyakov et al. 2011).

Table 7. Harvest by species in the 2009 Vityaz-Avto Ozernaya sockeye commercial salmon fishery (metric tons).

Parcel	Gear	Pink	Chum	Sockeye	Coho	Char	Total
204	sea setnet	1	5	200	1	1.3	208.3
203	sea setnet	1	5	200	1	1.6	208.6
752	river beach	1	1	3,040	10	12.5	3,064.5

Pink salmon (Oncorhynchus gorbuscha)

Pink salmon are the most abundant of the Pacific salmon and are found throughout the north Pacific Rim from Japan to the U.S. Pacific Coast as far south as the state of Oregon (Heard 1991). This species typically spawns in small to moderate-sized streams within a few miles of the sea or in the intertidal zone at the mouths of streams. Major pink salmon runs occur in coastal stream throughout the greater Sea of Okhotsk basin and along the east and west coasts of the Kamchatka peninsula (Heard 1991). The status of species is robust

throughout the Kamchatka region – all populations are at low risk of extinction (Augerot and Foley 2005).

The spawning migration of pink salmon in Western Kamchatka occurs primarily in July and August. Pink salmon are the smallest of the Pacific salmon, typically averaging about 1.5 to 2 kg and 50-60 cm. All pink salmon are anadromous and die after spawning. Eggs hatch in late winter or spring and fry emerge from the gravel several weeks after hatching to migrate downstream into salt water. Pink salmon from western Kamchatka range into ocean waters of the Okhotsk and Bering seas.

Pink salmon mature at two years of age which means that odd-year and even-year populations are essentially unrelated. A strong odd-year or even-year cycle will generally predominate, although in some streams both odd- and even-year pink salmon are about equally abundant. Even-year returns currently dominate the pink return of western Kamchatka. Occasionally cycle dominance will shift, and the previously-weak cycle will become more abundant. This occurred in western Kamchatka following a very weak 1983 return due to overspawning two years earlier.

Chum salmon (Oncorhynchus keta)

Chum salmon have the widest distribution of all Pacific salmon ranging in Asia from Korea to the Arctic coasts of Russia and in North America from the Arctic Coast to Oregon (Salo 1991). Chum salmon are abundant in the larger streams and rivers of the Kamchatka Peninsula (Heard 1991) although many chum populations are believed to be threatened by high fishing rates (Augerot and Foley 2005). Although there are about 18 large streams in Western Kamchatka, most of the chum production comes from six streams from the Icha River southward. The Bolshaya, Icha, and Kikhchik rivers all contain large chum populations.

Chum salmon include summer and fall races – only summer chum occur in Kamchatka (Salo 1991). Chum salmon in Western Kamchatka typically spawn from June to September with peak runs in July or August. Chum salmon, like pink salmon, emigrate from freshwater soon after emerging from the gravel in spring. However, chum salmon return from the ocean in overlapping cohorts after 2 to 4 years in the ocean. Chum salmon possess more pronounced homing and fish return for spawning in the river or even tributary where they were born. As a result, distinct genetic differences are typically found among populations in different rivers.

Coho salmon (Oncorhynchus kisutch)

Coho salmon are generally distributed in streams and rivers around the Pacific Rim from the Sea of Okhotsk to northern California (Sandercock 1991). Distribution in Kamchatka is generally limited to the southern portion of the Peninsula. Significant populations in southwest Kamchatka occur in the Bolshaya, Icha, and Kikhchik rivers. Numbers are typically much smaller than those of pink, chum and sockeye salmon. Run timing for spawning is July through September. Coho salmon generally spawn in areas throughout a river system where they rear for one year before undergoing smoltification and migrating the sea in spring. Most adults return to spawn at 3 years of age.

Char

Char (Kundscha) are widely distributed and common throughout the Kamchatka region. Two species of char are associated with this fishery: arctic (*Salvelinus malma) and* white-

spotted (*S. leucomaensis)*. There is a lot of discussion about taxonomy of Salvelinus. In Soviet tradition it was common to consider species *Salvelinus alpinus* in a broad sense. In this case *Salvelinus alpinus alpinus* and *Salvelinus alpinus malma* were considered as subspecies (Salvelinus leucomaenis was considered as a separate species). Because of that in Russian literature Arctic char (*S. alpinus*) often includes *S. malma*. Moreover, "malma" was very often used as a common name for all forms of *S. alpinus*. i.e. "broad-sense" Arctic char, i.e. *S. alpinus malma* does occur in Ozernaya River. "Narrow sense" Arctic char, i.e. *S. alpinus alpinus* does not occur in Ozernaya river basin, but they occur in some lakes of Southern Kamchatka, such as Dolgoe Lake (Paratunka river basin) and Nachikinskoe Lake (Paratunka river basin, near Petropavlovsk-Kamchatsky) and in some other parts of Kamchatka (according to Leman and Esin 2008). Life history of these species is diverse and includes anadromous and resident individuals. Char are subject to some sport fishing and limited commercial harvest. These species are not actively managed and no concerns for status have been identified.

3.8.2 By-catch

Trap nets and seines employed in this fishery generally keep the entire catch of all target and non-target species alive until it gets loaded into boats or trucks for delivery to the processor. The entire catch including target and non-target species is typically dipped or brailed from the trap or seine for delivery to the plant (Blikshteyn 2011). Fishers don't typically handle fish directly, so there is little opportunity for sorting of bycatch at the capture site. However, particularly in marine trapnets, fishers might brail only commercially-important species, while leaving more bottom-oriented bycatch species (like flatfish) behind until they are ready to empty the net completely. Small numbers of small-sized bycatch species might become gilled in trapnet mesh until the traps are pulled, the fish is eaten by scavengers, or the fish decomposes.

The governmental scientific agency reported qualitative evaluations of bycatch in 2004-2010 and noted very low levels, primarily consisting of flatfish in sea and river nets and periodically jellyfish in sea nets. Cod, smelt, sculpin, sea birds or other birds were not observed in bycatch.

A quantitative bycatch sampling program was implemented in 2011 at the Vityaz-Avto processing plant (Blikshteyn 2011). The sampling protocol consisted of separating bycatch species by fishing site for daily fish deliveries from July 25 through August 17. Samples were identified and counted daily. This program found that very low bycatch numbers associated with this fishery (Table 8). By weight, these numbers comprise a negligible percentage of the total harvest consisting of tons of retained species. The numbers of any given species fall well below the MSC standards of 5% to 20% used to distinguish main or target species. All bycatch species except the larger flatfish are typically discarded during catch processing. Numbers in Blikshteyn (2011) should be regarded as minimum estimates. They are believed to represent the majority but not 100% of the bycatch.

Table 8. Bycatch reported for marine and river fishing site samples at Vityaz-Avto plant (Blikshteyn 2011).

	Fishing area		Totals	
Species	Marine	River	Number	%
Number of net days	38	13	51	
Starry flounder (*Platichthys stellatus*)	364	106	470	84.2%
Japanese sandfish (*Arctoscopus japonicas*)	69	14	83	14.9%
Sculpin (*Melletes papilio*)	2	0	2	0.4%

Species	Fishing area		Totals	
	Marine	River	Number	%
Rock sole *(Lepidopsetta bilineata)*	0	1	1	0.2%
Longhead dab (*Limanda proboscidea*)	0	2	2	0.4%
Fish/sample	11.4	9.5	10.9	

3.8.3 ETP Species

For the purposes of this assessment, endangered, threatened, or protected species are those that are recognized by national legislation and/or binding international agreements (e.g., CITES) to which jurisdictions controlling the fishery under assessment are party.

No protected fish species are reported to be intercepted by the Ozernaya sockeye fishery.

Only Steller sea lions, of all animals entered in the in the Kamchatka Red Book of Russia, are present in this area. This species inhabits the coast of western Kamchatka year-round, but its distribution and number changes seasonally. Approximately 2,500 sea lions gather in a rookery on Sivuchiy Cape during winter before dispersing generally northward during spring and summer. Small groups or individual sea lions are occasionally observed in the fishing area in summer. Sea lions sometimes enter the trap or fish well where they feed on fish. Large males sometimes damage nets to get at salmon. Only Steller Sea lions are formally protected in Russia being included in the Red List of species. Other seal species are available for commercial hunting, and moreover, allocated TAC is considerably underused because of degradation of hunting infrastructure.

Other seals are abundant in the area and frequently observed around the marine trapnets. The most numerous species in the Russian Far East is spotted seal or larga, but there is disagreement with its taxonomic status and, respectively, scientific name. A number of researchers consider that harbor seal (*Phoca vitulina*) in the Russian Far East is represented by subspecies called *Phoca vitulina largha*, but others consider them as a separate species *Phoca largha*. This species is found in local waters year-round. Large numbers gather in rookeries along the western coast of Kamchatka from February until mid-march. These seals concentrate near estuaries and capes to feed almost exclusively in salmon during salmon spawning runs. Between several hundred and several thousand seals are observed to concentrate in the Ozernaya vicinity during the sockeye run – numbers are greatest in large sockeye run years when pink salmon are not abundant. These seals constantly enter net traps, eat or damage fish, and then freely leave the nets.

Incidental take of these seals or sea lions by tangling in gear has not been observed due to the nature of the gear. Take of seals or sea lions is illegal as is the possession of firearms on boats. However, seals are regarded as a nuisance by fishers. KamchatNiro scientists report that fisherman drive off sea lions from nets by making noise. While shooting seals is illegal, it is reportedly an occasional practice. The available information indicates that this occurs at a low level, is not systematic, and fishermen generally comply.

Other marine animals present in the area include killer whales, white whales, sea eagles, and cormorants. There was no mention by government officials or fishing industry representatives of other sea mammals or sea birds captured or killed by the gears. The passive nature of the fixed trap net gear substantially reduces opportunities for encounters with marine mammals or birds. Beach seines do not normally encounter or affect marine mammals.

3.8.4 Habitat Conditions

Habitat conditions for salmon in the Ozernaya system are relatively unaffected by human activity. The entire upper basin including Kuril Lake is protected from development by designation as a federal reserve. Development in the basin is limited to two small towns adjacent to the estuary and a road that extends approximately 20 km up the valley to the Pauzhetka geothermal electric plant (Pachkevich 1996). A portion of the estuary and adjacent wetland has been dredged and filled to maintain a small seaport. Much of this activity is directly associated with the fishery. However, most of the estuary remains largely unaltered (Figure 14 and Figure 13).

Figure 13. Current view of the Ozernaya River mouth (from Bugaev et al. 2009).

Figure 14. Reconstruction of pre-development view of the Ozernaya River mouth (from Bugaev et al. 2009).

Fishing activities do not appear to have a significant long-term impact on habitat. Any effects of stationary trap construction or operation are localized and temporary. The traps are anchored to the sea bottom with boulders or sand bags and removed at the end of the fishing season. Net leads and wings are weighted to rest on the bottom but trap boxes constructed on steel frames are constructed on floats and do not contact the bottom where mechanical damage to benthic organisms might occur. KamchatNiro scientists report no harmful effect on bottom flora or fauna.

Some local habitat alternation occurs in portions of the river where beach seines are deployed. These areas are prepared during low flow conditions in late spring before the fishery by removing obstacles from the river bottom which might catch the seine and by clearing riparian vegetation at the seine site so that catches can be landed cleanly. Some fishing companies have been observed to utilize large tractors in the river bed to create a flat, clean, gently sloping river bottom conducive to seining. KamchatNiro scientists report that these disturbances can disturb bottom organisms which serve as food for juvenile salmon and other fish. Effects of disturbances are largely temporary, as seasonal flooding reconstructs the river bottom. Site preparations might also affect spawning habitat suitability for pink salmon which spawn primarily in the lower reaches of the river. Channel alternation prior to fry emergence and emigration in the spring can cause direct mortality. However, channel grading might also dislodge fine sediments and prevent channel armoring, thus improving habitat suitability for spawning and incubation of pink salmon returning to spawn after the fishing season.

3.8.5 Ecosystems

The salmon life cycle encompasses a vast ecosystem including natal rivers and lakes, the nearshore ocean, and the high seas of the North Pacific Ocean. Salmon migrate across large areas of the North Pacific Ocean which provides major feeding habitats for various salmon stocks originating from Asia and North America (Myers et al. 2009; Urawa et al. 2009). Juveniles gain over 90% of their biomass in the ocean before returning to freshwater to spawn (Groot and Margolis 1991). Ecosystem effects of salmon harvest and enhancement can be significant.

Marine-derived nutrients from salmon carcasses can have a significant impact on freshwater communities as well as those communities in the freshwater to terrestrial interface (Wilson et al. 1998). The flux of salmon biomass entering fresh water from the ocean can be massive (Gende et al. 2002). It is known that these nutrients form a base for the development of zooplankton in coastal areas, which serves as food for young salmon just after downstream migration. In the case of sockeye these nutrient may also play role in feeding of juveniles in the lake.

Removal of Pacific salmon by the fishery has consequences for river ecosystems. The relationships between salmon and the population dynamics of their terrestrial predators has been well documented (Gende et al. 2002). Possibly, the most serious of them is the decrease of food for predator animals and predator birds, which to a considerable extent consists of spawning salmon. The following animals depend on salmon in their diet: brown bear *Ursus arctos*, Kamchatka fox *Vulpes vulpes*, sable *Martes zibellina*, ermine *Mustela erminea kaneii*, mink *Mustela vison*, Steller's sea eagle *Haliaeetus pelagicus*, Pacific seagull *Larus schistisagus*, whooper swan *Cygnus cygnus* and many other mammals and birds. The density of these animals in the Kuril Lake area is very high, in particular, the density of brown bears here is the highest in the world. In Kuril Lake, annual abundance of fish

predators and scavengers has been correlated to sockeye run size. On the other hand, active fishery management might also help stabilize returns by avoiding excessively large escapements which can depress future returns under some conditions.[1]

It is clear that salmon influence the food webs in the North Pacific although the effect varies widely between systems and is dependent on many factors like timing, scale and alternative nutrient sources, etc. (Naydenko 2009; SCS 2011). In addition, like most large marine ecosystems, resolving interactions strengths among food web constituents is made difficult by limited data and confounding effects of environmental forcing (Essington 2009). Ecosystem models that have been developed for the Eastern Bering Sea, Aleutian Islands and the Gulf of Alaska (Gaichas and Francis 2008, Aydin et al. 2008) do not suggest a critical or unique role of salmon in respect to the structure of the food web in the ocean. Gaichas and Francis (2008) used network theory to identify potentially key species in the Gulf of Alaska food web on the basis of high connectivity and four species were identified as (Pacific cod, Pacific halibut, walleye pollock and arrowtooth flounder) as highly connected species.

Extensive research has been conducted by the Russian Scientific Institutes on (1) Juvenile Anadromous Stocks in Ocean Ecosystems; (2) Anadromous Stocks in the Bering Sea Ecosystem (BASIS); and (3) Anadromous Stocks in the Western Subarctic Gyre and Gulf of Alaska Ecosystems (Temnykh et al. 2010. This work also involved substantial monitoring and research of related ecosystem components including food web composition, production and dynamics.

Some researchers associate the increase in sockeye abundance between 1985-1999 with changing population dynamics of West-Kamchatka pink salmon (generation 1983 of the pink salmon in Western Kamchatka was very weak due to overspawning) (Bugaev 1995), and consequent increase of sockeye in 2000-2004 may be caused by the decline of Alaska pollock in the Bering Sea. This decline resulted in increase of food resource for feeding sockeye in the ocean, and, possibly, prevented extrusion of sockeye by Alaska Pollock which took place in a period of high abundance of pollock (Shevliakov, Dubynin 2004). Therefore increased abundance of Ozernaya river sockeye during the last decades is considered a result of better food conditions in the ocean due to the decline of competitive species such as pink salmon and Alaska Pollock.

Enhancement of Pacific salmon across the Pacific Rim since the 1970s has resulted in very large abundance in the North Pacific Ocean (Mahnken *et al*. 1998; Irvine et al. 2009; Ruggerone et al. 2010). There is some evidence that high salmon abundances in the ocean might adversely affect wild salmon through competition (Peterman 1991). Ocean growth of pink salmon inversely correlated to their own abundance and survival of chum, Chinook, and sockeye appears to be reduced in years of high pink salmon abundance (Ruggerone *et al*. 2003, Ruggerone and Goetz 2004, Ruggerone and Nielsen 2004, Ruggerone et al. 2005; Ruggerone *et al*. 2010). There is growing concern that the ocean carrying capacity of pink and chum salmon has been globally reached. However, the Ozernaya sockeye population has not been enhanced and sockeye as a whole contributes a much smaller portion of the high seas salmon biomass than other species such as pink and chum.

[1] *The significance of effects of large escapements remains a subject of considerable debate among fish scientists.*

3.9 Management System

3.9.1 Management Structure

Management of Kamchatka salmon fisheries is administered by Federal and Regional governmental agencies. Kamchatka Kray, which includes Kamchatka Oblast and Koryak Autonomous Okrug is the subject of the Russian Federation and is a part of Far Eastern Federal Region (Okrug). It is under the direction and control of the Government of the Russian Federation. Fisheries of Russia are managed and controlled by Federal Fishery Agency (FAR) of the Russian Federation, which located in Moscow and also represented by a local office in Kamchatka. Operational management of all activities is performed by the Governor of the Kamchatsky Kray.

Federal Fishery Agency

Federal Fishery Agency (FAR) (*Федеральное агентство по рыболовству or Federal'noe Agentstvo po Rybolovstvu*, http://fish.gov.ru) is an executive authority of the Russian Federation, established by the Presidential Decree No. 724 issued 05.12.2008, by converting the pre-existing Russian Federation State Committee for Fisheries (Rossrybolovstvo). The President issued the Decree No. 863 on 12.30.2008, which established that FAR reports directly to the Government of Russian Federation. RF Government Decree of 06.11.2008 No. 444 approved the current Regulations governing the FARs operations.

FAR interacts with various agencies at the federal level while controlling its territorial departments. It is responsible for oversight of departments under its jurisdiction, which define the rules and the annual Total Available Catches or expected catches (for those species which are not under TAC regulation, like Pacific salmon), as well as define the areas of fisheries. Also FAR conducts communication and coordination with foreign government agencies, international committees and international organizations on issues of fisheries, policy and technical programs related to the application of innovative technologies in the fisheries complex, and prepares federal-level and agency-level reports on the fishing industry.

The head of FAR supervises deputies and departments, which are responsible for the management of the fishing fleet, protection and rational use of resources, reproduction of marine resources and their habitats. FAR is also responsible for monitoring water resources and stocks of commercial species and control over the distribution of TAC/expected catch among the users. FAR also provides related to fisheries social services, conducts research and engineering, directs federal fishing vessel and fishing ports, and controls the activity of artificial breeding.

Northeastern Territorial Administration of FAR

FAR has territorial departments in all regions of the Russian Federation, which have been created in order to accelerate the implementation of many of the functions of the FAR on the level of Russian Federation subjects. *Northeastern Territorial Administration of FAR (SVTU) (Северо-восточное территоральное управление ФАР, СВТУ)* is the local management and enforcement arm of FAR for Kamchatka Kray, which is located in city of Petropavlovsk-Kamchatsky. SVTU has final approval of fishing concessions and in-season fishery management regulation actions (to open and close fisheries). They give fishing companies permission to harvest, monitor fishing companies and processors to ensure regulation compliance, and patrol streams to reduce poaching activities. SVTU posts all approved management decision of Anadromous Fish Commission on its website.

Federal Fishery Research Institutes

FAR includes a network of scientific research organizations conducting the research and development of both applied and fundamental nature in accordance with the program entitled "Scientific and engineering support of the Russia's fisheries industry." Federal Agency of Fisheries has 15 scientific-research organizations under its direct supervision – of which nine are marine scientific research institutes; they are assigned to appropriate regions on the legal basis and are responsible for the state level monitoring of stocks and additional resources and inclusion of the said resources in harvesting process and also responsible for rational and efficient usage of the bio-resources. The above-mentioned scientific research institutes have a legal status as federal state unitary enterprises. Their activities are regulated by the charters approved by FAR. All-Russia Institute for Fisheries Research and Oceanography VNIRO (Всероссийский научно-исследовательский институт Рыбололовства и Океанографии, ВНИРО) of Moscow is a head institute in the field of fishery related research.

Research for the Pacific aquatic biological resources is conducted by the following scientific regional research institutes: TINRO-Center (Vladivostok) (Тихоокеанский научно-исследовательский институт Рыбололовства и Океанографии, ТИНРО-Центр) with branches in Khabarovsk and Anadyr; MagadanNIRO (Magadan), KamchatNIRO (Petropavlovsk-Kamchatsky) and SakhNIRO (Yuzhno-Sakhalinsk). Studying of aquatic biological resources of the Arctic, northern Atlantic Ocean, Baltic Sea and Atlantic Ocean and that of Black, Azov and Caspian seas and studying of aquatic biological resources of internal freshwater bodies is performed by other territorial institutions. KamchatNIRO conducts research of marine and freshwater resources in the Kamchatka region to monitor the status of commercial species, including salmon, and preparing annual forecasts of commercial species and the proposal on the volume of their potential catch. Each October KamchatNIRO issues forecast for expected catch of salmon for the next season. The forecast is developed based on the amount of salmon required for optimal filling the spawning grounds (i.e. optimal spawning escapement), the number of juveniles from natural spawning grounds (based on sampling of juveniles in the sea and their survivorship there), and the release of juveniles from hatcheries (taking into account their survivorship in the sea).

Annual forecasts by KamchatNIRO of potential catch are sent to TINRO-Centre where they are approved in the special Salmon Scientific Council and then sent to VNIRO, which examines and approves the forecast on the Scientific Council. Following the adoption of the forecast VNIRO sends it to the FAR for approval. Approval forecast is the basis for the organization of fishing in the region.

Northeastern Rybvod (SevvostRybvod)

SevvostRybvod (Севвострыбвод) is directly managed by the Federal Fisheries Agency. SevvostRybvod does not occupy as important a role in management of salmon fisheries in Kamchatka as, for instance, the analogous structure, SakhRybvod, in Sakhalin. This is because artificial reproduction in Kamchatka is not of such significant as in Sakhalin-Kuril region. SVTU controls hatchery permitting and management in the Kamchatka Kray. Sevvostrybvod operates five hatcheries in Kamchatka including two in the Western coast of the Peninsular (Bolshaia river basin).

Federal Ministry of Natural Resources of the Russian Federation encompassing the Federal Service for Supervision in the Sphere of Ecology & Natural Resources Use (Rosprirodnadzor)

Rosprirodnadzor (Росприроднадзор) is the Federal agency responsible for enforcement and control. It is also responsible for State supervision of usage and protection of water bodies, wildlife and their habitats, federal level wildlife preserves, and environmental protection status.

Federal Agency for Veterinary and Phytosanitary Supervision (Rosselkhoznadzor)

Rosselkhoznadzor (Россельхознадзор) is the Federal enforcement and control agency for biological resources under the Russian Ministry of Agriculture. Responsibilities include accounting for and analysis of violations of technical regulations and other regulatory documentation, supervision of compliance with Russian Federation laws by the state agencies, local government, and the public, supervision of marine fishery ports and vessels, and administration of the Convention on the International Trade in Endangered Species of Wild Fauna and Flora.

In total, activities of any enterprise operating on rivers are controlled by 14 different State commissions, but their role is not as significant as those described above.

Public Council for FAR

FAR Policies and Regulation of fisheries are created by a consultative process. In 2008, FAR created the Public Council (PC), which facilitates public discussions of accepted and proposed regulations. The PC is composed of wide range of fishermen associations, environmental institutions, environmental services, the World Wildlife Fund and other interested community organizations. In the consultative process the PC is joined by government agencies and territorial Association of Fishermen, fisheries departments and offices of subjects of Russian Federation. The government policies are finally adopted and implemented following the process of consideration of the proposed policies and discussions between the PC and the interested parties.

Far East Scientific Commercial Fisheries Council (FESFC)

Far East Scientific Commercial Fisheries Council, FESFC (Дальневосточный Рыбопромысловый Совет) is an independent council made up of representative of the Federal Fisheries Agency, scientific research institutes, non-profit commercial associations of commercial fisheries, minority peoples of the North and Russian Far East, and the union of the pool of professional fishers. The personnel composition of the FESFC is approved by order of FAR based on the recommendations of the Russian Federation territorial subject. However, half of its members must be either from scientific or similar fish conservation or natural resources agencies. The council has the authority to engage other competent authorities, interested parties (or stakeholders) as needed, upon approval of a vote of its members. Meetings are held in Vladivostok at least twice a year. The FESFC meetings can be attended by any interested party, where they may express their opinions and participate in the discussions. Central to the responsibilities of the FESFC is the compilation of scientific information concerning the management of marine bio-resources in the Russian Far East for submission to the Federal Fisheries Agency for final approval. In addition, it reviews and submits its recommendations on fisheries regulations, construction of fish hatcheries and the recommendations for the distribution of quota among its subjects.

Regional Governance

The current management system is regulated according to the federal law "On Fishery and Conservation of Aquatic Biological Resources" which was amended in 2008 to reflect changes regarding fishery of anadromous fish in inland waters of Russian Federation and territorial seas of Russian Federation (Article 291 of the Federal Law of December 20 2004 № 166-FZ). This law gave the government the authority to assign fishery sections to individual lease holders for up to 20 years, and salmon fisheries management was entrusted to the regional executive authorities. This regulation replaced the previous system, which was based on Total Allowable Catch allocations and centralized fishery management decisions through Moscow, with a much more responsive and effective regional system. The current system is widely viewed as an improvement for fisheries management as it can react more quickly to changes in run strength. In addition, fishing companies no longer have an incentive to under-report their catch because management is based on achieving spawning escapement rather than by quota limitations of a TAC.

Ministry of Fisheries of Kamchatka Kray

Under the new management system, the regional government has the responsibility for in-season management of fisheries (although SVTU has final approval). The Kamchatka Ministry of Fisheries is responsible for establishing and operating of the Commission on the Regulation of Harvesting (catch) of Anadromous Fishes, AFC and providing information on the fishery (such as catch and escapement data collected by KamchatNIRO.

Commission on the Regulation of Harvesting Anadromous Fishes

The AFC (Комиссия по регулированию вылова (добычи) анадромных видов рыб) has the responsibility for the distribution of expected yearly catch of salmon among users and identifying areas of commercial fishery, recreational fishing, and traditional fishery of the indigenous population. The AFC was established by regional authorities in 2008 to implement management changes identified in new federal regulation. The AFC is chaired by the regional governor and consists of government, industry and interested stakeholders. These include representatives from Federal executive bodies, including the federal security and environment protection authorities, as well as representatives of the regional government, federal, public associations, consolidations of legal entities (associations and unions), and scientific organizations. The list of members of AFCs is suggested by the Governor and approved by the Territorial Administration of FAR (SVTU). Upon the request of companies, the AFC distributes the annual quotas among the users. The total amount of the quotas is authorized by FAR and accounts for the number of salmon required for filling in the spawning areas and broodstock hatcheries, as well as quotas for sport fishing and harvest by the indigenous population. The AFC meets regularly and makes in season fishery management decisions. Based on the reports about filling of the spawning grounds, the AFC makes operational decisions on the time and duration of fishing by either closing fishing in spawning grounds in case of insufficient filling or by increasing the quotas in order to harvest excessive spawners from the mouths of rivers to avoid overflow of spawning grounds. The AFCs' decisions are made through discussions and consultations with stakeholders. All meetings are open to the public. All decisions of AFCs on fisheries management are subject to final approval by Territorial Administrations of FAR. Meeting minutes and decisions are posted on the Territorial Administration website (http://www.terkamfish.ru).

3.9.2 Preseason Management

Forecasting the run of salmon the coasts of Kamchatka is based on multi-year statistics of commercial catches, data on filling of spawning grounds, survival of eggs in the spawning mounds, the total number of downstream migration of wild juveniles and number of juveniles released from hatcheries. The KamchatNIRO continuously monitors escapement and downstream migration of juveniles in several control rivers in Kamchatka. Ozernaya is one of these rivers. In 1932, the Pacific Institute for Fisheries and Oceanography was organized in Kurilskoye Lake and fishery-oriented research on the lake began. In 1940 the institute organized a research station on the Kurilskoye Lake, and quantitative time series data on sockeye of Ozernaya River were collected since that time.

Geographically, the management is based on fisheries zones and subzones (Figure 15). Further on, subzones are subdivided into management unites. In 2011, the Kamchatka-Kuril fishery subzone included three management units. The most southern unit, which includes all the fishing parcels belonging to fisheries under certification, included, besides Ozernaya River, also Opala, Golygina, Koshegochek, Iavinskaya Rivers and adjacent coastal areas. In total, this management unit includes 65 fishing parcels for commercial fisheries, 20 of which are situated in rivers. All the sea fishing parcels are allocated for commercial fishing. In addition, one sea fishing parcel in the area is allocated for indigenous fishing, but it is not included in the management unit under discussion. Among 20 river fishing parcels 3 are situated in Opala River, 3 in Golygina River, 2 in Koshegoschek River, 2 in Iavinskaya River, and 10 in Ozernaya River. In addition to commercial fishing, in Opala River, there are 3 parcels for sport and recreational fishing. In Ozernaya River there are only parcels for commercial fishing. Among 45 coastal fishing parcels in the management unit, Vityaz-Avto and Delta own 13, and among 10 parcels in Ozernaya River, each company owns one parcel.

KamchatNIRO sends the annual forecast to the TINRO-Center; the latter summarizes the forecasts from all regional NIROs (Research Institutes for Fishery and Oceanography). Forecasts are discussed on the Far East Salmon Council (FESC), which was created within the TINRO-center with the goal of coordinating the research and forecasting of salmon in the Far Eastern basin. FESC decides on the final value of the forecast of predicted catch and sends the forecast to VNIRO. There the forecast passes through the expert review and gets adopted by the Scientific Council, after which VNIRO sends it to FAR for approval. On the basis of this forecast FAR approves the expected annual catch for each fishery subzone (Figure 16). The pre-season forecast is used primarily for planning purposes and possibly to establish quotas for some non-commercial fisheries.

The forecast shows satisfactory accuracy, average difference between forecasted and actual catches is equal 14 % for period 1993-2009 (Figure 17)

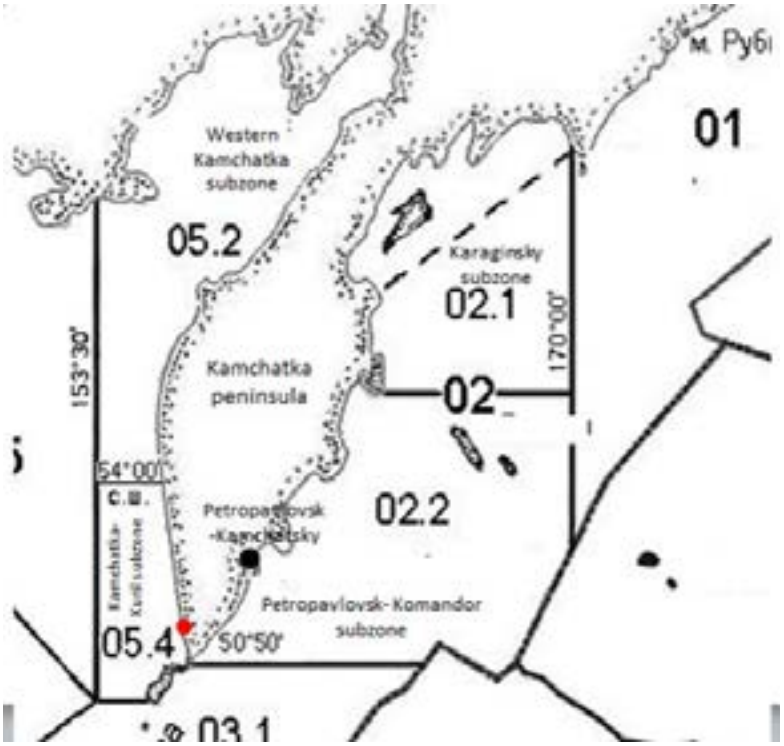

Figure 15. Kamchatka peninsula fisheries subzones, and mouth of Ozernaya River (red point).

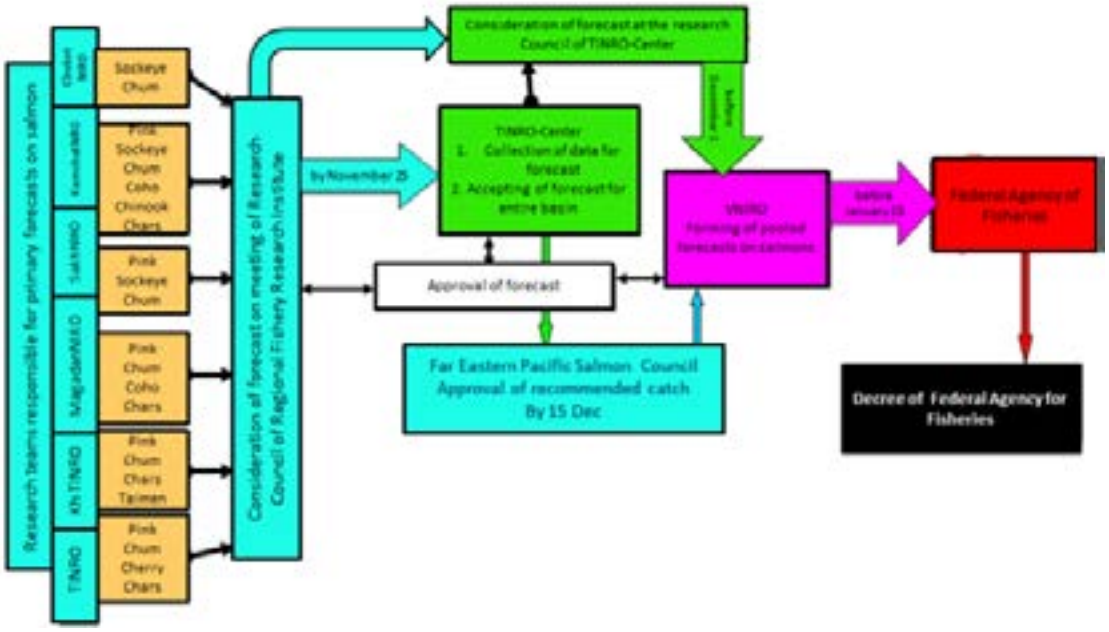

Figure 16. A procedure of issuing of the Pacific salmon expected catch (according to Rassadnikov 2006, with changes).

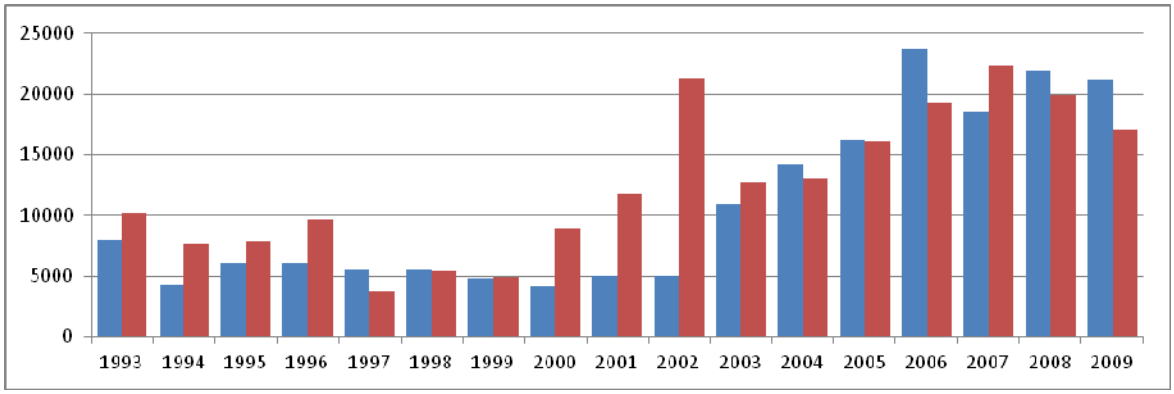

Figure 17. Forecasted (blue) and actual (red) catch of sockeye salmon in the Western coast of Kamchatka, which includes Western Kamchatka subzone and Kamchatka-Kuril subzone (data from Rassadnikov 2006). Catches of Western Kamchatka sockeye mostly (93%) consist of Ozernaya sockeye (Shevliakov et al 2011).

Data on forecasts for Ozernaya River sockeye are available for period 2004-2010. Only in 2007 forecast exceeded acceptable accuracy (±30%) during this period (Table 9). The 2007 return was a historically maximum and exceeded the record of 1990 (10.9 million fish) by more than 30% and can be considered unpredictable.

Table 9. Forecasted and actual number of sockeye of the Ozernaya River in 2004–2010.

Year	Total number of mature sockeye, thousands of fish			Number of fish approaching the coastal area, thousands of fish			Commercial catch, mt		
	Forecast	Actual	Accuracy of forecast, %	Forecast	Actual	Accuracy of forecast, %	Forecast	Actual	Accuracy of forecast, %
2004	7863	6806	86.6	6863	6016	87.7	13408	12502	93.2
2005	8794	8726	99.2	7794	7520	96.5	15735	15109	96.0
2006	10905	10111	92.7	9405	9088	96.6	19763	17995	91.1
2007	10098	14667	145.3	7098	13073	184.2	17745	21071	118.7
2008	11328	9229	84.5	8328	7633	91.7	20820	18507	88.9
2009	11045	7862	71.2	9545	7697	80.6	20113	15591	77.5
2010	9697	9719	100.2	7697	7899	102.6	15493	17103	110.4

During fishing season, approved expected catch value of annual expected catch may be adjusted by AFC based on real-time data on the number of the sockeye salmon approaching the fishing areas and spawning grounds. In order to assist in this adjustment, KamchatNIRO monitors the dynamics of catches and biological indicators of sockeye in the main areas of operation, in the migration routes and the reproduction of the species. The monitoring results are used for developing operational guidelines on sockeye salmon fishing.

Additionally, TINRO-center conducts annual counting of salmon fingerlings in the open seas using total trawling method and counting of feeding salmon in the winter areas on the high seas and in the ways of anadromous migrations. The results of these studies are used also for operational adjustments of the expected catch of sockeye.

Prior to 2008, Salmon fisheries were carried out based on TACs, which was offered by the regional NIRO. Proposals of the regional NIROs were approved by Scientific Council of VNIRO and were examined by the inter-agency Commission of Rosprirodnadzor. After the examination, the TACs were being approved by the order of Rosrybolovstvo and sent to the Government of Russian Federation. The RF Government was affirming the orders of Rosrybolovstvo of TAC by its Decrees, at which moment the TACs became effective. Then Rosrybolovstvo distributed the TACs to the subjects of the Russian Federation. The TACs represented the basis for conducting fishing in all subjects of the RF. In each subject of RF, the regional Departments of fisheries, in conjunction with Territorial Administrations of Rosrybolovstvo, Territorial Administrations of Rybvod, NIRO and representatives of the Fishermen Associations were distributing the TACs among the users of resources. The proposed distribution of TACs was sent to Rosrybolovstvo for approval. The quotas for each company were being determined based on historical data (the average yield for the previous 3 years). In case the return of salmon was observed to be higher than the approved TACs values, the process of increasing the quotas and TACs for individual fishing companies was the same as the original approval and required a long time. The resulting increase of the quotas and TACs were often carried out after the end of the harvest season, which resulted in spawning areas being overwhelmed by spawners and the catch was under-reported by the fishing companies. In 2008, the TAC system for the salmon fishery was canceled.

3.9.3 In-season process

At the beginning of the year the fishing companies submits salmon catch applications to SVTU. Each company purchases a permit based on the number of salmon they want to catch (fee for sockeye from the sea is 20000 rubles per mt, and for sockeye from the river is 5000 rubles per mt of fish caught (Federal Law from 29.11.2007 N 285-FZ “On introducing changes in the Chapter 25.1. of the part 2 of taxes code”).

Each coastal set net or river beach seine is served by a crew of fishermen. The crew leaders report directly to the company’s Directors. Each crew keeps fishing log according to the template specified by the FAR. This log records:

- coordinates of seine;
- daily catch (in metric tons);
- species composition and by-catch;

Each company submits information on the catch volumes and species composition to SVTU daily which is then summarized for reporting to the AFC.

The AFC opens and closes fishery times and areas based on harvest and escapement relative to expectations and objectives (Figure 18). In recent years, sufficient spawning escapement in Kurilskoye Lake was achieved by set up of pass-days. Taking into account that Ozernaya sockeye perform their migrations from wintering areas, at first progressing northwards some distance from the shore and then turn southwards very close to the shore, KamchatNIRO sets up pass-days on sea and river fishing parcels accordingly to speed (which is known) and patterns of the coastal spawning migration of sockeye. This system of pass-days creates kind of moving window for fish to safely approach the spawning grounds (Shevliakov et al., 2011). It is known that pass-days are used in the river fishing parcels regularly. Moreover, if spawning escapement is not sufficient, additional off days are set up in the river, and, if needed, in the sea. Usually, all these operations are done by decisions of AFC based on recommendations of KamchatNIRO. Occasionally, to save time, decisions

about additional pass-days are accepted by local Association of fisheries by recommendations of KamchatNIRO based on real-time information.

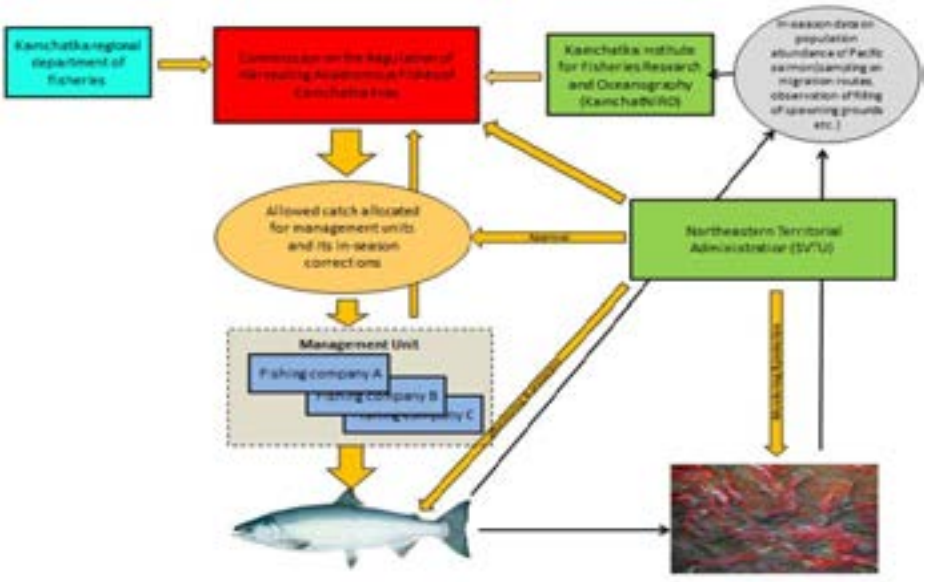

Figure 18. In-season management of Pacific salmon fishery.

3.9.4 Enforcement

SVTU controls the compliance with the law and rules of fishing. SVTU contains in total 10 departments and among them the department of state control, supervision and protection of aquatic resources and habitats with enforcement functions. SVTU includes 12 departments situated in administrative districts in different parts of Kamchatka. The department consists of 7 fish protection inspector squads, which are located in every administrative region of Kamchatka Oblast. Ozernaya River is in the territory of Ust-Bolsheretsk district department. The level of protection depends on season. In the fishing season, in addition to usual 6 inspectors, the groups up to 15 inspectors are created.

3.9.5 Protected, Endangered, or Threatened Species

The Ministry of Natural Resources is responsible for managing sensitive species. Oversight is provided by various commissions which also collect scientific data. Guidance is provided in the form of recommendations. (Listing Authority: Ministry of Nature of Russia, Commission for Rare and Endangered Animals, Plants, and Fungi).

3.9.6 Environmental Protection

Protection of the salmon habitat is achieved through observance of the current laws of the Russian Federation. Any type of utilization either of natural resources directly or that impacts them indirectly, including fisheries, water and timber utilization, construction, etc., must be evaluated as to the extent of impact on the environment. The evaluation itself is performed by an expert commission having state ecological expertise, and the main federal agency responsible for conducting the state ecological expert review is the Ministry for Natural Resources of the Russian Federation. In addition, activity related to natural utilization that has already been permitted is regulated to the extent to which it impacts the environment by a series of standards documents at the federal, departmental and local levels.

For the protection of fish habitat within the area of its competence, responsibility is borne by the Federal Natural Utilization Oversight Service (Rosprirodnadzor), the Federal Ecological, Technological and Atomic Oversight Service (Rostekhnadzor), the Agency of Fisheries of Russian Federation, and local governments of the territorial subjects of the Russian Federation. The Natural Protection Prosecutor's Office of the Russian Federation is responsible for enforcing laws relating to natural utilization.

Building/construction projects are regulated by a governmental agency (Rospotrebnadzor Sanitation Service) which requires completion of an environmental Impact Study (EIS) prior to approval of a project permit. Projects are monitored and can be delayed by the service if the builder does not fulfill the requirements. Assessments address discharges, disposal, drainage, soil pollution, the burial of wastes in the environment, accidents and catastrophes. The EIS includes a project description, descriptions of the environments subject to impact, and a characterization of the extent of the impact (based on a worst case maximum), including a determination of the subsequent value of the losses, the form of compensation both in kind and in monetary terms, and development of the engineering for loss compensation. Also included are descriptions of the extent to which the conditions for land use and the requirements issued by the respective government agencies of supervision and control have been followed, a study of the risks associated with possible accidents, as well as the adequacy of the anticipated material resources and financial reserves to localize and eliminate the effects of accidents, and a study of the fullness and effectiveness of the anticipated measures for protecting the health of the population living in the surroundings of the environmental area. Decisions adopted must conform to the laws and standards of the Russian Federation and the Kamchatsky Kray.

The main indicator of success with respect to actions aimed at protecting fish (salmon) habitat is the record size of the harvests of Pacific salmon in the Kamchatka peninsula in a whole and Ozernaya River in particularly. It should be noted, however, that other factors such as sea conditions also impact to stock abundance and therefore catches.

3.9.7 Research plan

Until mid-1990's the studies of salmon in the Far East Russian Federation were performed according to the complex target program "Salmon," which was controlled by the former Committee on Fisheries of Russian Federation (Federal Agency for Fishery). This program was designed for every 5 years starting with mid-1980s. Studies in second half of 1990s were performed according to 5-year programs, which took into account the basin and partly the ecosystem approaches. In 2005, the TINRO-center with the participation of regional NIROs, have developed "The concept of the Far East basin program for the complex study of Pacific Salmon for period 2006-2010", which was approved by Rosrybolovstvo (which is now FAR). In accordance with this concept TINRO-center has developed the "Far East basin program for complex study of Pacific Salmon for period 2007-2012".

According to the political course of FAR on the centralization of fisheries research in 2009, VNIRO has developed the departmental comprehensive target research program for fisheries of Russian Federation for 2010-2014 named "Scientific support and monitoring of conservation of reproduction and rational using of resources of fisheries base". Within that program the "Far East basin program of complex study of Pacific Salmon for period 2010-2014" was adopted in which the succession of approach and research directions was preserved. In accordance with this program, the TINRO-center develops its annual program of complex research of Pacific Salmon; and regional institutes, including KamchatNIRO,

develop their own annual research salmon programs. All annual programs are approved by FAR.

Regional NIROs carry out studies of salmon in the river and early marine life periods, which includes the study of biology, population structure, escapement monitoring, survival of eggs, downstream migration of fry, feeding of juveniles in estuarine period and the collection of statistics of salmon catch. TINRO-center directs and carries out research of marine life period of salmon, including the study of the state of ocean and marine biota in the feeding areas and migration routes of salmon, and total trawl counts of juvenile of salmon during catadromous migration and abundance of salmon in the period of anadromous migration.

At the end of the year, the results of these programs are discussed in the Far East Salmon Council at TINRO-center and published in the annual edition of The Bulletin of the Implementation of the "Concept of the Far East basin program for the complex study of Pacific Salmon". A total of 5 bulletins for the period 2006-2010 have been published. Funding for all the programs is provided by FAR from the federal budget.

Fishing companies in Ozernaya River regularly help to workers of KamchatNIRO in terms of providing them infrastructure facilities (transportation, laboratory space etc.).

3.9.8 International Management

Russia is party to the Convention for the Conservation of Anadromous Fish Stocks in the North Pacific Ocean, and a member of the North Pacific Anadromous Fish Commission (NPAFC). The Commission promotes the conservation of anadromous fish in the Convention area, which includes the waters of the North Pacific Ocean and its adjacent seas north of 33 degrees latitude and beyond the 200 mile zones of the coastal states. The Commission requires member states to:

- Prohibit directed fishing for anadromous fish in the Convention Area.
- Minimize to the maximum extent of the incidental taking of anadromous fish
- Prohibit the retention on board a fishing vessel of anadromous fish taken as an incidental catch during fishing for non-anadromous fish.

The Convention authorizes research fishing for anadromous fish on the high seas if consistent with the NPAFC science program. The parties conduct joint research programs including exchange of information. The parties have an obligation to enforce the provisions of the Convention.

4 EVALUATION PROCEDURE

4.1 Assessment Criteria – Performance Indicators & Scoring Guideposts

This is a summary of revisions to the MSC Fishery Assessment Methodology's (FAM) Default Assessment Tree for use in the full assessment of the Ozernaya sockeye fishery. The same revisions were was also used in the full Assessment of the Northeast Sakhalin Island and Aniva Bay trap net pink salmon fishery.

Revisions to the MSC Fishery Assessment Methodology's (FAM) Default Assessment Tree were based primarily on the Default Assessment tree prepared by Scientific Certification Systems (SCS) for the Annette Island Reserve (AIR) salmon fishery assessment. Small clarifying changes in the AIR tree were made by MRAG for application to Sakhalin and Kamchatka salmon fishery assessments based on public comments received in the Sakhalin assessment process.

Previous salmon fishery assessments in Alaska, Canada, and Russia were based on a common set of performance indicators and guideposts developed for application to salmon of MSC principles and criteria for sustainable fishing. The MSC has subsequently released a revised FAM to provide a standardized framework for fishery assessment. SCS used review and discussions among the MSC Technical Advisory Board (TAB) and salmon certification teams to clarify the application of the revised FAM to salmon and to reconcile the new guidance with previous assessment methodologies. In particular, the unique aspects of salmon fishery assessments required more specific treatment of enhancement by hatcheries and definition of target stocks. Most of these changes were not particularly pertinent to the Ozernaya sockeye assessment where no enhancement occurs and the fishery is focused almost entirely on the target stock in terminal fishery area.

The MRAG team concurs with the modification prepared by SCS Assessment Team for existing performance indicators of the Default Assessment Tree as contained in the MSC Fisheries Assessment Methodology v.21. This Assessment tree was slightly modified by the MRAG Assessment Team to clarify specific interpretations to some indicators and guidepost Including the basis for concluding that enhancement activities do not have significant negative impacts on the wild stock (which requires that hatchery origin spawner occur in a small proportion of the natural spawning populations/locations and that they represent a small fraction of the total natural spawning escapement).

4.2 Evaluation Techniques

4.2.1 Traditional assessment

Principles and Criteria

The *MSC's Principles and Criteria for Sustainable Fishing*, produced through an international consultation process, describe statements against which a fishery may be compared to enable its operators to make a claim that the fish sold on to retailers, processors and consumers comes from ***a well-managed and sustainable source.*** The certification methodology adopted by the MSC involves the application and interpretation of the Principles and Criteria to the specific fishery undergoing assessment. This is considered necessary, as the precise assessment of a fishery will vary with the nature of the species, capture method used, etc. The Principles and Criteria are presented below:

Principle 1. A fishery must be conducted in a manner that does not lead to over- fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Intent. The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Criterion 1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.

Criterion 2. Where the exploited populations are depleted, the fisheries will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.

Criterion 3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

Principle 2. Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Intent. The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

Criterion 1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.

Criterion 2. The fishery is conducted in a manner that does not threaten biological diversity (at the genetic, species or population levels) and avoids or minimises mortality of, or injuries to, endangered, threatened or protected species.

Criterion 3. Where exploited populations of non-target species are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

Principle 3. The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Intent. The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

Criterion 1. The management system has a clearly defined scope capable of achieving sustainable fisheries in accordance with MSC Principles 1 and 2 and their associated criteria, and includes short and long-term objectives, including those for mitigating ecological impacts of fishing.

Criterion 2. The management system recognizes applicable legislative and institutional responsibilities and coordinates implementation on a regular, integral and explicit basis.

Criterion 3. The management system includes a rational and effective process for acquisition, analysis and incorporation of new scientific, social, cultural, economic and institutional information.

Criterion 4. A comprehensive research program is conducted.

Criterion 5. The management system ensures that there is a high degree of compliance in the fisheries with management measures and directives regarding fishing practices required by the system.

Criterion 6. The performance of the management system is regularly and candidly evaluated in a systematic fashion and the system responds positively to appropriate recommendations for change.

Generic Assessment Tree

The FAM V2 contains a generic assessment tree for use on all future MSC assessments. Each of the MSC's Principles and Criteria for Sustainable Fishing has been integrated into the new structure. Some rearranging of concepts has occurred and some criteria are now considered as issues of scope rather than under specific PIs (i.e. destructive fishing practices and controversial unilateral exemptions from international agreements).

A complete illustration of the new structure is provided in the FAM V2 (Figure 2 on page 11). Among other things, the new tree has eliminated much of the duplication and overlap that previously occurred between Principle 3 and Principles 1 and 2. This has been achieved by addressing the MSC Principles in a more holistic way rather than developing separate performance indicators under each Criterion. For example, many of the operational components formerly under Principle 3 (bycatch and discards, habitat impacts), are now addressed solely under Principle 2.

The new assessment tree organizes the performance indicators into components that focus upon the outcomes of the fisheries management process and the management strategies implemented that aim to achieve those outcomes. Therefore the new Assessment Tree structure is divided into three levels for the purposes of scoring:

- Level 1 – is the **MSC Principle** as described in the MSC's Principles and Criteria for Sustainable Fishing (also referred to as the MSC standard).
- Level 2 – is the **Component**, which is a high level sub-division of the Principle.
- Level 3 – is the **Performance Indicator** which is a further sub-division of the Principle and the point at which scoring of the fishery occurs.

Table 10 lists the components and performance indicators under each Principle in the generic assessment tree.

The following definitions apply with respect to the Components under Principle 2:

a) Retained species: Species that are retained by the fishery under assessment (usually because they are commercially valuable or because they are required to be retained by management rules).

b) Bycatch species: Organisms that have been taken incidentally and are not retained (usually because they have no commercial value).

c) ETP species: Endangered, threatened or protected species are those that are recognised by national legislation and/or binding international agreements (e.g. CITES) to which the jurisdictions controlling the fishery under assessment are party.

d) Habitats: The habitats within which the fishery operates.

e) Ecosystem: Broader ecosystem elements such as trophic structure and function, community composition, and biodiversity.

As with previous assessment trees, the generic assessment tree contains scoring guideposts that describe the main thresholds in the scoring system for each performance indicator:

- 100 – defines the upper boundary of the scoring and represents the level of performance on an individual performance indicator that would be expected in a theoretically 'perfect' fishery.
- 80 – defines the unconditional pass mark for a performance indicator for that type of fishery. Weighted scores for Criteria under each MSC Principle must average to 80 or higher.
- 60 – defines the minimum, conditional pass mark at the Criterion level for that type of fishery. Any score below 60 represents a performance level that is unsatisfactory.

Table 10 MSC Components and Performance Indicators under each Principle

	Component	Performance Indicator
Principle 1.	Outcomes: The current status of the target stock resource	1.1.1 Stock status
		1.1.2 Reference Points
		1.1.3 Stock recovery and rebuilding
	Harvest Strategy (Management): A precautionary and effective harvest strategy	1.2.1 Performance of harvest strategy
		1.2.2 Harvest control rules and tools
		1.2.3 Information / monitoring
		1.2.4 Assessment of stock status
Principle 2.	Retained species	2.1.1 Outcome Status
		2.1.2 Management strategy
		2.1.3 Information / monitoring
	Bycatch species	2.2.1 Outcome Status
		2.2.2 Management strategy
		2.2.3 Information / monitoring
	ETP species	2.3.1 Outcome Status
		2.3.2 Management strategy
		2.3.3 Information / monitoring
	Habitats	2.4.1 Outcome Status
		2.4.2 Management strategy
		2.4.3 Information / monitoring
	Ecosystem	2.5.1 Outcome Status
		2.5.2 Management strategy
		2.5.3 Information / monitoring
Principle 3	Governance and policy	3.1.1 Legal and/or customary framework
		3.2.1 Consultation, roles and responsibilities
		3.1.3 Long term objectives
		3.1.4 Incentives for sustainable fishing
	Fishery-specific management system	3.2.1 Fishery- specific objectives
		3.2.2 Decision-making processes
		3.2.3 Compliance and enforcement
		3.2.4 Research plan
		3.2.5 Monitoring and management performance evaluation

For each Performance Indicator, the fishery's characteristics are compared with the requirements of the pre-specified attributes for each of three Scoring Guideposts (60, 80, 100) to establish a score on a scale of 0-100 points. Scoring occurs in increments of 5 points. A performance score of 60 is intended to reflect 'a pass with condition', a score of 80 represents 'pass without condition', while a 100 score reflects 'perfect performance.' For a fishery to be certified it must accomplish three things:

- Achieve a score of 60 or greater for every performance indicator
- Each MSC Principle must achieve a weighted average score of at least 80, or pass without conditions.
- A contractual commitment to performance improvement for each indicator that has a score less than 80.

5 ASSESSMENT RESULTS

5.1 Determination

5.1.1 Scoring summary tables

Prin-ciple	Wt (L1)	Component	Wt (L2)	PI No.	Performance Indicator (PI)	Wt (L3)	Weight in			Score	Contribution to Principle Score	
						Either		Or			Either	Or
One	1	Outcome	0.33	1.1.1	Stock status	0.5	0.167	0.333	0.1111	90	15.00	
				1.1.2	Reference points	0.5	0.167	0.333	0.1111	70	11.67	
				1.1.3	Stock rebuilding			0.333	0.1111	na		
		Management	0.33	1.2.1	Harvest strategy	0.25	0.083			95	7.92	
				1.2.2	Harvest control rules & tools	0.25	0.083			90	7.50	
				1.2.3	Information & monitoring	0.25	0.083			75	6.25	
				1.2.4	Assessment of stock status	0.25	0.083			95	7.92	
		Enhancement	0.33	1.3.1	Enhancement outcome	0.333	0.111			100	11.10	
				1.3.2	Enhancement management	0.333	0.111			100	11.10	
				1.3.3	Enhancement information	0.333	0.111			100	11.10	
Two	1	Retained species	0.2	2.1.1	Outcome	0.333	0.067			80	5.33	
				2.1.2	Management	0.333	0.067			80	5.33	
				2.1.3	Information	0.333	0.067			70	4.67	
		Bycatch species	0.2	2.2.1	Outcome	0.333	0.067			100	6.67	
				2.2.2	Management	0.333	0.067			95	6.33	
				2.2.3	Information	0.333	0.067			80	5.33	
		ETP species	0.2	2.3.1	Outcome	0.333	0.067			75	5.00	
				2.3.2	Management	0.333	0.067			80	5.33	
				2.3.3	Information	0.333	0.067			70	4.67	
		Habitats	0.2	2.4.1	Outcome	0.333	0.067			90	6.00	
				2.4.2	Management	0.333	0.067			80	5.33	
				2.4.3	Information	0.333	0.067			75	5.00	
		Ecosystem	0.2	2.5.1	Outcome	0.333	0.067			100	6.67	
				2.5.2	Management	0.333	0.067			95	6.33	
				2.5.3	Information	0.333	0.067			90	6.00	
Three	1	Governance and policy	0.5	3.1.1	Legal & customary framework	0.25	0.125			90	11.25	
				3.1.2	Consultation, roles &	0.25	0.125			85	10.63	
				3.1.3	Long term objectives	0.25	0.125			80	10.00	
				3.1.4	Incentives for sustainable fishing	0.25	0.125			80	10.00	
		Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.2	0.100			80	8.00	
				3.2.2	Decision making processes	0.2	0.100			100	10.00	
				3.2.3	Compliance & enforcement	0.2	0.100			75	7.50	
				3.2.4	Research plan	0.2	0.100			70	7.00	
				3.2.5	Management performance	0.2	0.100			60	6.00	

Overall weighted Principle-level scores		Either	Or
Principle 1 - Target species	Stock rebuilding PI not scored	89.6	
	Stock rebuilding PI scored		
Principle 2 - Ecosystem		84.0	
Principle 3 - Management		80.4	

5.1.2 Principle I – Target Stocks

The Ozernaya sockeye salmon fishery meets all 60 scoring guideposts as well as exceeding a minimum weighed score of 80 for principle I. Two indicators were scored between 60 and 80 which necessitated identification of conditions for continuing certification.

Indicator	Criteria @ 60				Criteria @ 80					Criteria @ 100						Score
	1	2	3	4	1	2	3	4	5	1	2	3	4	5	6	
1.1.1 Stock Status - Outcome	1				1	1				0	1					90
1.1.2 Reference Points - Outcome	1	1			1	1	0	na	0							70
1.1.3 Stock Rebuilding - Outcome	na	na			na	na				na						
1.2.1 Harvest Strategy - Mgmt	1	1	1		1	1				1	0	1				95
1.2.2 Harvest Control Rules & Tools - Mgmt	1	1			1	1	1			na	0	1				90
1.2.3 Information & Monitoring - Mgmt	1	1	1		1	1	0	1								75
1.2.4 Assessment of Stock Status - Mgmt	1	1	1	1	1	1	1	1	1	1	na	1	0	1	1	95
1.3.1 Enhancement Outcomes	1	1			1	1				1	1				1	100
1.3.2 Enhancement Management	1				1					1						100
1.3.3 Enhancement Information	1	1			1	1				1	1					100
															Net	89.6

1.1.1 Stock Status		
SG 60	**SG 80**	**SG 100**
It is likely that the wild stock is above the point where recruitment would be impaired or fishery impacts are so small as to have no significant effect on the stock status.	It is highly likely that the wild stock is above the point where recruitment would be impaired or fishery impacts are so small as to have no significant effect on the stock status. The wild stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the wild stock is above the point where recruitment would be impaired or fishery impacts are so small as to have no significant effect on the stock status. There is a high degree of certainty that the wild stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.

Score: 90

Justification: Data on annual escapement and stock productivity demonstrate a high likelihood that the wild stock is above the point where recruitment would be impaired by fishing. Current stock-recruitment data (Figure 9) demonstrate that escapements of 1 million sockeye or greater consistently produce high levels of recruitment. The fishery is managed for escapement goals of 1 to 2.3 million specifically in order to avoid recruitment overfishing due to low escapements and density-related reductions in freshwater productivity due to exceeding spawning or rearing habitat capacities. These goals are consistently met or exceeded.

While current escapement goals clearly avoid low escapement levels with the potential to substantially reduce future returns or worse to damage long term stock productivity, it is unclear whether escapement levels maximize average annual production because of limited contrast in the data set upon which the production function is based. No data are available under current conditions for escapements greater than 3 million. While stock-recruitment functions fit to current data suggest that recruitment will decline at greater escapements, curve fits beyond the range of available data must be regarded with low confidence. Hence,

it cannot be concluded with a high degree of certainty that recruitment might be slightly reduced on average from maximum levels at escapements around the low bound of current goals (1 million). Management for minimum escapements (1 million) also poses some risk of even lower escapements under rare combinations of conditions such as an earlier-than-normal run timing coupled with below-average marine survival. This concern is heighted by a consistent pattern of escapements in the lower range of escapement goals in recent years.

There is a high degree of certainty that the wild stock has been fluctuating around its target reference point. Target reference points are clearly defined as escapement goals based on weir counts. Escapements consistently meet or exceed goals. Annual escapement is estimated with a high degree of certainty with the counting weir. This method of stock assessment is extremely effective in the Ozernaya system because of the mediating effect of the large lake on streamflow in the Ozernaya River. The lake dampens the effect of daily and seasonal flow patterns which can limit the effectiveness of weirs for counting fish. The clear waters of the system also make visual counting methods effective. Use of the same location and counting methods at the weir over a long period of time also provides a consistent basis for escapement estimation.

1.1.2 Reference Points		
Limit and target reference points or operational equivalents are appropriate for the wild production components of the stock.		
SG 60	**SG 80**	**SG 100**
Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category. Where the wild stock is a management unit comprised of more than one subcomponent, it is likely that the target and limit reference points are consistent with maintaining the inherent diversity and reproductive capacity of each stock subcomponent.	Reference points are appropriate for the wild stock and can be estimated. The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. The target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome. For low trophic level species, the target reference point takes into account the ecological role of the stock. Where the wild stock is a management unit comprised of more than one subcomponent, it is highly likely that the target and limit reference points are consistent with maintaining the inherent diversity and reproductive	Reference points are appropriate for the wild stock and can be estimated. The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant precautionary issues. The target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty. Where the wild stock is a management unit comprised of more than one subcomponent, there is a high degree of certainty that the target and limit reference points are consistent with maintaining the inherent diversity and reproductive capacity of each

	capacity of each stock subcomponent.	stock subcomponent.

Score: 70

Justification: Reference points are appropriate for the wild stock and can be estimated. Target reference points are defined in terms of escapement goals as measured by fish counts in a weir downstream from the primary spawning grounds in Kuril Lake and its tributaries. Goals are derived from stock-recruitment analysis of recent historical data. Goals are represented as a range that will avoid recruitment overfishing due to low escapements and density-related reductions in freshwater productivity due to exceeding spawning or rearing habitat capacities. Stock-recruitment analyses are the standard approach and have proven very effective for estimating target reference points for salmon in single stock terminal fisheries like the Ozernaya. The entire escapement consists of wild fish – no hatcheries are operated in or near the Ozernaya system. Escapements can be estimated with high confidence based on weir counts – this assures that there is relatively little measurement error in derivation of the production function or assessments of whether goals are being met.

In this fishery, target reference points based on escapement goals serve as effective operational equivalents of limit reference points. Limit reference points, defined as a point below which all fishing stops, are not specifically established for this fishery but rarely are for salmon except in the case of depleted stocks in mixed stock fisheries. A true limit reference point for salmon, below which reproductive capacity is at risk of impairment, would occur at escapements substantially less than target goal ranges established to produce maximum sustained yield. In the Ozernaya fishery, fishing has been effectively curtailed to meet target goal ranges. Hence, there has been no need to define specific lower thresholds. Similar interpretations of this indicator have been previously applied in other assessments of other salmon fisheries in Alaska and Russia.

The target reference point, defined as an escapement goal range, is specifically designed to produce maximum sustained yield based on the spawner stock-recruitment function. The stock-recruitment analyses uses historical data on run size and age composition to reconstruct brood tables showing the total number of adult progeny produced by a given spawning escapement. MSY escapement levels are identified based on statistical fits of standard nonlinear functions to the available data. The shape of the stock-recruitment, and corresponding estimates of escapements that produce MSY, are related to the biological characteristics of the stock, productivity and capacity of the available spawning and rearing habitat, and survival rates related to conditions during migration and marine portions of the life cycle. Habitat and marine conditions vary from year to year but also vary in broad patterns extending over a decade or more. Therefore, production functions and escapement goals are periodically reviewed and revised as new data becomes available. This has been the case for Ozernaya sockeye and current goals reflect conditions prevalent for 1995-2005 brood years. Current goals appear to be generally consistent with MSY escapement levels under current conditions based on the available data. However, it is not clear whether current goals are adequate for maintaining maximum yields under reduced ocean productivity cycles that will inevitably occur at some point in the future. It is also not apparent that current targets and the process for revising targets represent a precautionary approach:

1. There is some indication that current goals may be slightly lower than actual MSY because of lack of contrast in the available data – escapements over 3 million are not

represented and might produce sustained high yields greater than those inferred from production curve fits through the available data. Estimates of higher MSY escapement goals under historical conditions of lower ocean productivity may also be indicative of the same issue. Production curves and MSY escapements of salmon typically shift to higher escapement levels under more productive ocean conditions. However, the Ozernaya curves were reported to shift to lower escapement levels. This pattern may reflect changes in illegal harvest levels on the spawning grounds over time if actual spawner numbers were historically much lower than weir estimates. However, a complete evaluation of the relative effects of estimation bias and environmental effects on productivity in freshwater and the ocean has not been provided.

2. Recognition and revision of escapement targets based on spawner-recruit data inevitably occurs years after the change has occurred because returns from a spawning cohort are not complete until six years later and multiple data points are needed to distinguish annual variation from a long term trend. The risk of recruitment overfishing can be significant in the interim until goals are revised.

3. Costly investments and expansion of processing capacity and development of lucrative markets for Ozernaya sockeye provide a high incentive for conservation and management for maximum long term sustainability but also implicitly provide a strong impetus to fish particularly in the face of unclear or uncertain information.

4. The Ozernaya sockeye stock is being heavily exploited under current high levels of productivity. Exploitation rates on Ozernaya sockeye are often 80% or higher which are at or exceed sustainable rates currently identified for any Alaska sockeye stock. High exploitation rates under current conditions have resulted in a pattern of recent escapements which have generally fallen in the lower end of the target goal range.

5. Decreases in marine survival accompanying a shift to less-productive marine conditions could easily result in an extended period of recruitment overfishing relative to MSY if the shift is not recognized at the time it occurs, particularly at current high exploitation rates.

The target reference point does not consider maintenance of the stock at a level consistent with the equivalent of BMSY in the event of a downturn in marine survival conditions, and therefore does not reach an 80 score.

Salmon are not a low trophic level species so the guidepost related to ecological role is not applicable.

It is likely that current reference points and practices are consistent with maintaining the inherent diversity and reproductive capacity of each stock subcomponent of Ozernaya sockeye. Extensive research and monitoring has demonstrated that this stock is extremely diverse, consisting a variety of subcomponents returning at different times and spawning in different areas and conditions. Early and late stock components are recognized by the management system and there may even be finer distinctions within those, particularly in the late component which comprises the majority of the run (e.g. lake vs. river spawners). Escapement goals have been established for the aggregate run and it is not practical to establish and monitor separate goals for different subcomponents given overlap and annual variability in run timing. However, the importance of protecting all run components is recognized by the management system and current practices are designed to avoid

overfishing any specific run component. Guidelines are established and followed for the proportion of the escapements that should be achieved at different points in the run. Progress toward meeting daily and annual targets is monitored and regulated in season based on daily harvest and escapement information. The leading and ending portions of the run are not subject to fishing which also ensures conservation of fish at the ends of the spectrum of diversity. Intensive management to avoid overescapement also protects some early run components from being overspawned by later run components. Passing days are established periodically throughout the run to provide escapement windows for various run components.

At the same time, current exploitation rates on this stock are very high and daily harvest patterns in recent years (Figure 10) provide evidence that current reference points may not be adequate to protect all run subcomponents in every circumstance. In many years, some portions of the run have been much more heavily exploited than others. In earlier years, the later portion of the run was typically exploited at a higher level after sufficient numbers had escaped to assure that aggregate escapement goals would be met. In more recent years the early and middle portions of the run were more heavily exploited. There has been some indication that changes in exploitation patterns are the result of the lack of passing days for sea nets. Regardless of the reason for these uneven harvest patterns, while it is likely that current reference points are consistent with protecting stock subcomponents, a high likelihood or protection cannot be established.

The target and limit reference points are not demonstrated to be highly likely to maintain the inherent diversity and reproductive capacity of early and late stock subcomponents, and therefore do not reach an 80 score.

1.1.3 Stock Rebuilding		
Where the wild stock or wild stock components are depleted, there is evidence of stock rebuilding.		
SG 60	**SG 80**	**SG 100**
Where stocks are depleted rebuilding strategies which have a reasonable expectation of success are in place. The rebuilding strategy should prohibit targeting depleted stocks. Monitoring is in place to determine whether they are effective in rebuilding the stock within a specified timeframe.	Where stocks are depleted rebuilding strategies are in place. There is evidence that they are rebuilding stocks, or it is highly likely based on simulation modeling or previous performance that they will be able to rebuild the stock within a specified timeframe.	Where stocks are depleted, strategies are demonstrated to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the shortest practicable timeframe.

Score: NA

Justification: This indicator is not applicable. No component of the Ozernaya sockeye stock is currently depleted. In fact numbers are at near-record highs. Further, a strong stock rebound from a historical period of low escapements, associated with high interception rates in marine drift net fisheries and below-average ocean productivity in the 1960s and 1970s, has demonstrated the continuing resilience of this stock.

1.2.1 Harvest Strategy		
There is a robust and precautionary harvest strategy in place.		
SG 60	**SG 80**	**SG 100**
The harvest strategy is expected to achieve wild stock management objectives reflected in the target and limit reference points. The harvest strategy is likely to work based on prior experience or plausible argument. Monitoring is in place that is expected to determine whether the harvest strategy is working.	The harvest strategy is responsive to the state of the wild stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points. The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives.	The harvest strategy is responsive to the state of the wild stock and is designed to achieve stock management objectives reflected in the target and limit reference points. The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels. The harvest strategy is periodically reviewed and improved as necessary.

Score: 95

Justification: There is a robust and precautionary harvest strategy in place involving intensive in-season monitoring of daily harvest, biological indicators of run timing, spawning escapement and real time fishery management. The harvest strategy is responsive to the state of the wild stock and is designed to achieve stock management objectives reflected in wild escapement goals. Annual run size of salmon is often highly variable due to normal variation in environmental conditions which affect reproduction and survival. As a consequence, annual run size is notoriously difficult to forecast which can result in recruitment overfishing or unnecessarily foregone harvest. The harvest strategy for this fishery involves daily assessments of run strength, timing and escapement during the fishing season and closure periods (pass days) for in-river fisheries to ensure that escapement goals are met.

A consistent pattern of reaching escapement objectives under current conditions of high marine productivity provides evidence that the strategy is achieving objectives. However, the current strategy has not been fully evaluated under a comprehensive suite of conditions including an extended period of reduced marine survival. High productivity and large runs under favorable ocean regimes can compensate for management systems limitations which can create challenges under less favorable ocean productivity regimes. Large numbers also feed high expectations of the fishers. Current high exploitation rates, reductions in escapement goals relative to historical levels, escapements tending toward the lower end of the range, expansions of processing capacity, and variable exploitation of different run components may all be regarded as symptoms of a narrow safety factor in the management of this fishery.

The harvest strategy is periodically reviewed and improved as necessary. These include increased local control and authority, increased funding of enforcement and decreased economic incentives for illegal harvest associated with an improving regional economy.

1.2.2 Harvest Control Rules & Tools		
There are well defined and effective harvest control rules in place.		
SG 60	**SG 80**	**SG 100**
Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached. There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. The selection of the harvest control rules takes into account the main uncertainties. Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. The design of the harvest control rules take into account a wide range of uncertainties. Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.

Score: 90

Justification: Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. These include licensing for exclusive use of fishing areas, limitations on numbers and spacing of trap nets in marine waters, and fishery closure days in the river based on real time escapement monitoring data in conjunction with other indicators of run strength and timing based on harvest and biological composition of the harvest. Catch per effort, fish size, and sex ratio are all utilized as indicators. The fishery is managed on a daily basis to regulate harvest consistent with escapement targets. The largely terminal nature of this fishery provides a high degree of control of exploitation in response to actual rather than forecast run strength.

The selection of the harvest control rules takes into account the main uncertainties. These are primarily related to run strength and timing. While run forecasts are made based on brood year escapements and recent production patterns, recommended harvest levels based on these forecasts are utilized primarily as preseason planning tools. Once the fishing season begins, management to control exploitation rates is based on in-season data. Data is referenced to seasonal patterns in previous years to distinguish run timing and strength. Forecasts are typically uncertain and run timing may also vary from year to year. In-season management utilizes indicators based on biological characteristics of the harvest to avoid this potential problem.

While harvest control rules take into account the main uncertainties, it remains unclear whether they encompass the wide range of concern for the sustainability of this fishery.

Current harvest control rules result in inconsistent or uneven patterns of exploitation of different portions of the run due in part to the lack of specific escapement objectives for stock subcomponents. The long term effects of differential harvest patterns on stock diversity and productivity is unknown and does not appear to have been considered. It is also unclear whether current control rules adequately address an increasing trend in catch in the marine trap nets where no pass days occur, trends and variability in interception of Ozernaya sockeye in marine trap nets north of the Ozernaya area, or trends and variability in the high seas drift net fishery.

Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules. Consistent achievement of escapement goals indicates that harvest control rules are generally effective in achieving sustainable exploitation rates defined by the current stock-recruitment data.

1.2.3 Information and Monitoring		
Relevant information is collected to support the harvest strategy.		
SG 60	**SG 80**	**SG 100**
Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy. Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule. Some relevant information is available on the significance of fishery harvests on various stock components.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy. Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule. There is good information on all other fishery removals from the stock. Information is sufficient to estimate the significance of fishery harvests on stock components.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly relevant to the current harvest strategy, is available. All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty. A comprehensive range of information is available to estimate the significance of fishery harvests on stock components.

Score: 75

Justification: Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy. Due to their fishery significance and the long term operation of a research station at Kuril Lake, Ozernaya sockeye are among the most intensively monitored and studied salmon stocks in the world.

Annual harvest of this stock is estimated in the offshore drift net fishery in the Pacific Ocean and Sea of Okhotsk, marine trap net fishery on the west coast of Kamchatka, and the freshwater fishery in the Ozernaya River. Biological data (age, sex, size) is collected from samples of the catch. Spawning escapement is estimated based on weir counts which provide a very high level of accuracy. Biological data is also collected from the escapement. Run timing and spawner distribution are assessed annually. Escapement and run size information is used to derive stock-recruitment production functions which provide of sound basis for establishing escapement targets and exploitation rates consistent with maximum sustained yield. Extensive information is collected on the juvenile life history, abundance, population dynamics, and environmental conditions in Lake Kuril which provides a very strong basis for understanding factors limiting and regulating productivity. Extensive data is also collected on the fishery sector. The available information has been very thoroughly documented in the scientific literature (Bugaev et al. 2009; Bugaev 2011).

Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule. Harvest, data, and biological data are collected daily and have been collected in a standardized manner for many years. This long time series of data provide a very robust basis for evaluation of status and limiting factors of this stock, as well as appropriate fishing strategies.

There is good information on commercial fishery removals of this stock in freshwater fisheries in the Ozernaya River and the marine trapnet fishery in the Ozernaya area. Estimates of the removals of Ozernaya sockeye are also available in other significant commercial fisheries occurring in marine trapnet fisheries north of the Ozernaya area and in the offshore drift net fishery operating in the Russian EEZ. However, the quality of the harvest data in northern trapnet fisheries and the offshore drift net fishery is difficult to assess. The offshore drift net fishery in particular reportedly has an uncertain history with respect to the accuracy of the harvest reporting. In addition, illegal harvest of Ozernaya sockeye in freshwater has not been estimated for the current or historical period. All accounts suggest that illegal harvest has been reduced to low levels within the last 5 years but illegal harvests was clearly much greater throughout the historical period and the level of this harvest has substantial implications for interpretation of historical data on status and productivity and application to the fishery strategy.

Because of questions of accuracy in harvest estimates of Ozernaya sockeye in the offshore drift net fishery and uncertainty of implications of current and historical estimates of marine drift net and freshwater illegal harvest on harvest, this does not reach a score of 80.

Information is sufficient to estimate the significance of fishery harvests on stock components. However, information is not sufficient to estimate the significance of fishery harvests on each stock component primarily because of overlapping run timing. While early and late run subcomponents are recognized and their relative timing and distribution are known, additional structuring within the dominant late run is also likely but has not been well described. Information is not available regarding genetic substock structure or the significance of this substock structure to population productivity and dynamics.

1.2.4 Assessment of Stock Status
There is an adequate assessment of the stock status.

SG 60	SG 80	SG 100
The majority of stocks are defined with a clear rationale for conservation, fishery management and stock assessment requirements. Where indicator stocks are used as the primary source of information for making management decisions on larger groups of stocks in a region, there is some scientific basis for the indicator stocks. The assessment estimates stock status relative to reference points. The major sources of uncertainty are identified.	The stocks are well-defined and include details on the major component stocks with a clear rationale for conservation, fishery management and stock assessment requirements. Where indicator stocks are used as the primary source of information for making management decisions on larger groups of stocks in a region, there is evidence of coherence between the status of the indicator stocks and the status of the other stocks they represent within the management unit to the extent that a high likelihood exists of tracking stock status for lower productivity stocks (i.e., those at higher conservation risk). The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points. The assessment takes uncertainty into account. The stock assessment is subject to peer review.	There is an unambiguous description of the each stock, including its geographic location, run timing, and component stocks with a clear rationale for conservation, fishery management and stock assessment requirements. Where indicator stocks are used as the primary source of information for making management decisions on larger groups of stocks in a region, the status of the indicator stocks is well correlated with the full range of stocks, not just correlated with the most productive stocks in the management unit. The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery. The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way. The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. The assessment has been internally and externally peer reviewed.

Score: 95

Justification: There is no ambiguity in the description of this stock. Its geographic location, run timing, and component stocks are thoroughly described and documented. This is a terminal fishery on a single stock of sockeye originating entirely the Ozernaya River. Clear rationales for conservation, fishery management and stock assessment requirements are very thoroughly described and documented (Bugaev et al. 2009; Bugaev 2011).

Guideposts related to indicator stocks are not applicable. The entire Ozernaya sockeye stock is assessed. Indicator stocks are not utilized.

The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery. Status is evaluated based on weir counts which provide very accurate estimates of abundance on the majority of the spawning grounds. Reference points are defined based on escapement goals demonstrated to be appropriate for this stock. Harvest is controlled in-season based on real-time data on spawning escapement as well as numbers and characteristics of fish entering the fishery.

The assessment takes into uncertainty into account uncertainty but does not evaluate stock status relative to reference points in a probabilistic way. Uncertainty in estimates of various biological parameters is regularly represented with statistical confidence intervals or qualified descriptively. However, probabilistic risk analyses of stock status and fishery effects have not been extensively employed to evaluate population risks of measurement error, normal variation in productivity, or long term productivity trends or changes.

The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. Assessments have been subjected to extensive internal and external peer review through the governmental scientific agency and by extensive publication in the technical scientific literature.

1.3.1 Enhancement Outcomes		
Enhancement activities do not negatively impact wild stocks or substitute for a stock rebuilding strategy.		
SG 60	**SG 80**	**SG 100**
It is likely that the enhancement activities do not have significant negative impacts on the local adaptation, reproductive performance and productivity of wild stocks based on reasonable estimates of likely proportions of hatchery-origin fish in the natural spawning escapement. It is likely that hatchery-origin spawners occur in a small proportion of the natural spawning populations/locations and that they represent a small fraction of the total natural spawning	It is highly likely that the enhancement activities do not have significant negative impacts on the local adaptation, reproductive performance and productivity of wild stocks, based on appropriate levels of marking and monitoring to reliably estimate proportions of hatchery-origin fish in the natural spawning escapement. It is highly likely that hatchery-origin spawners occur in a small proportion of the	There is a high degree of certainty that the enhancement activities do not have significant negative impacts on the local adaptation, reproductive performance and productivity of wild stocks, based on appropriate levels of marking and monitoring to reliably estimate proportions of hatchery origin fish in the natural spawning escapement. There are no salmon enhancement programs

1.3.1 Enhancement Outcomes		
Enhancement activities do not negatively impact wild stocks or substitute for a stock rebuilding strategy.		
SG 60	**SG 80**	**SG 100**
escapement. Enhancement activities are not routinely used as a stock rebuilding strategy but may be temporarily in place as a conservation measure to preserve or restore wild diversity threatened by human or natural impacts.	natural spawning populations/locations and that they represent a small proportion of the total natural spawning escapement for individual spawning populations. Enhancement activities are not used as a stock rebuilding strategy.	within expected straying distances of the natural spawning areas, which periodic monitoring has verified. Enhancement activities are not used as a stock rebuilding strategy.

Score: 100

Justification: This indicator achieved a score of 100 because Ozernaya sockeye are entirely wild and unaffected by hatchery enhancement. This provides a high degree of certainty that the enhancement activities do not have significant negative impacts on the local adaptation, reproductive performance and productivity of wild stocks. There are no salmon enhancement programs within expected straying distances. A limited amount of hatchery sockeye production occurs in the Bolshaia River approximately 135 km north of the Ozernaya River but the significance of straying by these fish is negligible because of the distance, strong sockeye homing ability, north to south migration patterns along the west Kamchatka coast, and relatively low numbers in comparison with the Ozernaya wild stock. Enhancement activities have never been used for stock rebuilding in the Ozernaya system.

The assessment team chose to score enhancement indicators for Ozernaya sockeye even though no hatchery enhancement of this stock occurs to recognize that the decision to avoid enhancement constitutes the best possible management practice for protecting this wild stock. This approach also ensures that each indicator under Principle I is consistently weighted between this assessment of the Ozernaya fishery and assessments of other heavily-enhanced salmon fisheries in Russia and Alaska.

1.3.2 Enhancement Management		
Effective enhancement and fishery strategies are in place to address effects of enhancement activities on wild stock status.		
SG 60	**SG 80**	**SG 100**
Practices and protocols are in place and considered likely to protect wild stocks from significant detrimental impacts of enhancement, based on plausible argument.	There is a strategy in place and confidence that the strategy will protect wild stocks from significant detrimental impacts of enhancement, based on evidence that the strategy is effectively achieving the outcome metrics used to define these minimum impacts (e.g., related to verifying and achieving acceptable proportions of hatchery-origin fish in the natural	There is a comprehensive strategy in place and clear evidence for successful protection of wild stocks from significant detrimental impacts of enhancement.

1.3.2 Enhancement Management		
Effective enhancement and fishery strategies are in place to address effects of enhancement activities on wild stock status.		
SG 60	**SG 80**	**SG 100**
	spawning escapement).	

Score: 100

Justification: This indicator achieved a score of 100 because Ozernaya sockeye are entirely wild and unaffected by hatchery enhancement. Avoiding enhancement entirely is ultimately to most comprehensive and effective strategy that might be conceived for protecting wild stocks from significant detrimental impacts of enhancement.

The assessment team chose to score enhancement indicators for Ozernaya sockeye even though no hatchery enhancement of this stock occurs to recognize that the decision to avoid enhancement constitutes the best possible management practice for protecting this wild stock. This approach also ensures that each indicator under Principle I is consistently weighted between this assessment of the Ozernaya fishery and assessments of other heavily-enhanced salmon fisheries in Russia and Alaska.

1.3.3 Enhancement Information		
Relevant information is collected and assessments are adequate to determine the effect of enhancement activities on wild stock status.		
SG 60	**SG 80**	**SG 100**
Some relevant information is available on the contribution of enhanced fish to the harvest and escapement of the wild stock. The effect of enhancement activities on wild stock status, productivity and diversity are taken into account.	Sufficient relevant information is available on the contribution of enhanced fish to the harvest and escapement of the wild stock. The assessment includes estimates of the impacts of enhancement activities on wild stock status, productivity and diversity.	A comprehensive range of relevant information is available on the contribution of enhanced fish to the harvest and escapement of the wild stock. The assessment is appropriate and takes into account the major features relevant to the biology of the species and the effects of any enhancement activities on the wild stock status, productivity and diversity.

Score: 100

Justification: This indicator achieved a score of 100 because Ozernaya sockeye are entirely wild and unaffected by hatchery enhancement. Information on hatchery enhancement of sockeye in the Kamchatka region is comprehensive and appropriate to this assessment. The assessment team chose to score enhancement indicators for Ozernaya sockeye even though no hatchery enhancement of this stock occurs to recognize that the decision to avoid enhancement constitutes the best possible management practice for protecting this wild stock. This approach also ensures that each indicator under Principle I is consistently weighted between this assessment of the Ozernaya fishery and assessments of other heavily-enhanced salmon fisheries in Russia and Alaska.

5.1.3 Principle II – Ecosystem

This fishery meets all 60 scoring guideposts and exceeds a minimum weighed score of 80 for Principle II. Four indicators were scored between 60 and 80, which necessitated identification of conditions for continuing certification.

	Criteria @ 60				Criteria @ 80					Criteria @ 100						
Indicator	1	2	3	4	1	2	3	4	5	1	2	3	4	5	6	Score
2.1.1 Retained Species - Outcome	1	1			1					0	0					80
2.1.2 Retained Species - Management	1	1			1	1	1			0	0	0	0			80
2.1.3 Retained Species - Information	1	1	1		1	0	1	0								70
2.2.1 Bycatch Species - Outcome	1	1			1					1						100
2.2.2 Bycatch Species - Management	1	1			1	1	1			1	1	1	0			95
2.2.3 Bycatch Species - Information	1	1	1		1	1	1	1		0	0	0	0			80
2.3.1 ETP Species - Outcome	1	1			1	1	0									75
2.3.2 ETP Species - Management	1	1			1	1	1			0	0	0				80
2.3.3 ETP Species - Information	1	1	1		1	0										70
2.4.1 Habitats - Outcome	1	1			1	1				0	1					90
2.4.2 Habitat - Management	1	1			1	1	1									80
2.4.3 Habitats - Information	1	1			1	1	0									75
2.5.1 Ecosystem - Outcome	1	1			1	1				1	1					100
2.5.2 Ecosystem - Management	1	1			1	1	1			0	1	1	1			95
2.5.3 Ecosystem - Information	1	1			1	1	1	1	1	1	1	0	0	1		90
															Net	84.0

2.1.1 Retained Species – Outcome		
The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species.		
SG 60	**SG 80**	**SG 100**
Main retained species are likely to be within biologically based limits or if outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species. If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.	Main retained species are highly likely to be within biologically based limits, or if outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	There is a high degree of certainty that retained species are within biologically based limits. Target reference points are defined and retained species are at or fluctuating around their target reference points.

Score: 80

Justification: For the purposes of this assessment, main species may generally be considered to include those where to harvest rates in the fishery sufficient to exert a significant or measurable influence on status. According to MSC guidance "main" in this context is intended to allow consideration of the catch size and vulnerability of the species caught. A species that comprises less than 5% of the total catch by weight may normally be considered a minor species unless it is particular vulnerable or if the total catch of the fishery is large in which case even 5% may be a considerable catch. A species that normally comprises 20% or more of the catch by weight would almost always be considered a main

bycatch species. Assessment teams are directed to use their expert judgment to determine and justify which species are considered main and which are not.

Other retained species in the commercial sockeye salmon fishery primarily include pink salmon, chum salmon, coho salmon, and char. No species is categorized as a "main" species for the purposes of this assessment. No species exceeds 20% of the total harvest on average. Only pink salmon approach 5% of the harvest volume on average. Harvest volumes and percentages vary depending substantially depending on annual abundance but large harvests occur only during years of high pink salmon abundance when numbers are likely to be adequate to seed available spawning habitat. Pink salmon are typically very productive and fishery exploitation rates are lower than those of sockeye because significant numbers of pink salmon occur outside the sockeye fishery timeframe. Large numbers of pink salmon also return to other rivers throughout the region in those same years. Hence, this species is not considered to be particularly affected or vulnerable to incidental harvest in the sockeye fishery. All other retained species in aggregate typically constitute less than 2% of the fishery harvest by weight.

The fishery is highly unlikely to pose a risk of serious or irreversible harm to the retained species and or hinder recovery of depleted retained species. It is unclear whether biologically-based limits or target reference points are established or monitored for other retained species in the Ozernaya River. However, chum salmon, coho salmon, pink salmon and char are widely distributed and common in rivers throughout western Kamchatka. Thus this fishery satisfies outcome guideposts at the 80 scoring level but not the 100 scoring level.

2.1.2 Retained Species – Management		
There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.		
SG 60	**SG 80**	**SG 100**
There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding. The measures are considered likely to work, based on plausible argument (eg, general experience, theory or comparison with similar fisheries/species).	There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding. There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved. There is some evidence that the partial strategy is being implemented successfully.	There is a strategy in place for managing retained species. The strategy is mainly based on information directly about the fishery and/or species involved, and testing supports high confidence that the strategy will work. There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its overall objective.

Score: 80

Justification: There is a partial strategy in place that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding. This strategy involves concentration of the sockeye target fishery in times and areas of abundance and fishery closures in other times and areas when other salmon stocks are abundant. Because coho and chum salmon predominately return after the sockeye run, timely closure of the sockeye fishery affords substantial protection to these stocks. Limited fishing in the largely inaccessible middle and upper reaches of the river, and no fishing in the lake affords a high degree of protection to char which are distributed throughout the system. Pink salmon run timing overlaps substantially with sockeye but pink salmon are also widely distributed and common in other rivers throughout western Kamchatka which substantially ameliorates any effect of the Ozernaya fishery on Ozernaya populations of this species.

Information on the relative harvests of sockeye and other retained species and the widespread distribution of other retained species throughout western Kamchatka provides an objective basis for confidence that the partial strategy will work. Long term harvest trends which are variable but stable provide some evidence that the partial strategy is being implemented successfully.

2.1.3 Retained Species – Information		
Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.		
SG 60	**SG 80**	**SG 100**
Qualitative information is available on the amount of main retained species taken by the fishery. Information is adequate to qualitatively assess outcome status with respect to biologically based limits. Information is adequate to support measures to manage main retained species.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery. Information is sufficient to estimate outcome status with respect to biologically based limits. Information is adequate to support a partial strategy to manage main retained species. Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations. Information is sufficient to quantitatively estimate outcome status with a high degree of certainty. Information is adequate to support a comprehensive strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective. Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.

Score: 70

Justification: Quantitative information is available on the amount of retained species taken by the fishery. All catch is delivered to the processing plant where it is enumerated. This information indicates that there are no main retained species.

It is unclear whether information is sufficient to estimate outcome status with respect to biologically based limits. Biologically-based limits have not been established for salmon or char which comprise the majority of the other species retained in the Ozernaya sockeye fishery.

The fishery strategy for management of retained species is to concentrate fishing effort in times and areas of sockeye abundance in order to avoid substantial harvest of other species.

Data are not sufficient to detect any increase in risk level due to operation of the fishery or the effectiveness of the strategy. While the available data suggests a high likelihood that fishery impacts are not significant when local Ozernaya populations of pink salmon and char are considered in the context of the regional distribution and abundance of these species, risk levels of the fishery for local populations of these species are not specifically assessed.

Information on retained species, including pink salmon and char, is insufficient to estimate status of significant with respect to biologically-based limits and to detect any increase in risk level due to the operation of the fishery; therefore the fishery does not reach a score of 80.

2.2.1 Bycatch Species – Outcome		
The fishery and its enhancement activities do not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups.		
SG 60	**SG 80**	**SG 100**
Main bycatch species are likely to be within biologically based limits, or if outside such limits there are mitigation measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding. If the status is poorly known there are measures or practices in place that are expected result in the fishery not causing the bycatch species to be biologically based limits or hindering recovery.	Main bycatch species are highly likely to be within biologically based limits or if outside such limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	There is a high degree of certainty that bycatch species are within biologically based limits.

Score: 100

Justification: Fishing methods, locations, and periods are very highly selective for Ozernaya sockeye with relative minor retention of other salmon and char species. A bycatch monitoring project conducted by Blikshteyn (2011) found that bycatch comprises a very small proportion of the total catch in the Ozernaya sockeye fishery. Common bycatch species are primarily limited to flatfish, sculpins, and Japanese sandfish. No species comprises anywhere near 5% of the total catch. None are valuable or vulnerable. Thus all bycatch species are considered to be minor species. No species is categorized as a main bycatch species for the purposes of this assessment.

The extremely low rate of bycatch documented in this fishery provides a high degree of certainty that the fishery does not significantly affect bycatch species. Species-specific biologically-based limits have not been established for bycatch species in this fishery because exploitation rates in the salmon fishery are deemed to be so low as to constitute no

significant impact on the status of these lightly or unexploited species. Bycatch species have no commercial value and are widespread in the region. Thus this fishery satisfies outcome guideposts at the 100 scoring level.

2.2.2 Bycatch species – Management		
There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations.		
SG 60	**SG 80**	**SG 100**
There are measures in place, if necessary, which are expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery. The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is a partial strategy in place, if necessary, for managing bycatch that is expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery. There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or the species involved. There is some evidence that the partial strategy is being implemented successfully.	There is a strategy in place for managing and minimizing bycatch. The strategy is mainly based on information directly about the fishery and/or species involved, and testing supports high confidence that the strategy will work. There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its objective.

Score: 95

Justification: The bycatch strategy consists of effectively managing and minimizing bycatch in the sockeye salmon fishery by use of fixed trap nets and seines, which are very effective in capturing salmon during spawning migrations while also avoiding significant catches of other non-migratory local fish species.

The very low incidence of observed bycatch, based on information directly about the fishery and/or the species involved, provides a strong objective basis that this strategy is effective. The strategy is mainly based on information directly about the fishery and/or species involved, and testing through bycatch monitoring supports high confidence that the strategy is working. There is also an objective basis for confidence that the strategy is effective for flatfish, for which there is a management strategy for these species in the Sea of Okhotsk. The nearshore salmon fishery comprises a negligible portion of the total harvest of flatfish.

There is clear evidence that the fishing strategy is being implemented successfully to harvest sockeye salmon with minimal bycatch of other species, as the trap nets and seines inherently have low bycatch rates and allow for live releases of some bycatch species.

However, evidence that bycatch has not significantly affected most bycatch populations has not been verified with independent assessments of the status of bycatch species, except in a few cases (e.g., flatfish), so the fishery does not reach the 100 score.

2.2.3 Bycatch Species – Information		
Information on the nature and amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch.		
SG 60	**SG 80**	**SG 100**
Qualitative information is available on the amount of main bycatch species affected by the fishery. Information is adequate to broadly understand outcome status with respect to biologically based limits. Information is adequate to support measures to manage bycatch.	Qualitative information and some quantitative information are available on the amount of main bycatch species affected by the fishery. Information is sufficient to estimate outcome status with respect to biologically based limits. Information is adequate to support a partial strategy to manage main bycatch species. Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).	Accurate and verifiable information is available on the amount of all bycatch and the consequences for the status of affected populations. Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty. Information is adequate to support a comprehensive strategy to manage bycatch, and evaluate with a high degree of certainty whether a strategy is achieving its objective. Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.

Score: 80

Justification: Qualitative information and some quantitative information are available on the amount of minor bycatch species affected by the fishery. Based on this information, no species is categorized as a "main" species for the purposes of this assessment. Landed bycatch is reportedly quite small. These include fish removed from gear at the same time as retained species which are then transported to the fish plants for processing. Quantitative information on the relative numbers by species of bycatch delivered to the processing plant was collected in a dedicated subsampling program conducted for the fishery in 2011 (Blikshteyn 2011). However, a portion of the bycatch might be gilled in trapnet mesh or may remain in the bottom of the fish traps for removal and discard when the traps are periodically cleaned or pulled after the fishing season. The significance of this catch component has not been quantified although qualitative observation indicates numbers are likely to be small relative of those that might be expected to result in a significant biological effect. Results were consistent with findings of other bycatch assessments for similar coastal trapnet fisheries in the Kurile Islands and Sakhalin Island. The passive trapnets fished in the nearshore coastal zone during the limited period of the pink salmon return do not take a significant amount of bycatch.

Information showing low amounts of bycatch was sufficient to estimate outcome status and to demonstrate that the level of bycatch is not likely to approach any meaningful biologically based limits. While specific biologically-based limits are not established specific to this fishery, the negligible rate of bycatch provides a high degree of certainty that the

information is adequate to assess outcome status relative to any such limits that might be considered.

Information is adequate to support a partial strategy to manage main bycatch species by minimizing harvest bycatch in salmon fisheries through the use of a highly effective and selective fishing method. However, information is not adequate to support a comprehensive strategy to manage bycatch with a high degree of certainty based on specific bycatch limitation objectives.

Monitoring of bycatch data has been conducted in sufficient detail to conclude that bycatch mortality does not pose substantive risk to bycatch species. Assuring that the salmon fishery uses only low bycatch gears through regulations and ongoing monitoring and enforcement demonstrates that the risk to the bycatch species is unlikely to change. However, monitoring of bycatch data is not conducted in sufficient detail to assess ongoing mortalities to all bycatch species.

2.3.1 ETP Species – Outcome		
The fishery meets national and international requirements for protection of ETP species. The fishery and its enhancement activities do not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.		
SG 60	**SG 80**	**SG 100**
Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species. Known direct effects of the fishery including its enhancement activities are unlikely to create unacceptable impacts to ETP species.	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species. Direct effects of the fishery including its enhancement activities are highly unlikely to create unacceptable impacts to ETP species. Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species. There is a high degree of confidence that there are no significant detrimental effects (direct and indirect) of the fishery including its enhancement activities on ETP species.

Score: 75

Justification: The low occurrence of ETP species in the area of this fishery provide a high likelihood that the effects of the fishery are within limits of national and international requirements for protection of ETP species. No protected fish species are reported to be intercepted by the Ozernaya sockeye fishery. Steller sea lion are listed in the Red Book of Russia and present in this area. Other marine animals present in the area, including seals, killer whales, white whales, sea eagles, and cormorants, are protected by federal regulation.

Direct effects of the fishery on ETP are highly unlikely to create unacceptable impacts to these ETP species. Effects are negligible due to a lack of significant interactions of most

species with the fishing gear. Incidental take of these species by tangling in gear has not been observed due to the nature of the gear. Seals are the only species regularly observed to encounter gear. These seals constantly enter net traps, eat or damage fish, and then freely leave the nets. Entanglements have not been reported. Improved feeding conditions associated with the fish traps might even be regarded as beneficial for seals.

However, seals are regarded as a nuisance by fishers. Although seals are protected, shooting near or at seals is reportedly an occasional practice, reportedly to drive them off. This may be regarded as an indirect effect of the fishery. Given their abundance in this area, some level of human-caused mortality on seals is unlikely to constitute a significant biological impact. However, the incidence of encounters has not been specifically quantified and purposeful take of protected species in not consistent with the scoring guideposts of this indicator at the 80 scoring level.

The indirect effects of harassment of protected seals and sea lions have not been demonstrated to be unlikely to create unacceptable impacts; therefore the fishery does not score 80.

2.3.2 ETP Species – Management		
The fishery has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the fishery does not pose a risk of serious or irreversible harm to ETP species; - ensure the fishery does not hinder recovery of ETP species; and - minimize mortality of ETP species.		
SG 60	**SG 80**	**SG 100**
There are measures in place that minimize mortality due to the fishery and its enhancement activities, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species. The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is a strategy in place for managing the impact due to the fishery and its enhancement activities on ETP species, including measures to minimize mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. There is an objective basis for confidence that the strategy will work, based on some information directly about the fishery and/or the species involved. There is evidence that the strategy is being implemented successfully.	There is a comprehensive strategy in place for managing the impact due to fishery and enhancement activities on ETP species, including measures to minimize mortality that is designed to achieve above national and international requirements for the protection of ETP species. The strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work. There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is evidence that the strategy is achieving its objective.

Score: 80

Justification: There is a strategy in place for managing the impact due to the fishery and its enhancement activities on ETP species, including measures to minimize mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. The strategy involves times and areas where ETP species are uncommon and a ban on take of these species. However, while fishery impacts are estimated to be very low, a comprehensive fishery management strategy designed to avoid ETP impacts has not been implemented or considered necessary.

Observations of a negligible incidence of ETP catch in the fishery provide an objective basis for confidence that the fishery strategy based on qualitative information directly about the fishery and/or the species involved. While harassment or take of protected seals occurs, qualitative information on the continuing local abundance of this species indicates that current strategy of making take illegal continues to provide an effective degree of protection at the population level. However, the lack of an independent observer program precludes a quantitative analysis of effects on marine mammals.

The available information provides evidence that the strategy is being implemented successfully. The incidence of interactions with endangered or threatened species is reportedly very low. However, clear evidence that the strategy is being implemented effectively is precluded by the lack of a marine mammal observer program. This fishery thus meets all 80 scoring guideposts but not 100 scoring guideposts.

2.3.3 ETP Species - Information		
Relevant information is collected to support the management of fishery impacts on ETP species, including: - information for the development of the management strategy; - information to assess the effectiveness of the management strategy; and - information to determine the outcome status of ETP species.		
SG 60	**SG 80**	**SG 100**
Information is adequate to broadly understand the impact of the fishery and its enhancement activities on ETP species. Information is adequate to support measures to manage the impacts on ETP species Information is sufficient to qualitatively estimate the fishery and enhancement activities related mortality of ETP species.	Information is sufficient to determine whether the fishery and enhancement activities may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts. Sufficient data are available to allow fishery and enhancement activities related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty. Information is adequate to support a comprehensive strategy to manage impacts from both the fishery and enhancement activities, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives. Accurate and verifiable information is available on the magnitude of all impacts from the fishery and enhancement activities, mortalities and injuries and the consequences for the status of ETP species.

Score: 70

Justification: Information is sufficient to determine whether the fishery and enhancement activities may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts. Information on the distribution and abundance of recognized ETP species has shown that the only endangered or threatened species present in the region is Stellar sea lions. Qualitative information from the governmental scientific agencies indicates this species does not interact significantly with this fishery. Qualitative information also indicates some potential for indirect effects of the fishery on protected seals due to harassment of nuisance individuals by fishers but the apparent incidence of take does not appear to threaten the status of the local population of this species.

Quantitative estimates of related mortality and the impact of fishing are not available. Quantitative information is not necessary for ETP species such as the red-listed stellar sea lions or other protected marine mammals where there is no reasonable way to quantify such a low incidence of impact or interaction. However, interactions with seals reportedly occur at a much higher rate. While qualitative information indicates indirect mortality of spotted seals due to fisher harassment are not likely to be biologically significant, quantitative data on related mortality and the impact of fishing on seals is not available.

The fishery has insufficient data to allow fishery-related mortality and the impact of fishing to be quantitatively estimated for protected species including seals and sea lions; therefore the fishery does not score an 80.

2.4.1 Habitats – Outcome		
The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.		
SG 60	**SG 80**	**SG 100**
The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. The enhancement activities are likely to have minimal impact on water quality, access of natural-origin fish to spawning habitat, and quality of stream habitat (such as physical features, spawning and rearing flows and water temperatures).	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. The enhancement activities are highly likely to have minimal impact on water quality, access of natural-origin fish to spawning habitat, and quality of stream habitat (such as physical features, spawning and rearing flows and water temperatures).	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. There is evidence that the enhancement activities are highly likely to have minimal impact on water quality, access of natural-origin fish to spawning habitat, and quality of stream habitat (such as physical features, spawning and rearing flows and water temperatures).

Score: 90

Justification: The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. No significant marine habitat impacts are associated with marine trap net use. The only conceivable effects would involve highly localized and temporary disturbances of the substrate due to net anchors or possibly occasional movement of weighed lead lines. Any related damage to the bottom communities is minor and local.

Limited habitat effects result from beach seine site preparation activities in river fishing parcels prior to the fishing season. These include removal of snags such as boulders or trees which might snag beach and sometimes grading of the river bottom to provide a smooth gradual surface conducive to seine operation. Beach seines operation can impact the bottom, but this damage is considered minor.

While the Ozernaya system is largely unaltered by development, habitat impacts to the river bed and wetlands in the estuary are associated with dredge and fill operations to maintain a harbor and support local facilities. While a relatively small area is affected, estuary habitats are widely recognized as critical areas to salmon life cycle, particularly during seawater transition of juveniles. However, evidence from historical reconstructive pictures (Bugaev et al. 2009) suggests that these alterations are relatively small in scale, particularly when considered from a regional perspective.

These alternations are not a direct result of the fishery operation *per se* but can be considered to be an indirect or ancillary effect. This development doesn't appear to have

caused an excessive loss of estuarine function although some has clearly occurred. Thus, while it can be reasonably concluded that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm, additional evidence would be needed to completely discount the possibility. Therefore this fishery satisfies the corresponding 80 scoring guidepost for this indicator but not all of the 100 scoring guideposts.

Enhancement activities for the purposes of this indicator refer to hatchery enhancement which does not occur in the Ozernaya system.

2.4.2 Habitats – Management		
There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.		
SG 60	**SG 80**	**SG 100**
There are measures in place for managing the impact of the fishery and enhancement activities on habitat types, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance. The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is a partial strategy in place for managing the impact of the fishery and enhancement activities on habitat types, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above. There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or habitats involved. There is some evidence that the partial strategy is being implemented successfully.	There is a strategy in place for managing the impact of the fishery and enhancement activities on habitat types. The strategy is mainly based on information directly about the fishery and/or habitats involved, and testing supports high confidence that the strategy will work. There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its objective.

Score: 80

Justification: There is a partial strategy in place for managing the impact of the fishery and enhancement activities on habitat types, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above. The fishing strategy involves use of low impact trap net and beach seine gear which has no significant physical habitat effects. While some habitat effects of fishing site preparation occur in river fishing parcels, these effects are limited and temporary. The lack of hatchery facilities in the Ozernay River area is an effective strategy for avoiding related habitat impacts. The limited scale of fishery and enhancement relative to the available habitat provides an objective basis for confidence that the partial strategy will work and is being implemented successfully. Qualitative information on habitat effects and conditions provide some evidence that the partial strategy is being implemented successfully. However, it is not clear that this strategy has been formalized or tested with specific habitat assessments. Nor is it apparent that ancillary effects of the fishery including habitat alterations associated with development of fishery infrastructure in the estuary have been assessed. Therefore, this fishery meets the 80 scoring guidepost but not the 100.

2.4.3 Habitats – Information		
Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types.		
SG 60	**SG 80**	**SG 100**
There is a basic understanding of the types and distribution of main habitats in the area of the fishery. Information is adequate to broadly understand the main impacts of gear use and enhancement activities on the main habitats, including spatial extent of interaction.	The nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery. Sufficient data are available to allow the nature of the impacts of the fishery and enhancement activities on habitat types to be identified and there is reliable information on the spatial extent, timing and location of use of the fishing gear. Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types. Changes in habitat distributions over time are measured. The physical impacts of the gear and enhancement activities on the habitat types have been quantified fully.

Score: 75

Justification: The nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery. Fishery areas and habitat conditions in those areas are clearly visible.

Sufficient data are available to allow the nature of the impacts of the fishery activities on habitat types to be identified and there is reliable information on the spatial extent, timing and location of use of the fishing gear. Changes in habitat distributions over time are not measured although habitat is relatively homogenous through the fishing area and fishery impacts are very small relative to normal effects including ice and storm impacts.

Information on fishing activities and activity effects are sufficient to identify any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures). However, it is unclear if existing data provides a sound basis for detecting any increase in risk to the habitat associated with existing dredging and fill activities or further development of portions of the estuary to support fishery infrastructure including boat harbor and processing facilities. Risks cannot be effectively detected without specific information documenting current baseline conditions and trends (e.g. habitat typing, spatial analysis, mapping, photogrammetry, historical information summary).

There are insufficient data to detect any increase in risk to habitat associated with fishery-related alternation and development in the estuary; therefore the fishery does not score 80.

2.5.1 Ecosystem – Outcome		
The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		
SG 60	**SG 80**	**SG 100**
The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Enhanced fish are likely to have minimal negative effect on the productivity of wild salmon and other aquatic populations as a result of predation, competition for resources, and disease transmission.	The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Enhanced fish are highly likely to have minimal negative effect on the productivity of wild salmon and other aquatic populations as a result of predation, competition for resources, and disease transmission.	There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. There is evidence that the enhancement activities are highly likely to have minimal negative effect on the productivity of wild salmon and other aquatic populations as a result of predation, competition for resources, and disease transmission.

Score: 100

Justification: There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Owing to the long-term presence of a research station on Kuril Lake, the Ozernaya ecosystem is one of the best-studied salmon systems in the world (Bugaev et al. 2009; Bugaev 2011). Extensive research and monitoring information is available on aquatic and terrestrial species and their interactions with salmon. This information uniformly documents a thriving Ozernaya/Kuril ecosystem supported by sockeye and the marine derived nutrients they deliver to the system. Ozernaya sockeye support a population of brown bears around Kuril Lake that is reportedly among the highest densities in the world. Large numbers of other mammal and bird species gather at the lake to take advantage of the large sockeye return. Strong correlations have been documented between sockeye and many ecosystem components.

Effects of the fishery on sockeye escapement and availability are complex but the fishery clearly has not disrupted ecosystem structure and function to the point of serious or irreversible harm. Fishery management to provide maximum sustained yield can also be expected to provide escapements consistently less than equilibrium population levels that might be expected in the absence of a fishery. This is a function of the domed nature of the stock-recruitment relationship documented for Ozernaya sockeye where the interaction of density dependent effects and normal variation in environmental conditions and marine survival can be expected to cause a salmon population to fluctuate around an equilibrium level that is constrained by the spawning and rearing capacity of the freshwater system. However, changes in run size related to fishing also occur within the range of normal variability of the system. At the same time, fishery management for consistent escapement helps dampen extreme fluctuations in escapement. Thus while fishery operations may reduce average sockeye delivery to the lake and the incidence of extreme large run years, they might also help avoid extremely small runs resulting from detrimental effects of

escaping too many spawners to the system. Among sockeye, very large escapements have been correlated with poor returns in subsequent years due to reduced size and poor survival of juveniles resulting from competition during the lake rearing phase of the life cycle. Benefits of consistent sockeye escapements can be expected to at least partially ameliorate the effects of reduced average numbers. In any case, the Ozernaya/Kuril system remains uniquely diverse and productive to the point that it has been designated as a federal reserve and a world heritage site.

2.5.2 Ecosystem – Management		
There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.		
SG 60	**SG 80**	**SG 100**
There are measures in place, if necessary, that take into account potential impacts of the fishery on key elements of the ecosystem. There is an established artificial production strategy in place, if necessary, that is expected to achieve the SG 60 outcome as a minimum performance requirement. The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/ ecosystems).	There is a partial strategy in place, if necessary, that takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance. There is a tested and evaluated artificial production strategy, if necessary, with sufficient monitoring in place and evidence is available to reasonably ensure with high likelihood that the strategy is effective in achieving theSG80 outcome. The partial strategy is considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/ ecosystems). There is some evidence that the measures comprising the partial strategy are being implemented successfully.	There is a strategy that consists of a plan, containing measures to address all main impacts of the fishery on the ecosystem and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the components and elements of the ecosystem. There is a comprehensive and fully evaluated artificial production strategy, if necessary, to verify with certainty that the SG 100 outcomes are being achieved This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery and its enhancement activities do not cause serious or irreversible harm. The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved. There is evidence that the measures are being implemented successfully.

Score: 95

Justification: There is a partial strategy in place that takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance. The plan and measures are based on well-understood functional relationships between the fishery and the components and

elements of the ecosystem. The strategy involves management of sockeye escapements for consistent levels which maximize long term average sockeye returns while also a providing consistent supply of nutrients and food for dependent components and functions of the ecosystem. The strategy also involves protection of essential habitats with a federal reserve. However, it is not clear that the strategy directly consider fishery impacts on other retained species including Ozernaya populations of pink salmon and char.

The strategy for managing artificial production to avoid detrimental impacts involves no hatchery production of sockeye or any other salmon species in the Ozernaya or nearby systems. The high productivity of this system and the value of the fishery are a testament to the benefits of habitat protection and wild production under the proper circumstances.

This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery activities do not cause serious or irreversible harm. The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved. There is evidence that the measures are being implemented successfully. Extensive research and monitoring information is available on aquatic and terrestrial species and their interactions with salmon. This information uniformly documents a thriving Ozernaya/Kuril ecosystem supported by sockeye and the marine derived nutrients they deliver to the system. While the fishery reduces delivery of sockeye to the ecosystem on average and especially in large run years, maintaining a consistent level of escapement also helps avoid compensatory reductions in future run size when the escapement exceeds the rearing capacity of the lake. On balance, avoiding periodically-disastrous effects of failed sockeye runs is likely to provide consistent benefits to components of the system that depend on sockeye.

2.5.3 Ecosystem – Information		
There is adequate knowledge of the impacts of the fishery on the ecosystem.		
SG 60	**SG 80**	**SG 100**
Information is adequate to identify the key elements of the ecosystem (e.g. trophic structure and function, community composition, productivity pattern and biodiversity). Main impacts of the fishery and enhancement activities on these key ecosystem elements can be inferred from existing information, but have not been investigated in detail.	Information is adequate to broadly understand the functions of the key elements of the ecosystem. Main impacts of the fishery and enhancement activities on these key ecosystem elements can be inferred from existing information, but may not have been investigated in detail. The main functions of the Components (i.e. Target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known. Sufficient information is available on the impacts of the fishery and enhancement	Information is adequate to broadly understand the key elements of the ecosystem. Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated. The impacts of the fishery and enhancement activities on target, bycatch, retained and ETP species and habitats are identified and the main functions of these components in the ecosystem are understood. Sufficient information is available on the impacts of the fishery and enhancement

2.5.3 Ecosystem – Information		
	activities on these Components to allow some of the main consequences for the ecosystem to be inferred. Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	activities on the components and elements to allow the main consequences for the ecosystem to be inferred. Information is sufficient to support the development of strategies to manage ecosystem impacts.

Score: 90

Justification: Section 4.8.5 presents the substantial amount of information available for understanding the ecosystem and most impacts of the fishery. The available information is adequate to broadly understand the key elements of the ecosystem. Owing to the long-term presence of a research station on Kuril Lake, the Ozernaya ecosystem is one of the best-studied salmon systems in the world (Bugaev et al. 2009; Bugaev 2011). Extensive research and monitoring information is available on aquatic and terrestrial species and their interactions with salmon. This information uniformly documents a thriving Ozernaya/Kuril ecosystem supported by sockeye and the marine derived nutrients they deliver to the system. Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated.

The main functions of the components (i.e., Target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known and described in Sections 4.8.2 through 4.8.5. However, specific impacts of the fishery some retained species, including pink salmon and char, have not been estimated. Consequently, information is not sufficient to infer the ecosystem consequences of fishery impacts on these retained species.

Information is sufficient to support the development of strategies to manage ecosystem impacts.

5.1.4 Principle III – Management System

The Kamchatka management system for sockeye salmon fisheries in Ozernaya River area meet all 60 scoring guideposts as well as exceeding a minimum weighed score of 80 for Principle III. Three indicators were scored between 60 and 80 which necessitated identification of conditions for continuing certification.

	Criteria @ 60				Criteria @ 80					Criteria @ 100						
Indicator	1	2	3	4	1	2	3	4	5	1	2	3	4	5	6	Score
3.1.1 Legal/Customary Framework	1	1	1	1	na	1	1	1		na	1	0	1			90
3.1.2 Consultation, Roles & Responsibilities	1	1			1	1	1			0	0	1				85
3.1.3 Long Term Objectives	1				1					0						80
3.1.4 Incentives for Sustainable Fishing	1				1					0						80
3.2.1 Fishery Specific Objectives	1				1					0						80
3.2.2 Decision-Making Processes	1	1			1	1	1	1		na	1	na	1			100
3.2.3 Compliance & Enforcement	1	1	1		1	1	1	0								75
3.2.4 Research Plan	1	1			0	1										70
3.2.5 Management & Performance Evaluation	1				0											60
															Net	80.4

3.1.1 Legal/Customary Framework		
The management system exists within an appropriate and effective legal and/or customary framework which ensures that it: - Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework.		
SG 60	**SG 80**	**SG 100**
The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system. Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery. The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery. The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges. The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective. The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges. The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom on people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.

Score: 90

Justification: The management system exists within an appropriate and effective legal and/or customary framework. The management system is generally consistent with local, national or

international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2 (SG 60).

The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery (SG 80). It remains unclear whether the mechanism is proven to be effective under a full spectrum of tests (SG 100).

The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges (SG 80). A recent legal challenge demonstrated that the management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges (SG 100). Several years ago a company, Kolkhoz Krasnyi Truzhennik, that owns a fishing parcel in Ozernaya River initiated legal processing against SVTU, Federal Agency for Fisheries and company "Vityaz –Avto" regarding incorrect determination of daily capacity of fish processing factory. According to Kolkhoz Krasnyi Truzhennik, their daily capacity was underestimated, and capacity of Vityaz-Avto was overestimated. Due to this, at the competition for distributing fishing parcels in May 2008, Kolkhoz Krasnyi Truzhennik failed while competing for the best fishing parcels. In fact, the results of the distribution of fishing parcels are very important because the best fishing parcels (one of them belongs now to Vityaz-Avto) are situated in the very downstream part of the river and are the most productive. Kolkhoz Krasnyi Truzhennik was given a fishing parcel situated upstream and thus is less productive. Arbitration court of the Kamchatka Kray considered these accusations in December 2008 and after a detailed investigation of the circumstances decided to reject the claim by Krasnyi Truzhennik (decision accepted 19 December 2008). In total, the court investigated and accepted decisions on five cases regarding not only Ozernaya River, but also four fishing parcels in the coastal area of Sea of Okhotsk.

The accusations continued with two publications in the newspaper "Rybak Kamchatka" 22 and 29 July 2010 (web addresses are http://www.fishnews.ru/mag/articles/8348 and http://www.fishnews.ru/mag/articles/8364). The Kolkhoz Krasnyi truzhennik accused Vityaz-Avto of violating fishery regulations: fishing during off-days and fishing outside their officially determined fishing parcel. Kolkhoz appealed to the local police department, which performed special investigations, but the investigation did not find evidence in support of the accusations. Therefore all accusations against Vityaz-Avto by Kolkhoz Krasnyi Truzhennik were investigated and not supported by the governmental authorities. Recently, 29 April 2011 Kolkhoz accused "Vityaz-Avto" in violation of Nature Conservation legislation by dragging near their fishing parcel which influences fishing parcel of Krasnyi Truzhenik (http://www.fishkamchatka.ru/?cont=long&id=29245&year=2011&today=29&month=04).
The assessment team discussed this issue with company Vityaz Avto and with a head of Kolkhoz Krasnyi Truzhennik, chairman Mikhail Puzyrev, during site visit in May 2011 and tried to get all available information. Based on these discussions the assessment team has no basis to dispute the official investigations. Social changes in the Russian system seem to be at the root of this conflict. Under the Soviet Union socio-economic model, Kolkhoz Krasnyi Truzhennik operated as a government entity prosecuting the entire fishery, providing employment, and also maintaining housing, schools, library and stores. After the Soviet Union was disbanded in the 1990s, market-based companies came in taking a share of the fishing quotas and income, and in the process displacing the old way of life (Blikshteyn (2011).

The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2 (SG 80). The degree of formal commitment to these legal rights is unclear (SG 100). The federal law on indigenous peoples of the Far North applies to the management system to ensure their traditional fisheries and livelihoods. In accordance with the law, every district establishes fishing sites for indigenous peoples near their homes. While distributing quotas for salmon fishing, the Anadromous Fish Commission first sets a quota for indigenous peoples (the rate of 100 kg per person per year of aquatic biological resources for local population has been established by the government of Kamchatka Kray). The remainder of the quota is distributed between the other users of water resources. Representatives of the Association of Indigenous Peoples of Kamchatka are involved in the distribution of the quota. In the case the interests of the indigenous peoples are violated, the prosecutors are being involved which abolish laws that are inadequate to the management solution (SG 100).

3.1.2 Consultation, Roles & Responsibilities		
The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties.		
SG 60	**SG 80**	**SG 100**
Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood. The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction. The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained. The consultation process provides opportunity for all interested and affected parties to be involved.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction. The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used. The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.

Score: 85

Justification: Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction (80), as describe in Section 4.7.1. However, functions, roles and responsibilities related to some responsibilities and interactions remain somewhat uncertain (100). In accordance with Federal Law on Fisheries, all stakeholders are included in the decision-making process. This includes fishing companies and public organizations. All interested parties are part of main management body – The Anadromous Fish Commission. Each representative has the right to vote and can influence the decision. However, this collective body bears all the responsibilities for the decisions made, shielding the individuals from being personally responsible for the actions of the Commission. The Federal law does not provide liability for the decisions that lead to negative effects (especially in application to the decisions to fill the spawning grounds and prevent the occurrence of mass mortality of fish due to unfavorable hydrological factors)

The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge (80). The management system demonstrates consideration of the information and explains how it is used or not used through public discussions in the Anadromous Fish Commission (AFC) with decisions publicized on the internet. Consultations with stakeholders are conducted on the regional level via the AFC. As part of the consultation process AFC sends information used for pre-season management (Section 4.7.2) to all stakeholders. During its meeting, the AFC examines data on the intensity of salmon runs, hydrological regime in the spawning grounds and fill rate of spawning ground by spawners, as well as recommendation of KamchatNIRO on the timing and regulation of fishing. AFC decisions are recorded. The protocols of the AFC meetings are sent to all interested parties and published on web site of Federal Fishery Agency (100).

The consultation process provides opportunity for all interested and affected parties to be involved, and facilitates their effective engagement (80). However, the process does not appear to always encourage and facilitate effective engagement by nongovernmental or industry interests. Mechanisms for involvement of environment and different interest groups as well as the broader community are not well developed, but there are number of non-governmental organizations that are interested in salmon fisheries in Kamchatka area. Stakeholders may have an opportunity for involvement, but may have reluctance to participate as a carryover from Soviet days. In addition, while internal information from the management agencies is technically available to the public, the process for obtaining it can be involved making access difficult.

3.1.3 Long Term Objectives		
The management policy has clear long-term objectives to guide decision-making for wild stock components and the use of enhancement programs that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach.		
SG 60	**SG 80**	**SG 100**
Long-term objectives to guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are implicit within management	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by

3.1.3 Long Term Objectives		
The management policy has clear long-term objectives to guide decision-making for wild stock components and the use of enhancement programs that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach.		
SG 60	**SG 80**	**SG 100**
policy.	management policy.	management policy.

Score: 80

Justification: Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within management policy. However, objectives consistent with MSC Principles and Criteria and the precautionary approach are not always required by management policy. The over-arching fisheries and resource regulations cited earlier in this report lay out long-term objectives and long-term goals for the salmon fisheries of the Russian Far East. The regional fisheries management demonstrates its strategy towards sustainable use of fish resources by contribution to fisheries research, increasing control over poaching, development of modern fish-processing factory, contribution to social sphere, by hatchery operation, and organization of protected areas.

3.1.4 Incentives for Sustainable Fishing		
The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing.		
SG 60	**SG 80**	**SG 100**
The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that negative incentives do not arise.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure that they do not contribute to unsustainable fishing practices.

Score: 80

Justification: The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing and seeks to ensure that negative incentives do not arise. Many fisheries, including and Vityaz-Avto and Delta, considerably contribute to social sphere of fisheries settlements and protection of the resource, partly fulfilling the governmental functions. According to Federal Law of Fisheries, fishing companies are leasing the fishing sites for 20 years. Therefore, companies are interested in ensuring a sustainable fishery and take measures to protect their resources, develop educational programs to prevent poaching and protect the environment. Cancelling of TAC and catches quotas has helped preventing IUU catches by fishing companies. However, consideration of the potential for unintentional incentives for potentially unsustainable fishing practices does not appear to be an explicit consideration in regular reviews of management policy or procedures.

3.2.1. Fisheries Specific Objectives		
The fishery and its enhancement activities have clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.		
SG 60	**SG 80**	**SG 100**
Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system and enhancement activities.	Short and long term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system and enhancement activities.	Well defined and measurable short and long term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system and enhancement activities.

Score: 80

Justification: Short and long term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system and enhancement activities. These include short term objectives for spawning escapements intended to provide for maximum sustained yield and long term objectives for fishery sustainability reflected in management regulation.

Objectives consistent with Principles 1 and 2 are also reflected in the decision not to establish hatcheries in the Ozernaya River. According to overall strategy of development salmon fisheries in Russia, hatcheries are among the priorities to increase fishery productivity. At the same time, Kamchatka authorities and head of KamchatNIRO state that there is no plan of developing hatcheries in the Ozernaya River area because of very high value of wild local stock of sockeye.

However, short and long term objectives do not always provide clear measurable standards with respect to effects of fisheries on the ecosystem. Objectives are explicit with respect to protecting spawning escapement, but are less clear on the environmental/ecosystem end. Where ecosystem changes were observed, a response would be expected but haven't seen such a decline, although unclear if it is actually being monitored. In particularly, fishing with beach seines considerably changes of mouth area of Ozernaya River area which had large wetland areas before large scale fishing began. Therefore, this performance indicator might partially meet the SG100 for hatchery objectives, but does not meet the SG100 for specific objectives related to fishery effects on the ecosystem.

3.2.2 Decision-Making Processes		
The fishery-specific and hatchery management systems include effective decision-making processes that result in measures and strategies to achieve the objectives.		
SG 60	**SG 80**	**SG 100**
There are informal decision-making processes that result in measures and strategies to achieve the fishery-specific and enhancement objectives. Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	There are established decision-making processes that result in measures and strategies to achieve the fishery specific and enhancement objectives. Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Decision-making processes use the precautionary approach and are based on best available information. Explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific and enhancement objectives. Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Decision-making processes use the precautionary approach and are based on best available information. Formal reporting to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.

Score: 100

Justification: Previous sections provide information demonstrating the high degree of sophistication of the decision making process in the fishery. The fishery-specific and hatchery management systems include effective decision-making processes that result in measures and strategies to achieve the objectives. There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.

Decision-making processes respond to serious and other important issues issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. KamchatNIRO uses relevant information to provide pre-season forecasts so that fishermen, buyers, processors, and the Anadromous Fish Commission can plan for the upcoming season. The Anadromous Fish Commission considers a wide range of issues regularly reported by federal and regional agencies and those brought up by stakeholders to make in-season decisions. All stakeholders have an opportunity to attend the Anadromous Fish Commission meetings

Decision-making processes use the precautionary approach and are based on best available information by KamchatNIRO. The use of optimum spawning escapement as both target and limit reference points demonstrates a precautionary element to decision making. At the same time, actual spawning escapement approaches medium limit of a range determined for optimal escapement. Pure precautionary approach would require maintaining spawning escapement rather at higher limit.

Formal reporting to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. This is achieved but transparent way of decision-making in the Anadromous Fish Commission, its availability for all interested parties and immediate publication of its decisions at the SVTU website.

3.2.3 Compliance & Enforcement		
Monitoring, control and surveillance mechanisms ensure the fishery and hatchery management measures are enforced and complied with		
SG 60	**SG 80**	**SG 100**
Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and enhancement activities under assessment, and there is a reasonable expectation that they are effective. Sanctions to deal with noncompliance exist and there is some evidence that they are applied. Fishers and hatchery operators are generally thought to comply with the management system for the fishery and its enhancement activities under assessment, including, when required, providing information of importance to the effective management of the fishery.	A monitoring, control and surveillance system has been implemented in the fishery and enhancement activities under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. Sanctions to deal with noncompliance exist, are consistently applied and thought to provide effective deterrence. Some evidence exists to demonstrate fishers and hatchery operators comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery and its enhancement activities. There is no evidence of systematic noncompliance.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and enhancement activities under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules. Sanctions to deal with noncompliance exist, are consistently applied and demonstrably provide effective deterrence. There is a high degree of confidence that fishers and hatchery operators comply with the management system under assessment, including, providing information of importance to the effective management of the fishery and its enhancement activities. There is no evidence of systematic noncompliance.

Score: 75

Justification: A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules. All the enforcement agencies and stakeholders report drastic reduce of level of illegal fishing in Ozernaya River and Kuril Lake since 1990s and through 2000s and practical absence of poaching now. In addition to usual enforcement activities, this fishery has a strong additional protection because Kuril Lake, which is a feeding area of juvenile sockeye, is a sanctuary.

Sanctions to deal with noncompliance exist, are consistently applied and though to provide effective deterrence.

There is a high degree of confidence that fishers and hatchery operators comply with the management system under assessment, including, providing information of importance to the effective management of the fishery and its enhancement activities. Geographically, the principal fishing area (mouth of Ozernaya River) is quite small so information exchange between all the participants and management system is very effective. Sometimes management actions, like closure of fishing due to non-sufficient spawning escapement take place even without the main management body – Anadromous Fish Commission - to avoid delays with it due to, for instance, breaks in functioning of the Commission in weekends.

No evidence of systematic noncompliance has come to the attention of the assessment team regarding monitoring, control, and surveillance activities in the freshwater portion of this fishery. However, some questions have been raised by under P II regarding potential noncompliance with marine mammal protection regulations in the marine portion of this fishery. Specifically, this concerns possession of firearms on fishing vessels and use to harass or harm nuisance seals.

Uncertainty exists for compliance of the fishery with marine mammal protection regulations, especially possession of firearms on vessels and harassment of seals; therefore the fishery does not score 80.

3.2.4 Research Plan		
The fishery and its related enhancement activities have a research plan that addresses the information needs of management.		
SG 60	**SG 80**	**SG 100**
Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2. Research results are available to interested parties.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Research results are disseminated to all interested parties in a timely fashion.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.

Score: 70

Justification: Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2. A substantial amount of research occurs in the Ozernaya River area with development of research plan showing that research occurs in a systematic way to address the management needs for the fishery.

One and five year research plans are compiled by KamchatNIRO but have not been made available to the assessment team. A research program was approved by the Federal Agency for Fisheries in 2007. Its official name is "Far Eastern Basin program of complex investigation of Pacific salmon for period 2007-2012". This program addresses all the information necessary for effective fishery management of the directed fishery. Kamchatka fisheries are essential part of this program. However, without access to research plans it remains unclear where all questions related to MSC principles 1 and 2 are addressed in a comprehensive manner.

Research results are generally available and disseminated to interested parties in a timely fashion. Significant research results are regularly published in the scientific literature. However, research plans and some internal research reports may not be widely disseminated and publicly available.

Research plans have not been made available to the assessment team; therefore the fishery does score not 80.

3.2.5 Management & Performance Evaluation		
There is a system for monitoring and evaluating the performance of the fishery and hatchery management system against its objectives. There is effective and timely review of the fishery and hatchery management system.		
SG 60	**SG 80**	**SG 100**
The fishery and its enhancement programs have in place mechanisms to evaluate some parts of the management system and are subject to occasional internal review.	The fishery and its enhancement programs have in place mechanisms to evaluate key parts of the management system and are subject to regular internal and occasional external review.	The fishery and its enhancement programs have in place mechanisms to evaluate all parts of the management system and are subject to regular internal and external review.

Score: 60

Justification: The fishery and its enhancement programs have in place mechanisms to evaluate key parts of the management system and are subject to regular internal review but opportunities for external review of the fishery are limited by the inconsistent availability of information outside the local governmental management system. Results of fishing season and effectiveness of management actions undertaken are discussed at the both management agencies such as AFC, SVTU and FAR, and also at Research Councils of fisheries institutes such as KamchatNIRO, TINRO-Center and VNIRO on a regular basis. However, information on run size, harvest by time and area, fishery management actions, and escapement is not typically reported outside the management system except in rare cases. Occasional publication of related information as in Bugaev et al. (2009) and Bugaev (2011) provides a historical perspective but will not allow a periodic opportunity for future management and performance reviews outside the management system.

Inconsistent availability of annual fish run and fishery information outside the local governmental management system limits the opportunity for occasional external review of the fishery; therefore the fishery does not score 80.

5.2 Tracking and tracing fish and fish products

5.2.1 Traceability

The client group companies, Delta Ltd. and Vityaz-Avto Ltd., are vertically integrated and under a single ownership, although they are separate companies. Both companies lease fishing parcels, own the vessels that fish at the parcels, own the transportation conveyances (barges from ocean sites and trucks from river sites) from the fishing sites to the processing plants, and own the processing plants. Daily catch of sockeye salmon is either landed directly on shore (seines) or delivered by boats to the shore (trap nets), where it is weighed and reloaded to mobile containers which transport chilled fish. Ice is used for cooling the fish. While the catch is transported, it is accompanied by a document specifying the place and the crew which captured it, the weights of the transported fish, and the processing facility at either the Delta Co or the Vityaz Avto Co where the catch is delivered. Upon delivery, the catch is weighted again by the processing facility and then the catch is sent for processing. No processing or transshipment occurs at sea.

Arriving catch is recorded in the log of the processing facility. The record contains the location of the catch and company which submits catch. Both the companies' logs and the processing facilities' logs are regularly checked by government inspectors, sanitary-epidemiological control and territorial RosRybolovstvo. The facts of such inspections are also recorded in appropriate logs.

Some risk occurs that illegally harvested fish or fish harvested by a company not part of the client group could be accepted at a processing facility as certified. Client group companies do not accept fish from other companies, and process only their own fish. No legally-caught fish from other companies could surreptitiously enter the processing plants of client group companies as all fish must have documentation checked frequently by federal authorities, and documentation of fish from other companies would easily be evident. Substantial efforts by the client group companies (and other companies) to enhance enforcement activities by supplying personnel, equipment, and funding to the authorities minimizes the opportunity for illegal harvest in the beach regions where legal fishing occurs. Beach seine fishing in the river occurs in plain view of citizens of the two towns that border the river (on either side), so illegal fishing is difficult to hide. These companies also support enforcement activities further up river to minimize the opportunity of illegal harvest of roe. Therefore, the likelihood is low of illegal product entering the processing facilities with the proper documentation and weights that would pass inspections by the authorities.

The client group companies own fishing parcels for the Opala and Bolshaya Rivers north of the Ozernaya River by approximately 50-100 km. No roads connect these other fishing areas to the towns along the Ozernaya or to the Ozernaya fishing areas. Processing plants at the other rivers handle the production from those rivers. Permit conditions for the 20-year lease of the sites require fish processing facilities on the rivers where catch occurs; without adequate processing, the government would not lease the sites. Fish are not transferred from the Opala or Bolshaya Rivers to the Ozernaya because of the difficulties of transport and the ease of processing at those rivers. The documentation required and checked by federal agencies for salmon landings would clearly identify any fish from out of the

certification area, should some reason for a transfer be necessary. Only a *de minimis* risk exists for mixing of Opala or Bolshaya River fish with certified fish from the Ozernaya.

MSC Chain of Custody requirements were checked only as far as salmon landed at authorized fishing parcels by legally permitted client group fishing companies and delivered to processing facilities at either the Delta Co or the Vityaz Avto Co, where the landings can be monitored in accordance with MSC requirements. The client group companies may use the certificate and apply the MSC logo if they deliver to a processing facility that holds MSC chain of custody certification.

5.2.2 Points of landing

The limit of identification of landings is those landings at fishing parcels of client group companies and delivered to processing facilities at either the Delta Co or the Vityaz Avto Co, and only those companies, parcels, and facilities. The fishing parcels authorized for participation in the certified fishery (Table 11) will be posted through e-cert and available on the MSC website so that processors receiving products can confirm participants in the certification.

Table 11. Fishing parcels authorized to Vityaz-Avto and Delta Companies

Vityaz-Avto Co, Ltd.		
Kamchatka-Kuril subzone (Sea of Okhotsk) 61054		
Fishing parcel number	**Latitude**	**Longtitude**
189	51-48,20 N	156-30,06 E
190	51-47,16 N	156-30,08 E
191	51-46,10 N	156-30,10 E
197	51-39,43 N	156-29,58 E
203	51-32,44 N	156-29,07 E
204	51-31,38 N	156-29,07 E
Length of the fishing parcel - 300 meters (by 150 meters from basic point by shore line)		
Width of the fishing parcel - 2000 meters (by perpendicular to the shore line from basic point)		
Ozernaya river		
Fishing parcel # 752		
Lower border - 1000 meters from the mouth of a river		
Higher border - 1200 meters from the mouth of a river		
South end of the island.		
Length - 200 meters		
Delta Co., Ltd.		
Kamchatka-Kuril subzone (Sea of Okhotsk) 61054		
Fishing parcel number	**Latitude**	**Longtitude**
198	51-37,13 N	156-29,53 E
Ozernaya river		
Fishing parcel # 755		
Lower border - 2000 meters from the mouth of a river		
Higher border - 2400 meters from the mouth of a river		
Left bank of the river		
Length - 400 meters		

The occurrence of illegal fishing in the Russian Far East suggests a need for robust chain of custody to mitigate the risk of product from a non-certified source entering the supply chain. Chain of custody would begin at the point of delivery of product from a client group company to a processing facility owned by the client group company.

5.2.3 Eligibility to enter chains of custody

Sockeye salmon produced by fishing companies in the client group with authorization to fish with set nets and trap nets within the Ozernaya area landed at authorized parcels (Table 11) and delivered to processing facilities at either the Delta Co or the Vityaz Avto Co are eligible to enter further chain of custody. Any companies buying from approved fishing companies or processing facilities that receive certified product are required to have chain of custody certification for further sale and distribution. To use the MSC logo, subsequent links in the distribution chain must enter into a separate chain of custody certification that proves they can track the salmon product to permitted fishing companies with a certificate sharing agreement and landing at approved facilities.

5.2.4 Target eligibility date

The actual eligibility date for product from the fishery to bear the MSC label will be 1 July 2012, the start of the fishing season, and less than six months from the release of the PCDR.

5.3 Stakeholder comments

No public comments other than from the MSC were received during the public comment period. The MSC comments and responses from MRAG Americas are presented in Appendix 3.

5.4 Objections Process

No Objection was received.

6 CONCLUSION & AGREEMENT

6.1 Certification Recommendation

The Performance of the Ozernaya Sockeye Salmon Fishery in relation to MSC Principles 1, 2 and 3 is summarized below:

MSC Principle	Fishery Performance
Principle 1: Sustainability of Exploited Stock	Overall: 89.6
Principle 2: Maintenance of Ecosystem	Overall: 84.0
Principle 3: Effective Management System	Overall: 80.4

The fishery attained a score of 80 or more against each of the MSC Principles. The MRAG Americas Assessment Team, therefore, recommends that the Northeast Region Fishery be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries. A number of Conditions have been identified that the fishery must satisfy in order to maintain this Certification. Details, including the client action plan, are provided in Section 7.3.

The overall surveillance score exceeds two (2), indicating annual onsite surveillance is most appropriate to the fishery. Annual surveillance audits will review the fishery for continued conformity with the MSC"s Principles and Criteria for Sustainable Fishing, as well as address the specific measures identified in the conditions.

Following this Recommendation of the assessment team, and review by stakeholders and peer-reviewers, a determination is hereby made by the MRAG Americas Certification Committee (MACC) to certify the Ozernaya River sockeye salmon fishery.

6.2 Scope of Certification

Unit of Certification	
Species:	Sockeye salmon (*Oncorhynchus nerka*)
Geographical Area:	Northwest Pacific, Russian Far East, Sea of Okhotsk, Western coast of Kamchatka peninsula, Ust-Bolsheretsk district, Ozernaya River
Harvest method:	Fixed trap nets, beach seines
Stock:	Population of sockeye salmon, spawning in Ozernaya River and Kuril Lake and its tributaries.
Management System:	Anadromous Fish Commission, Federal Fishery Agency, Regional division of the Federal Fishery Agency, Agency of Fisheries, Research Institute for Fisheries and Oceanography, State Marine Inspection, a combination of federal and state management
Client group:	Fishing Companies Vityaz-Avto and Delta

6.3 Conditions, recommendations, and Client Action Plan associated with Certification

Condition 1

1.1.2 Reference Points: Limit and target reference points or operational equivalents are appropriate for the wild production components of the stock.

SG 80

- Reference points are appropriate for the wild stock and can be estimated.
- The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.
- The target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome.
- For low trophic level species, the target reference point takes into account the ecological role of the stock.
- Where the wild stock is a management unit comprised of more than one subcomponent, it is highly likely that the target and limit reference points are consistent with maintaining the inherent diversity and reproductive capacity of each stock subcomponent.

The target reference point does not consider maintenance of the stock at a level consistent with the equivalent of BMSY in the event of a downturn in marine survival conditions. The target reference point, defined as an escapement goal range, is specifically designed to produce maximum sustained yield based on the spawner stock-recruitment function. The stock-recruitment analyses uses historical data on run size and age composition to reconstruct brood tables showing the total number of adult progeny produced by a given spawning escapement. MSY escapement levels are identified based on statistical fits of standard nonlinear functions to the available data. The shape of the stock-recruitment, and corresponding estimates of escapements that produce MSY, are related to the biological characteristics of the stock, productivity and capacity of the available spawning and rearing habitat, and survival rates related to conditions during migration and marine portions of the life cycle. Habitat and marine conditions vary from year to year but also vary in broad patterns extending over a decade or more. Therefore, production functions and escapement goals are periodically reviewed and revised as new data becomes available. This has been the case for Ozernaya sockeye and current goals reflect conditions prevalent for 1995-2005 brood years. Current goals appear to be generally consistent with MSY escapement levels under current conditions based on the available data. However, it is not clear whether current goals are adequate for maintaining maximum yields under reduced ocean productivity cycles that will inevitably occur at some point in the future. It is also not apparent that current targets and the process for revising targets represent a precautionary approach:

1. There is some indication that current goals may be slightly lower than actual MSY because of lack of contrast in the available data – escapements over 3 million are not represented and might produce sustained high yields greater than those inferred from production curve fits through the available data. Estimates of higher MSY escapement goals under historical conditions of lower ocean productivity may also be indicative of the same issue. Production curves and MSY escapements of salmon typically shift to higher escapement levels under more productive ocean conditions. However, the Ozernaya curves were reported to shift to lower escapement levels. This pattern may reflect changes in illegal harvest levels on the spawning grounds over time if actual spawner numbers were historically much lower than weir estimates. A complete evaluation of the relative effects of estimation bias and environmental effects on productivity in freshwater and the ocean has not been provided.
2. Recognition and revision of escapement targets based on spawner-recruit data inevitably occurs years after the change has occurred because returns from a spawning cohort are not complete until six years later and multiple data points are needed to distinguish annual variation from a long term trend. The risk of recruitment overfishing can be significant in the interim until goals are revised.
3. Costly investments and expansion of processing capacity and development of lucrative markets for Ozernaya sockeye provide a high incentive for conservation and management for maximum long term sustainability but also implicitly provide a strong impetus to fish particularly in the face of unclear or uncertain information.
4. The Ozernaya sockeye stock is being heavily exploited under current high levels of productivity. Exploitation rates on Ozernaya sockeye are often 80% or higher which are at or exceed sustainable rates currently identified for any Alaskan sockeye stock. High exploitation rates under current conditions have resulted in a pattern of recent escapements which have generally fallen in the lower end of the target goal range.

5. Decreases in marine survival accompanying a shift to less-productive marine conditions could easily result in an extended period of recruitment overfishing relative to MSY if the shift is not recognized at the time it occurs, particularly at current high exploitation rates.

6. Determination of the TRP is crucial for sustainability of the fishery, but sample size is not very large and data is limited on production from large escapements; this does not allow for assessments of statistical parameters with high confidence. It is not apparent that all the available information, in addition to S-R curve, has been taken into account. A comprehensive analysis of escapement goals would ideally consider relationships between spawner abundances and growth, abundance, and age of juveniles and smolts emigrating from the watershed, size-related smolt-to-adult marine survival rates, spawning habitat amounts and use in relation to spawner abundance, food availability and zooplankton community responses to juvenile density, and climate-related changes in lake limnology which might affect productivity for sockeye. Ozernaya sockeye are one of the rare cases where detailed analyses of this nature are feasible because of the long term research efforts in Kuril Lake.

The target and limit reference points are not demonstrated to be highly likely to maintain the inherent diversity and reproductive capacity of early and late stock subcomponents. Current exploitation rates on this stock are very high and daily harvest patterns in recent years provide evidence that current reference points may not be adequate to protect all run subcomponents in every circumstance. In many years, some portions of the run have been much more heavily exploited than others. In earlier years, the later portion of the run was typically exploited at a higher level after sufficient numbers had escaped to assure that aggregate escapement goals would be met. In more recent years the early and middle portions of the run were more heavily exploited. There has been some indication that changes in exploitation patterns are the result of the lack of passing days for sea nets. Regardless of the reason for these uneven harvest patterns, while it is likely that current reference points are consistent with protecting stock subcomponents, a high likelihood or protection cannot be established.

Condition 1. ***Demonstrate that the target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome.***

Demonstrate that where the wild stock is a management unit comprised of more than one subcomponent, it is highly likely that the target and limit reference points are consistent with maintaining the inherent diversity and reproductive capacity of each stock subcomponent.

By the first annual surveillance, the fishery client must present evidence that a plan is in place to address this condition.

By the second annual surveillance, the fishery client must present evidence that the plan has been implemented.

By the third annual surveillance, the fishery client must demonstrate the condition has been met.

It is recommended that consideration be given to making the comprehensive escapement goal analysis report publically available and subjecting the analysis to peer-review.

Client Action Plan

The Client will work with KamchatNIRO experts to develop a plan that describes how the Ozernaya sockeye escapement goal will be re-assessed to reflect additional returns based on large escapements in 2003 and 2007 by the first surveillance audit. This plan will include detailed information available through 2012, on the number of sockeye spawners and estimated catch of Ozernaya sockeye by fishery (including drift net and illegal removals) that will be used in the analysis. Sockeye salmon return estimates from two large spawning events in 2003 and 2007 will provide higher contrast data necessary for a better production curve fit. The adult return data from the 2003 brood year was completed in 2009 and will be available during the first surveillance audit, and return data from the 2007 brood year will be complete in 2013 and available during the second surveillance audit.

By the third surveillance audit, the Client will work with appropriate KamchatNIRO experts to evaluate the spawner-recruit relationship through the 2007 brood year to make sure the escapement goal is consistent with maximum sustained yield (or functional equivalent). This analysis will also include consideration of how the fishery will be managed to:

- preserve the timing and spatial distribution of representative stock components.
- account for uncertainty regarding changing climate conditions (for example how will management respond to declines in ocean and/or freshwater survival).

Consultation

KamchatNIRO has an experience of research plans on Ozernaya river within more than 70 years already. Each year they make a forecast for the future fishing season, controlling number of spawners on the river and in the Kuril lake. They will continue this work in the future, collecting data about peak years. The importance of Ozernaya river for the economy of Kamchatsky Krai government helps to keep the control of the sockeye stock. The client is supporting experts' work on the river, supplying transport (boat or truck), fuel, all other necessary needs.

KamchatNIRO experts prepare the suggestion about passing days to the Fishery Anadromous Commission, taking into consideration BMSY of the population subcomponents. For example, this, 2012 year, fishing season, is the first within last 10 years, when KamchatNIRO gives a possibility of spring sockeye catch. At the same time, there are "2 passing days–3 fishing days" method was recommended to the Fishery Anadromous Commission for the spring sockeye in order to manage subcomponent spawning. The main fishing season "2 passing days–2 fishing days" method is used. The client, as a member of Ozernaya river Salmon Fisheries Association, take an active part in discussion of adding passing days if not enough number of spawners in the river was calculated by KamchatNIRO experts. No one public discussion without experts participation in it takes place.

The clients have contracted with KamchatNIRO to provide technical expertise in completing actions required in the conditions (Appendix 3).

Condition 2

1.2.3. Relevant information is collected to support the harvest strategy.

SG 80

- Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
- Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.
- There is good information on all other fishery removals from the stock.
- Information is sufficient to estimate the significance of fishery harvests on stock components.

Accuracy in harvest estimates of Ozernaya sockeye in the offshore drift net fishery and uncertainty of implications of current and historical estimates of marine drift net and freshwater illegal harvest may affect harvest strategy. There is good information on commercial fishery removals of this stock in freshwater fisheries in the Ozernaya River and the marine trapnet fishery in the Ozernaya area. Estimates of the removals of Ozernaya sockeye are also available in other significant commercial fisheries occurring in marine trapnet fisheries north of the Ozernaya area and in the offshore drift net fishery operating in the Russian EEZ. However, the quality of the harvest data in northern trapnet fisheries and the offshore drift net fishery is difficult to assess. The offshore drift net fishery in particular reportedly has an uncertain history with respect to the accuracy of the harvest reporting. In addition, illegal harvest of Ozernaya sockeye in freshwater has not been estimated for the current or historical period. All accounts suggest that illegal harvest has been reduced to low levels within the last five years but illegal harvests was clearly much greater throughout the historical period and the level of this harvest has substantial implications for interpretation of historical data on status and productivity and application to the fishery strategy.

Condition 2. Demonstrate that the fishery has good information on all other fishery removals from the stock.

By the first annual surveillance, the fishery client must present evidence that a plan is in place to address this condition.

By the second annual surveillance, the fishery client must present evidence that the plan has been implemented.

By the third annual surveillance, the fishery client must demonstrate the condition has been met.

Client Action Plan

The Client will work with appropriate KamchatNIRO experts to compile annual estimates of historic and current driftnet fishery harvest of Ozernaya River sockeye salmon stock. The history estimates scientific data from 1995 and includes both Russian and foreign driftnet fishery harvests.

To account for illegal freshwater sockeye salmon removals, the Client will collect and summarize historical (at least as far back as 2000) information (newspaper accounts, official government records on number of citations, published reports, etc.) on illegal harvests of sockeye in the Ozernaya/Kuril Lake drainage. To gather information on current levels of illegal harvests, the Client will work with an independent observer to create a logbook and record all occurrences of poaching activity. These observed occurrences will be collected from the Client's own patrols, if necessary, as well as all independent and government Ozernaya enforcement patrols. The logbook will have a record of dates, locations, and amounts of poaching activity.

The client will also work with WWF and the Wild Salmon Center to continue an independent observer program started in 2011 to monitor illegal, unreported, and unregulated fisheries in the river and coastal area.

The client has already started collecting information from these activities and will make it available during the first and subsequent surveillance audits.

Consultation

The Client had prepared two letters – one to Kamchatka Federal Police department, one to Russian Federal Fisheries Agency, Kamchatka department – with the request of presenting data about illegal fishery in Ozernaya River. Both answers show that the data about poaching on the river was collecting since 2000 only. In 1990s no one poaching case was stated.

Very similar situation with driftnet fishing influence research. KamchatNIRO started collecting the information since 1995 and continue this work since now. Keeping in mind, that WWF and other NGOs are raising up the question of driftnet problem on Russian Government level, the attitude to continuation of this work by KamchatNIRO will be high.

Client is willing to continue independent observer program, which is held mutually by WWF and WSC. Client is ready to support this program on the river and first experience of such work happened in 2011. WSC expert have spent a month on Ozernaya River, providing assistance to the client's fishermen with the logbooks correct filling, etc. Client supply transport, communication facilities, food for the observer.

Kamchatka WWF office is taking active part in anti-poaching program on Kuril lake and Kronotsky State Preserve by funding special independent anti-poaching brigades. This program has a 5-year history and its effectiveness was proved by Kronotsky preserve administration and KamchatNIRO. The Client is providing transport and fuel for local police office within the fishing period with the purpose of everyday patrolling the river.

The clients have contracted with KamchatNIRO to provide technical expertise in completing actions required in the conditions (Appendix 3). WWF and WSC have agreed to work with the clients in achieving the conditions (Apendix 3).

Condition 3

2.1.3. Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.

SG 80

- Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.
- Information is sufficient to estimate outcome status with respect to biologically based limits.
- Information is adequate to support a partial strategy to manage main retained species.
- Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).

Information on retained species, including pink salmon and char, is insufficient to estimate status with respect to biologically-based limits and to detect any increase in risk level due to the operation of the fishery. Data are not sufficient to detect any increase in risk level due to operation of the fishery or the effectiveness of the strategy. While the available data suggests a high likelihood that fishery impacts are not significant when local Ozernaya populations of pink salmon and char are considered in the context of the regional distribution and abundance of these species, risk levels of the fishery for local populations of these species are not specifically assessed.

Condition 3. Provide sufficient data continue to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).

By the first annual surveillance, the fishery client must present evidence that a plan is in place to address this condition.

By the second annual surveillance, the fishery client must present evidence that the plan has been implemented.

By the third annual surveillance, the fishery client must demonstrate the condition has been met.

Client Action Plan

The Client currently has kept records of their catch of retained species (pink, chum, coho salmon, char, etc.) since 2009. The Client will work with KamchatNIRO estimate historical and current data on abundance of retained species back to 2001. The abundance trends can be estimated through catch data (relative to sockeye harvests) and escapement data (when available). For catch data, both changes in the number of fish and average fish weight over time should be taken into consideration. Based on these trends, relative abundance of retained species can be assessed. The Client will work with KamchatNIRO to analyze the population status of retained species and assess the risks on these populations from the Ozernaya sockeye fishery. A report summarizing available information, including the risk assessment analysis will be completed by the third surveillance audit.

Consultation

The Client had prepared the letter to KamchatNIRO with the request of presenting data about pink salmon, char, other species, if available. At the same time, Client will set up the contract with KamchatNIRO in the nearest fishing season for this specific research.

As for today, the only data, which is accessible – the numbers of pink, char, other species bycatch – stored in Clients files. This data is available within last 3 years only but Client plans to keep these records by species by years for a maximum longer period in electronic tables. This information will be presented to KamchatNIRO for further analysis.

The clients have contracted with KamchatNIRO to provide technical expertise in completing actions required in the conditions (Appendix 3).

Condition 4

2.3.1. The fishery meets national and international requirements for protection of ETP species. The fishery and its enhancement activities do not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species..

SG 80

- The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.
- Direct effects of the fishery including its enhancement activities are highly unlikely to create unacceptable impacts to ETP species.
- Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.

The fishery has insufficient data to allow fishery-related mortality and the impact of fishing to be quantitatively estimated for protected species including seals and sea lions. Direct effects of the fishery on ETP are highly unlikely to create unacceptable impacts to these ETP species. Effects are negligible due to a lack of significant interactions of most species with the fishing gear. Incidental take of these species by tangling in gear has not been observed due to the nature of the gear. Seals are the only species regularly observed to encounter gear. These seals constantly enter net traps, eat or damage fish, and then freely leave the nets. Entanglements have not been reported. Improved feeding conditions associated with the fish traps might even be regarded as beneficial for seals. However, seals are regarded as a nuisance by fishers. Although seals are protected, shooting near or at seals is an occasional practice, reportedly to drive them off. This may be regarded as an indirect effect of the fishery. Given their abundance in this area, some level of human-caused mortality on seals is unlikely to constitute a significant biological impact. However, the incidence of encounters has not been specifically quantified and purposeful take of protected species in not consistent with the scoring guideposts of this indicator at the 80 scoring level.

Condition 4. Demonstrate that indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.

By the first annual surveillance, the fishery client must present evidence that a plan is in place to address this condition.

By the second annual surveillance, the fishery client must present evidence that the plan has been implemented.

By the third annual surveillance, the fishery client must demonstrate the condition has been met.

Client Action Plan

No reported injuries of seal and sea lions have been observed to occur from interactions with coastal fishing gear. However, shooting marine mammals with live ammunition from boats is a common occurrence. As outlined in the client action 7, the Client will implement a company policy of prohibiting any firearms on their fishing boats and use of firearms to scare, injure, or kill marine mammals and birds. The Client will work with an independent third-party to establish a verification system that the policy is implemented and working.

Consultation

The Client plans to improve a company policy, which should prohibit rifles and guns on the fishing vessels. Each manager will be instructed accordingly, special official documents, signed by company General Director. Regular internal company audit will be held, checking the records in the logbook and actual information. The independent observer will be visiting set nets in order to make a control checking of documenting the possible injures.

The client can achieve this condition independently.

Condition 5

2.3.3. Relevant information is collected to support the management of fishery impacts on ETP species, including:
- information for the development of the management strategy;
- information to assess the effectiveness of the management strategy; and
- information to determine the outcome status of ETP species..

SG 80

- Information is sufficient to determine whether the fishery and enhancement activities may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts.
- Sufficient data are available to allow fishery and enhancement activities related mortality and the impact of fishing to be quantitatively estimated for ETP species.

The fishery has insufficient data to allow fishery-related mortality and the impact of fishing to be quantitatively estimated for protected species including seals and sea lions. Qualitative information indicates some potential for indirect effects of the fishery on protected seals due to harassment of nuisance individuals by fishers but the apparent incidence of take does not appear to threaten the status of the local population of this species. Quantitative estimates of related mortality and the impact of fishing are not available. Quantitative information is not necessary for ETP species such as the red-listed stellar sea lions or other protected marine mammals where there is no reasonable way to quantify such a low incidence of impact or interaction. However, interactions with seals reportedly occur at a much higher rate. While qualitative information indicates indirect mortality of seals due to fisher harassment are not likely to be biologically significant, quantitative data on related mortality and the impact of fishing on seals is not available.

Condition 5. ***Provide sufficient data to allow fishery-related mortality and the impact of fishing to be quantitatively estimated for protected species.***

By the first annual surveillance, the fishery client must present evidence that a plan is in place to address this condition.

By the second annual surveillance, the fishery client must present evidence that the plan has been implemented.

By the third annual surveillance, the fishery client must demonstrate the condition has been met.

Client Action Plan

The Client will work with KamachtNIRO experts or any other experts in this field to provide estimates of seal and sea lion historical and current abundances and trends in abundances in the area and in other areas in the region with little or no potential human impacts. This data will be analyzed to determine if there are any positive or negative trends in these populations. The Client will present a plan along with any data collected by the first audit. A final report with associated analyses will be completed by the third surveillance audit.

Consultation

The Client have sent a letter to KamchatNIRO with the request of getting information about seal, sea lions rookeries in the mouth of the river, the historical quantities of the species.
There is some general historical information in KamchatNIRO Fishery Improvement Plan report. The experts had confirmed the presence of such information and showed their readiness to present this data to Client. The Client will be preparing the contract with the technical assignment to KamchatNIRO for the further research and calculation of seals, sea lions population in Ozernaya river mouth.

The clients have contracted with KamchatNIRO to provide technical expertise in completing actions required in the conditions (Appendix 3).

Condition 6

2.4.3. Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types.

SG 80

- The nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery.
- Sufficient data are available to allow the nature of the impacts of the fishery and enhancement activities on habitat types to be identified and there is reliable information on the spatial extent, timing and location of use of the fishing gear.
- Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).

There are insufficient data to detect any increase in risk to habitat associated with fishery-related alternation and development in the estuary. Information on fishing activities and activity effects are sufficient to identify any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures). However, it is unclear if existing data provides a sound basis for detecting any increase in risk to the habitat associated with existing dredging and fill activities or further development of portions of the estuary to support fishery infrastructure including boat harbor and processing facilities. Risks cannot be effectively detected without specific information documenting current baseline conditions and trends (e.g. habitat typing, spatial analysis, mapping, photogrammetry, historical information summary). In addition, changes in risk, associated with use of heavy equipment in the river bed to smooth the river bed and remove debris to enhance fishery operations, are difficult to detect based on existing information.

Condition 6. ***Provide sufficient data to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).***

By the first annual surveillance, the fishery client must present evidence that a plan is in place to address this condition.

By the second annual surveillance, the fishery client must present evidence that the plan has been implemented.

By the third annual surveillance, the fishery client must demonstrate the condition has been met.

Recommendation: Include documentation of annual in-water work activities, work periods, and the extent of affected areas.

Client Action Plan

The Client will work with Scannex, a Russian remote sensing company, or Goggle maps, WWF and the Wild Salmon Center to obtain satellite imagery of the mouth area of Ozernaya River (mouth to the bridge) to trace changes in habitat development.

The Client will hire a contract expert or work with a KamchatNIRO expert to establish a baseline profile of the river mouth (mouth to the bridge) – conduct channel typing, charting river topography and quantifying possible resting and passage habitat for adult salmonids and outmigrating juveniles.

Consultation

No consultation required. The client can conduct these actions.

Condition 7

3.2.3. Monitoring, control and surveillance mechanisms ensure the fishery and hatchery management measures are enforced and complied with.

SG 80

- A monitoring, control and surveillance system has been implemented in the fishery and enhancement activities under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.
- Sanctions to deal with noncompliance exist, are consistently applied and thought to provide effective deterrence.
- Some evidence exists to demonstrate fishers and hatchery operators comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery and its enhancement activities.
- There is no evidence of systematic noncompliance.

Uncertainty exists for compliance of the fishery with marine mammal protection regulations, especially possession of firearms on vessels and harassment of seals. No evidence of systematic noncompliance has come to the attention of the assessment team regarding monitoring, control, and surveillance activities in the freshwater portion of in this fishery. However, it is unclear whether monitoring, controlling and surveillance mechanisms are adequate to ensure that no fishing occurs outside of allocated parcels. Some questions have also been raised by under P2 regarding potential noncompliance with marine mammal protection regulations in the marine portion of this fishery. Specifically, this concerns possession of firearms on fishing vessels and use to harass or harm nuisance seals.

Condition 7. Provide evidence of systematic compliance.

By the first annual surveillance, the fishery client must present evidence that a plan is in place to address this condition.

By the second annual surveillance, the fishery client must present evidence that the plan has been implemented.

By the third annual surveillance, the fishery client must demonstrate the condition has been met.

Recommendation: Include monitoring to demonstrate that beach seines and set nets are always operated within legal fishing parcels.

Client Action Plan

The Client will work with Scannex or Goggle maps, WWF and WSC to obtain satellite image scans of the coastal area where the Client is fishing with set nets, to show that set nets are fishing in allocated parcels.

The client will work with WWF and the Wild Salmon Center to continue an independent observer program started in 2011 to monitor illegal, unreported, and unregulated fisheries in the river and coastal area.

The Client will set up a system of camcorders pointing at their freshwater parcels with appropriate reference markers, so that video footage from the camcorders could be used to judge the legality of in-river fishing operations and earthworks. The video from the camcorders will be recorded continuously during the fishing and earthworks operations and archived in a temper-proof manner, which will be brought to the Client's headquarters and preserved. A third-party expert will conduct spot checks using the footage to verify legality of in-river fishing operations and earthworks.

The Client will implement a company policy of prohibiting any firearms on boats and use of firearms to scare, injure, or kill marine mammals and birds. The Client will work with an independent third-party to establish a verification system that the policy is implemented and working.

Consultation

WWF and WSC experts are consulting the Client about companies, which can present such kind of satellite pictures, helps with finding of independent observers or presenting such kind of service by themselves. Both NGOs will organize spot checks by its experts within the fishing period in order to control earthworks.

The Client will supply camcorders, will make pictures within the fishing operations and earthworks. WWF and WSC experts will be ready to consult the Client or advise the names of the experts, who can make a scientific conclusion about earthworks ecosystem influence.

The clients have contracted with KamchatNIRO to provide technical expertise in completing actions required in the conditions (Appendix 3). WWF and WSC have agreed to work with the clients in achieving the conditions (Appendix 3).

Condition 8

3.2.4. The fishery and its related enhancement activities have a research plan that addresses the information needs of management.

SG 80

- A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
- Research results are disseminated to all interested parties in a timely fashion.

One and five year research plans are compiled by KamchatNIRO but have not been made available to the assessment team. A research program was approved by the Federal Agency for Fisheries in 2007. Its official name is "Far Eastern Basin program of complex investigation of Pacific salmon for period 2007-2012". This program addresses all the information necessary for effective fishery management of the directed fishery. Kamchatka fisheries are essential part of this program. However, without access to research plans it remains unclear where all questions related to MSC principles 1 and 2 are addressed in a comprehensive manner.

Condition 8. Provide research plan.

By the first annual surveillance, the fishery client must provide a research plan that provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's principle.

Client Action Plan

One and five year research plans will be provided in consultation with KamchatNIRO. Plans will address all research related to Ozernaya sockeye and related fisheries as well as other retained and bycatch species. Plans will include work identified and conducted by the research station at Kuril Lake.

Consultation

The Client will coordinate with KamchatNIRO to obtain and provide current one and five-year research plans. The clients have contracted with KamchatNIRO to provide technical expertise in completing actions required in the conditions (Appendix 3).

Condition 9

3.2.5. There is a system for monitoring and evaluating the performance of the fishery and hatchery management system against its objectives. There is effective and timely review of the fishery and hatchery management system. Monitoring, control and surveillance mechanisms ensure the fishery and hatchery management measures are enforced and complied with.

SG 80

- The fishery and its enhancement programs have in place mechanisms to evaluate key parts of the management system and are subject to regular internal and occasional external review.

The fishery and its enhancement programs have in place mechanisms to evaluate key parts of the management system are subject to regular internal but opportunities for occasional external review of the fishery are limited by the inconsistent availability of information outside the local governmental management system. Results of fishing season and effectiveness of management actions undertaken are discussed at the both management agencies such as AFC, SVTU and FAR, and also at Research Councils of fisheries institutes such as KamchatNIRO, TINRO-Center and VNIRO on a regular basis. However, information on run size, harvest by time and area, fishery management actions, and escapement is not typically reported outside the management system except in rare cases. Occasional publication of related information as in Bugaev et al. (2009) and Bugaev (2011) provides a historical perspective but will not allow a periodic opportunity for future management and performance reviews outside the management system.

Condition 9. Provide annual sockeye run and fishery monitoring and evaluation information.

By the first annual surveillance, the fishery client must develop an effective approach for providing annual fishery management information suitable for external parties (e.g. surveillance audit team) to review fishery performance against its objectives.

Recommendation: it is not necessary to provide propriety management system reports but information on annual run size, fishing effort and harvest by date and area, in-season fishery management actions, total escapement of early and late run components and daily escapement and harvest rate patterns across the season will be appropriate for the surveillance reviews.

Client Action Plan

Annual information on sockeye run size, fishing effort and harvest by date and area, in-season fishery management actions, total escapement of early and late run components and daily escapement and harvest rate patterns across the season will be provided at the time of surveillance reviews.

Consultation

The Client will prepare a letter to KamchatNIRO with the request of presenting data about sockeye. At the same time, Client will set up the contract with KamchatNIRO for providing this annual information. The clients have contracted with KamchatNIRO to provide technical expertise in completing actions required in the conditions (Appendix 3).

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Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	Yes	Conformity Assessment Body Response
Justification: The Ozernaya sockeye salmon fishery is a reasonably well-managed fishery and it meets MSC criteria for sustainability, given a number of conditions. There are some key issues, however, that I think should be considered further. High survival at sea has undoubtedly enabled Ozernaya sockeye to be very productive, but it is important to have a management system in place that will support a robust population when ocean conditions decline. Please see comments here and with regard to the client action plan. 1) Previous and recent escapement goals were apparently developed from spawner recruit relationships that were presented in the assessment. The current goal (1-2.3 million fish) is much lower than the previous goal (2.5-3.5 million). This large discrepancy needs to be evaluated further in a comprehensive review of the escapement goals for this watershed. The review should include more than the S-R relationship. Considerable data has been collected on sockeye in this watershed and it should be examined, including relationships between spawner abundances and growth, abundance, and age of juveniles and smolts emigrating from the watershed. Spawning habitat should be examined to determine whether how many spawners it might support. Can the spawning habitat support many more fish than the current 1-2.3 million goal? Although the goal was revised significantly downward, it is noteworthy that the observed escapement was less than the lower goal in two years (see Fig. 9), and most escapements were closer to the lower end of the range. The S-R relationship (Fig. 9) should be updated with new data that are available since the previous analysis in 2009. The comprehensive escapement goal report should be made available online and it should be peer-reviewed. This type of analysis would be very worthwhile for this valuable salmon fishery. 2) Fig. 10 indicated that there could be long periods of time within a season (2008, 2010) when few or no sockeye escapement the fishery. The current approach to daily management of escapement may not be protective of subcomponents of the overall sockeye population, which is known to include early and late runs. This problem needs to be addressed by inseason management and rectified. 3) Based on the references provided in the assessment, it does not appear that the fishery managers prepare annual management reports for Ozernaya sockeye salmon. These reports should be prepared each year		1) This comment affirms the assessment conclusion for Indicator 1.1.2 - the need for further evaluation of the escapement goal is identified in Condition 1. Additional clarification was added to the discussion regarding Condition 1 highlighting the utility of analysis of additional parameters. Data on stock-recruitment relationships presented in the Fig. 9 will be updated with newer information at the first surveillance audit under the action plan prepared by the client. Inclusion of return data from 2012 is expected to substantially improve the statistical basis for production curve analysis because it will include the majority of the return from the record 2007 escapement. A recommendation regarding publication and peer review of assessment results was added to condition 1. 2) This concern was addressed in the assessment of indicator 1.1.2 and the resulting condition 1. 3) Under the Russian system, annual management assessments are made for the internal use of government fishery managers but this information is not publically disseminated. While by law any Russian citizen can request information from the government, in practice the resources are not available to answer all such requests and there may be a substantial fee required to obtain information. However, information on annual run size, harvest, fishery management actions, and escapement will need to be provided for consideration in annual surveillance audits to ensure that nothing has changed in the prosecution of the fishery. This type of information is also necessary to meet the 80 scoring guidepost for performance indicator 3.2.5 related to mechanisms for at least occasional external review. Indicator 3.2.5 was rescored accordingly to highlight the need for annual information. This

so that the history of the run and knowledge gained each season can be readily passed along to people that will be managing the fishery and the sockeye population in the future. The annual management report should include numerous data tables that are easily updated each year, including the brood table, annual and daily catch by sector (river marine), annual and daily escapement, age composition, etc. Data collected on juveniles such as smolts should be reported. Text should briefly describe activities and characteristics of the fishery, especially unusual events. The report should be made available online.	score and condition is consistent with other recent salmon certifications including Iturup and Annette.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	***Mostly***	***Conformity Assessment Body Response***
Justification: Most of the conditions are reasonable, but please note concerns raised above in which additional information, analyses and actions are warranted.		Concerns address as per above.

If included:

Do you think the client action plan is sufficient to close the conditions raised?	**Partly**	**Conformity Assessment Body Response**
Justification: The assessment states that shooting of seals and sea lions by fishermen is a "common occurrence". These species are protected species, therefore there seems to be a significant failure in enforcement of existing regulations. The client action plan indicates that it will fix the problem by banning firearms on its own fishing operations. However, fixing the problem on the client fishing operations does not fully address the fishery-wide problem of killing protected species. Clearly, enforcement activities need to be improved. The action plan should extend to the entire fishery even though it involves companies that are not bound to the MSC certification process.		Only Steller Sea lions are formally protected in Russia being included in the Red List of species. Other seal species are available for commercial hunting, and moreover, allocated TAC is considerably underused because of degradation of hunting infrastructure. Implementation of the Client Action Plan will allow to quantify removal of seals due to salmon fishery, and to compare size removal with TAC and actual harvest. P2 applies only to the fishery under assessment, cumulative impacts from other sources of mortality are not considered..

General Comments on the Assessment Report (optional)

Some of the references were missing from the list. (addressed)

Sometimes the report mistakenly referred to Sakhalin Island. (addressed

Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
1.1.1	Yes	Mostly	NA	This indicator received a score of 90, indicating a high degree of certainty in the status of the stock. Fig. 8 shows that runs have been relatively large in recent years and that the current escapement goal (range) has been achieved in most years (below goal in 2 of 8 years). However, the escapement goal was revised significantly downward (from 2.5-3.5 million to 1-2.3 million fish) based on the recruitment curve. Recent escapements often fall closer to the lower range. The S-R analysis extends through the 2002 brood year; plans to update the analysis should be identified in the assessment (when will goals be revisited)? Is the lower escapement goal producing sufficient returns and harvests, and will it continue to do so when ocean survival declines? The report mentions that escapements exceeding 3 million have not recently occurred, yet Fig. 8 indicated 5 million sockeye escaped the fishery in the mid-2000s. While a score of 90 may be generous, a score of 80 is warranted.	This issue is addressed under Indicator 1.1.2 with a condition for demonstrating that the target reference point is consistent with with BMSY and maintains the inherent diversity and reproductive capacity of each stock subcomponent. The first PI 1.1.1, 80-scoring guidepost concerns a high liklihood that the stock is above the point where recruitment would be impaired. Stock-recruitment analysis conducted by the management system demonstrates that current escapement goals are clearly consistent with a very high level of productivity which can be expected to maintain recruitment at a high level even if the current objective range is at the lower end of BMSY. The 100-scoriung guidepost fo this indicator is distingushed from the 80 by a high degree of certainty. Because of the above concern, the assessment team concluded that a high degree of certainty standard was not achieved. The second PI 1.1.2, 80 scoring and 100 scoring guideposts concern the certainty that the stock is fluctuating around its target reference point. Escapement data indicates that this is clearly the case. A table of escapement data was added to section to section 3.5.3.

1.1.2	Yes	Yes	In part, see comments	Ideally, salmon runs are harvested in proportion to daily abundance. However, Fig. 10 indicates there are long periods of time each year when harvests are high and essentially no fish escape to the spawning grounds, e.g., in 2008, 2010. This figure suggests that some components of the run may be over harvested even though the minimum escapement goal is met. The condition identified by the assessement team is warranted. The S-R analysis suggests that the recent escapement goal range is likely to achieve BMSY under recent high ocean productivity. But the Assessment Team notes that this goal may not be sufficiently protective of the stock if ocean conditions decline, e.g., the previous escapement goal was much higher. The S-R analysis has not been updated for several years, therefore a condition to revisit this analysis is worthwhile. Given the long history of data collection in this watershed, the escapement goal analysis should incorporate all available data (e.g., juvenile growth data and spawning ground density data) in this assessement to determine a reasonable escapement goal range that encompasses good and poor ocean conditions. The Assessment Team noted that harvest rates were very high on average. This could be related, in part, to unaccounted escapement below the weir. Are these fish included in the escapement goal? Also, see comments under 1.1.1.	Ideally, all substocks of salmon in a run will be harvested in proportion to the productivity and capacity of the habitats utilized by the population or subpopulation. This outcome can be achieved without harvesting in in proportion to daily abundance as long as escapement target for specific stock components are achieved and the fishery does not consistently exert a selective pressure for specific components over an extended period of time. In practice, it is practically impossible to implement a proportional daily harvest rate strategy for salmon due to the dynamic and unpredictable daily run timing. The data for Ozernaya sockeye indicates that, in some cases the harvest is not proportional to daily abundance, but there is no clear tendency of increased loading on some temporal subcomponent. Thus loading is averaged across years. The assessment recognized substock concerns with a condition requiring demonstration that reference points are consistent with maintaining the inherent diversity and reporductive capacity of each stock component. The assessment team agrees with the suggestion that an updated stock-recruitment analysis should include a full suite of juvenile and habitat related analyses and added this to condition in the form of a recommendation
1.1.3	Yes	Yes	NA	No depleted stocks.	No response required
1.2.1	Mostly	Mostly	NA	The assessment is reasonable, except that the existing harvest strategy seems to allow long time periods of little or no escapement in some years such as 2008 and 2010 (Fig. 10). The harvest strategy should consider daily escapements as a means to sustain all component stocks. Given this issue, the score of 95 is high.	The fishery is managed to distribute escapements throughout the run and to fill tributary (early stock) and lake (late stock) spawning grounds. Daily escapement might be one approach to this objective but are not the only effective means to this end (See explanation for 1.1.2).

1.2.2	Yes	Mostly	NA	The assessement notes the problem of high daily harvest rates in some years such as 2008 & 2010, leading to little or no escapement for somewhat long periods (Fig. 10). It is not clear that rules are in place to allow escapement during all time periods.	2008 was a case where the later portion of the run was heavily fished after it was clear that escapement targets were achieved. In 2010, the opposite pattern was observed. The front part of the run was more heavily fished than the later part when harvest was reduced to meet minimum goals While less than ideal, temporal fishing patterns becomes a particular concern where they are consistently repeated on an annual basis. This is not the case for Ozernaya sockeye. Temporal patterns of exploitation across the run vary in response to annual differences in run timing, fish movement pattern and regulatory actions. An effective system of harvest control rules is clearly in place for Ozernaya sockeye. The issue is whether current escapement targets adequately protect early and late substock components. This question is addressed under indicator 1.1.2 with Condition 1
1.2.3	Mostly	Yes	Mostly	The assessment notes the potential for innaccurate data related to the offshore driftnet fishery and poaching in freshwater. The condition to improve the accuarcy of these data is worthwhile. Additionally, with regard to the offshore driftnet fishery, the method to estimate stock composition should be described. The assessment also notes that the fishing companies determine the biomass and numbers of harvested salmon. Past reporting by companies was reported to be underestimate harvests. Does the management system periodically check the reported harvested values? How do we know if these values are reasonably accurate?	Incentives for misreporting have been effectively eliminated after change of management system, in particularly cancelling the quota system and use Olympic system. The management system includes periodic inspections of the fishing plants to ensure compliance.

1.2.4	Mostly	Mostly	NA	As described, the assessment of Ozernaya sockeye status is good. The assessment indicates that the entire sockeye run is assessed, but I did not see information on sockeye spawning downstream of the weir and whether or not these spawners are included in the spawner recruit analysis. As noted above, all available data and information should be considered in the evaluation of spawning escapement goals, especially given the significant change in goals in the recent period. These data include spawner density estimates and relationships of juvenile growth, age at smoltification, and abundance in relation to spawner abundance, etc.	Indeed, there are spawning grounds of sockeye up to 5 km downstream of the counting weir. These spawning grounds are surveyed, but its size (and thus number of spawners)is very low in relation to the spawning habitat in the lake and lake tributaries.. In total. 26% of spawning grounds are situated in rivers, primarily those flowing into Kuril Lake. After hatching, the fry go to the Kuril lake. The assessment team agrees with the suggestion that an updated stock-recruitment analysis should include a full suite of juvenile and habitat related analyses and added this to condition in the form of a recommendation
1.3.1	Yes	Yes	NA	This approach is reasonable because the absence of hatchery sockeye salmon in this fishery improves the accuracy of data that are collected.	No response required
2.1.1	Mostly	No	NA	Table 5 indicates that 12.5 mt of char were captured in one river parcel in 2009. This seems like a tremendous catch of char, especially since other parcels also catch char. If this harvest level of char is correct, it seems that further assessment of char harvests is warranted.	The client acdtion plan for the condition on 2.1.3 will result in abundance trends for char and in analysis of the status. The assessment team will evaluate these results during surveillance audits. The available data suggest that fishery impacts are not significant when local Ozernaya populations of pink salmon and char are considered in the context of the regional distribution and abundance of these species, but the assessment team will re-evaluate this using the analyses from the client action plan for 2.1.3.
2.1.2	Mostly	No	NA	Table 5 indicates that 12.5 mt of char were captured in one river parcel in 2009. This seems like a tremendous catch of char, especially since other parcels also catch char. If this harvest level of char is correct, it seems that further assessment of char harvests are warranted.	The conditon for 2.1.3 is designed to determine changes in risk to char from the fishery. If the analysis determines that char are vulnerable, the assessment team will take appropriate action. The assessment team will monitor the results of the condition for 2.1.3 in this regard.

2.1.3	Mostly	Yes	In part	Some catch data was provided for retained species (other salmonids). Capture of steelhead was not mentioned. Steelhead are not abundant in Kamchatka but they are a highly desirable sportfish. The assessment team should verify that steelhead are not retained in this fishery, and include a reference. A condition was developed because harvest impacts on pink salmon and char was unknown. It is surprising no information on pink salmon escapement was available given that pink salmon support a large commercial fishery in western Kamchatka. The harvest of 12.5 mt of char in a single river parcel deserves more attention, and the condition is warranted.	Steelhead occur in western Kamchatka rivers throughout western Kamchatka and include a wide diversity of anadromous and resident life history types. Run timing is later than that of sockeye. The typically anadromous form is a stream maturing type which enters the rivers in fall, stays there in winter and spawns in the early spring (Savvaitova et al. 2000). Run timing begins in late August or early September and peaks in October. . See explanation for 2.1.2 regarding pink salmon and char. Pink salmon do not comprise a substantial portion of the salmon harvest or value in the Ozernaya River.
2.2.1	Yes	Yes	NA	Bycatch has been documented to some extent in the river and marine areas and it is fairly minor.	No response required
2.2.2	Yes	Yes	NA	Bycatch has been documented to some extent in the river and marine areas and it is fairly minor.	No response required
2.2.3	Yes	Yes	NA	Bycatch has been documented to some extent in the river and marine areas and it is fairly minor.	No response required

2.3.1	Mostly	Yes	No	A condition was developed because shooting marine mammals (protected species) is a "common occurrence" (p. 103). The action plan will likely reduce shootings on client vessels, but will apparently have no impact on operations by non-clients. This raises the question of whether MSC sustainable fishery practices must also be followed by non-clients operating in the same fishery. It seems that continued shooting by non-MSC clients would not be sufficient to pass this condition. Is shooting a protected species illegal? If so, why is enforcment insufficient to stop injury to protected species throughout the fishery? Can the assessment team verify that catch sampling is sufficient to verify that sturgeon are not captured in this fishery?	The MSC specifically limits P2 analysis to the fishery under assessment. The clients do not have responsibility for actions of other operators. Mammals are protected but are occasionally harassed or shot by fishermen. The available information indicates that this occurs at a low level, is not systematic, and fishermen generally comply. The condition is designed to assure that the client fishery meets the requirements and sets an example for other companies. Catch sampling is sufficient to evaluate retention and bycatch of significant species but it is not practical to document the incidence or lack thereof of rare species in the catch. Sturgeon are not expected to be particularly vulnerable to the passive trap net fishing gear and any that do find their way into traps would be released alive.
2.3.2	Partly	No	NA	The last item under SG80 may not be met because enforcement seems to be insufficient to prevent somewhat frequent shootings of marine mammals. A condition may be needed.	The occaisional rather than chronic incidence of harassment or take of seals and the robust population status of seals in the area indicates that enforcement efforts are currently effective.
2.3.3	Yes	Yes	No	The action plan will evaluate trends of pinnipeds in the area, but it does not appear to estimate numbers taken in the fishery (nets and shootings), as required.	Progress in addressing this condition will be evaluated by the surveillance team.
2.4.1	No	No	NA	The assessment report mentioned that fishing companies were allowed to manipulate the river substrate in order to fish more effectively, but this was not considered in this indicator.	The scoring for 2.4.1 explicitly address the manipulation of the bottom to make fishing easier (second paragraph of the justification) and determined that it met the first scoring issue of 2.4.1. The need for additional information regarding changes in habitat risks is addressed under PI 2.4.3 and condition 6.
2.4.2	Yes	Yes	NA	Fishing site preparation was discussed and considered here.	No response required
2.4.3	Yes	Yes	Yes	The collection of baseline habitat information is a good idea if there are plans to expand the fishery infrastructure in the estuary.	No response required

2.5.1	Yes	Yes	NA	The assessment is reasonable.	No response required
2.5.2	Yes	Yes	NA	The assessment is reasonable.	No response required
2.5.3	Yes	Yes	NA	The assessment is reasonable.	No response required
3.1.1	Yes	Yes	NA	The assessment text justified the score.	No response required
3.1.2	Yes	Yes	NA	The assessment text justified the score.	No response required
3.1.3	Yes	Yes	NA	The assessment text justified the score.	No response required
3.1.4	Yes	Yes	NA	The assessment text justified the score.	No response required
3.2.1	Yes	Yes	NA	The assessment text justified the score.	No response required
3.2.2	Partly	Partly	NA	The management system may not be implementing the precautionary principle given that escapement goals were revised significantly downward and recent escapements appear to be near the lower end of the goal range, or below it in two years. Although escapement goals are typically met, fishery management allows long periods when few sockeye escape the fisheries (Fig. 10). Fishery objectives may need to be refined in this regard to include daily escapement objectives. Thus, the fishery does not seem to demonstrate a high degree of sophistication in the descision making process, as concluded in the assessment.	Concerns requarding the definition of approriate escapement goals and fishing practices designed to protect run subcomponents is effectively addressed under P1. Current management practices are based on the best available information which indicates that escapement levels and practices are sustainable given the very high productivity of this stock reflected in the data. Effective precautionary management is practiced during the fishing season to accommodate uncertain run size and timing and ensure that escapement targets are met. Excellent annual monitoring data indicates that targets have been achieved every year for the last 13 years except in two years when goals were exceeded.

3.2.3	Yes	Yes	No	A condition was developed because fishermen sometimes shoot protected species such as pinnipeds. The action plan states that it will require the client's fishermen to not carry firearms. This action may not meet the intent of the MSC standards because it only applies to the client's fishing operations not the fishery in its entirety. What is needed is sufficient enforcement by the management system to ensure that marine mammals are not shot by any fishermen. If this cannot be achieved, then it implies that the enforcement system for the fishery is insufficient.	The MSC specifically limits P2 analysis to the fishery under assessment. The clients do not have responsibility for actions of other operators. It should also be noted that the fishery clients incuded in this certification currently account for half to two/thirds of the annual sockeye harvest from nearshore marine waters.
3.2.4	Yes	Yes	NA	Assessment of research is adequate	Note that scoring of this indcator has been revised downward due to the lack of availablity of research plans to the assessment team.
3.2.5	No	No	See comment	The assessment report indicates that there are reasonable monitoring efforts. However, it is not clear that management and monitoring is documented in annual management reports that assess each year's fishery. Documentation of findings in reports is an important part of sustainable fisheries management. These written reports are needed to document factors affecting the run, harvests and escapement each year. The annual reports should continually update data tables that document all key statistics, such as harvest by sector, escapement, age composition, smolt production, and daily harvest and escapement statistics. Reports should be made publicly available on a web page. Documentation of fishery management actions and fishery statistics is key to maintaining a sustainable fishery. None of the cited references seemed to be annual management reports. Production of annual or periodic management reports my need to be a condition of this fishery.	In season decisions about the fiishery are available from protocols of Anadromous Fish Commission. Under the Russian system, annual management assessments are made for the internal use of government fishery managers but this information is not publically disseminated. While by law any Russian citizen can request information from the government, in practice the resources are not available to answer all such requests and there may be a substantial fee required to obtain information. However, information on annual run size, harvest, fishery management actions, and escapement will need to be provided for consideration in annual surveillance audits to ensure that nothing has changed in the prosecution of the fishery. This type of information is also necessary to meet the 80 scoring guidepost for performance indicator 3.2.5 related to mechanisms for at least occasional external review. Indicator 3.2.5 was rescored accordingly to highlight the need for annual information. This score and condition is consistent with other recent salmon certifications including Iturup and Annette.

Any Other Comments

None

For reports assessing enhanced fisheries:

Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	**NA**	**Conformity Assessment Body Response:**
Justification: There is no enhancement of sockeye salmon in the Ozernaya watershed at this time.		

APPENDIX 2 PEER REVIEW 2

Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes**	**Conformity Assessment Body Response**
Justification: In the assessment report there is appropriate and convincing evidence of the compliance of the scoring to each criterion. Ozernovskaya salmon is the most studied species among Far East salmon. This greatly affects the choice of the strategy of exploitation of the stock allowing maintaining a population on a stable high-level abundance. There is some question in TRP and LRP justification in the range of 1-2.3 millions of spawners which maintains the stock on the level consistent with BMSY. It is not clear if there is enough amounts of fish for reproduction and to ensure the nutritional needs of wild animals and birds that depend on spawning of Sockeye salmon, especially when there is still pouching exists. Perhaps the evidence can be found in previously published scientific articles, but we would like to see in the report the information proving the sufficiency of this amount of spawners for reproduction and if it meets the nutritional needs for wild birds and animals feeding on Sockeye salmon. In addition, it is necessary to have materials in terms of existing poaching on the spawning grounds . It is not clear if they are using the pass days in July during early run of salmon. The absence of the pass days can cause the change of the inherent diversity due to overfishing of recruitments of early run, especially located to the northern area from certified unit. The information given in the report indicated insignificant harm to the ecological system by fishery. I agree with the conclusion of the assessment team that there is insufficient evidence of impact of fishery on the protected wild species and insufficient information to reduce the risk to habitat associated with the use of heavy equipment to improve the fishing operation on the river parcels. Materials used by the assessment team to make a conclusion about the organization and the effectiveness of the fishery management, compliance, and enforcement comply with the conclusions. The main conclusion of assessment team about the possible certification of this fishery is logical.		Indeed, there is no proof that the fishery removal of large amount of sockeye does not affect animals depending on them. It is because there is no scientific data on the Ozernaya river/Kuril lake ecosystem before large-scale fishery started. It is not likely that such publications can be found in the previously publish papers because such a search has been done by researchers of the reserve and KamchatNIRO. At the same time, we summarize available information in the report (p.31-32, 79). P. 22-23 of the report describes available information on poaching. According to official information, poaching in both river and Kuril Lake currently is on very low level. Similar conclusions can be obtained based on independent observer's report carried out last year (Blykshtein 2011). According to data from Kuril Lake reserve, there is no evidences of poaching in the spawning grounds in recent years. The situation with early spawning stock component is described on the p. 54-55. Uncertainties with this caused reduction of scoring down to 70 with a corresponding condition.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	**Yes**	**Conformity Assessment Body Response**
Justification: In the report all the necessary conditions are met for successful achievement of the score 80. Assessment team designed conditions for reference points which were required for the improvement. However, another condition should be to put for the client in order to determine the recruitments ratio of early and late run in the course of drift-net catches in the open sea and offshore zone at the beginning and the end of fishing season. The evaluation of this ratio is only possible with the use of genetic analysis.		While genetic analysis of drift net catch might be useful for improving estimates of the stock composition of this catch, the essential question in the assessment is whether adequate spawning escapements of both early and late run stock components are provided by inseason management. This issue is addressed under PI 1.1.2 by condition 1.

If included:

Do you think the client action plan is sufficient to close the conditions raised?	**Yes**	**Conformity Assessment Body Response**
Justification: The created plan is meeting the conditions for score of 80 and can be reached.		

General Comments on the Assessment Report (optional)

In total the report is full of facts, prepared very well, has lots of information about the state and the structure of the stock demonstrating the stability of the fishery, and a properly chosen management strategy allowing to maintain the abundance of population on a high level during a long period of time in spite of an intense exploitation. Regretfully, there is not enough information about how fishery affects the protected species, the influence of regulated escapement, and the information about pouching on the spawning ground. There are no facts (at least the latest 2-3 years) about how many pass days are there during Sockeye run, both within certified unit, as well as in adjacent areas. There is no data for the ratio recruitments of the early and later run in catch of drift-net fishery in high sea and offshore zone.

eview

Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
Yes	Yes	The assigned level of return of 1-2.3 millions to spawning areas allows to maintain the fish population according to the level of TRP or above its. But it is doubtful if this will happen in the future. It is mentioned in the report that this will be affected by a rare combination of conditions such as an earlier –than-normal run timing coupled with below-average marine survival. Filling of spawning groung by spawners may be below the level of LPR due to increased numbers of animals and birds that feed on Sockeye salmon in freshwater system. Condition may be needed.	The assessment team recognized this issue, which caused appearance of Condition 1. Fluctuations in number of animals and birds consiming salmon is one of factors which cause variation of parents-progeny relationship and is taken into account implicitely when making decisions based on shape of parent-progeny curve. Thus if the management meets MSY and follows the precautionary approach, salmon required for predator animals (if even variable) will be taken into account among other numerous factors causing variation of parent-progeny relationship.
Yes	Yes	There is no evidence of fishery that meets the score of 80.There is no information about fishery management and spawning fulfillment for early salmon run. Harvest of recruitments of early run with drift-net in high sea and offshore zone, especially there is not enough pass-days to the north of certification unit, may affect inherent diversity of the stock.	Driftnet removals are addressed in the Condition 2, and it will also include analysis of temporal stock components. The management system reports that the passing days are basically equally distributed along all the spawning migration period, although quite long periods without passing days occurred in the previous years (Fig. 10), i.e. there is no evidences available for the assessment team that number of passing days is not sufficient in the beginning of the migration. Moreover, according to KamchatNIRO reports, during

1.1.3	NA	NA	NA		No response required
1.2.1	Yes	Yes	Yes	Justification and score is adequate	No response required
1.2.2	Yes	Yes	Partially	There is unsertainty in explotation of different components in drift netting in the open sea and trap netting in northern area. Drift net fishery is done during the whole Sockeye run and it is difficult to evaluate every component of the stock in the catch. Evidently they may need to make special research, including genetic research (Principle 3) for full evaulation of that component. Condition may be needed for improve harvest control rules.	Driftnet removals are addressed in the Condition 2, and it will also include analysis of temporal stock components. After such analysis the need for genetic research will be easier to evaluate.
1.2.3	Yes	Yes	Yes	Justification and score are adequate	No response required
1.2.4	Yes	Yes	NA	Justification and score is adequate	No response required
1.3.1	Yes	Yes	NA	Justification is adequate	No response required
1.3.2	Yes	Yes	NA	Justification is adequate	No response required
1.3.3	Yes	Yes	NA	Justification is adequate	No response required
2.1.1	Yes	Yes	NA	Justification is adequate	No response required
2.1.2	Yes	Yes	NA	Justification is adequate	No response required
2.1.3	Yes	Yes	Yes	Justification and score is adequate	No response required
2.2.1	Yes	Yes	NA	Justification is adequate	No response required
2.2.2	Yes	Yes	NA	Justification is adequate	No response required
2.2.3	Yes	Yes	Yes	Justification is adequate Condition may be needed	No response required
2.3.1	Yes	Yes	Yes	Justification and score is adequate	No response required

2.3.2	Yes	Yes	Yes	Justification and score is adequate	No response required
2.3.3	Yes	Yes	Yes	Justification and score is adequate	No response required
2.4.1	Yes	Yes	Yes	Justification and score is adequate	No response required
2.4.2	Yes	Yes	Yes	Justification and score is adequate	No response required
2.4.3	Yes	Yes	Yes	Justification and score is adequate	No response required
2.5.1	Yea	Yea	NA	Justification is adequate	No response required
2.5.2	Yes	Yes	NA	Justification is adequate	No response required
2.5.3	Yes	Yes	NA	Justification is adequate	No response required
3.1.1	Yes	Yes	NA	Justification is adequate	No response required
3.1.2	Yes	Yes	NA	Justification is adequate	No response required
3.1.3	Yes	Yes	Yes	Justification and score is adequate	No response required
3.1.4	Yes	Yes	Yes	Justification and scores are adequate	No response required
3.2.1	Yes	Yes	Yes	Justification and score is adequate	No response required
3.2.2	Yes	Yes	NA	Justification is adequate	No response required
3.2.3	Yes	Yes	Yes	I agree with the conclusion of the assessment team about uncertainty existence for compliance of the fishery with marine mammal protection regulations. Justification and score is adequate.	No response required

3.2.4				The report stated that “A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2." However, I have not found information in the report about the conduct of genetic research of Ozernaya Sockeye salmon. These studies are necessary to ensure an effective strategy to use stock in accordance with MSC”s Principles 1 and 2 (consistent with MSC's Principles 1 and 2). This is important because only genetic analysis can help to determine the influence of drift-net fishing on the state of all components of the stock of sockeye salmon. Condition may be needed	Scoring of this indcator has been revised downward due to the lack of availablity of a research plan. A condition was added to address this need.
3.2.5					No response required

For reports assessing enhanced fisheries:

Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	**Yes/No** **Yes**	**Conformity Assessment Body Response:**
Justification: No hatcheries are operated in the Ozernaya basin.		No response required

APPENDIX 3 PUBLIC COMMENTS AND RESPONSES

MSC Comments on PCDR

MRAG Response to MSC Comments

Vityaz Avto Letter and Contract with KamchatNIRO

Translation of V-A Letter

WWF Letter

WSC Letter

Marine House
1 Snow Hill
London EC1A 2DH
United Kingdom
Tel: +44 (0)20 7246 8900
Fax: +44 (0)20 7246 8901

SUBJECT: MSC Review and Report on Compliance with the scheme requirements

Dear Ray Beamesderfer

Please find below the results of our partial review of compliance with scheme requirements.

CAB	MRAG Americas, Inc.
Lead Auditor	Ray Beamesderfer
Fishery Name	Ozernaya River sockeye salmon fishery
Document Reviewed	Public Comment Draft Report Posted

Ref	Type	Page	Requirement	Reference	Details	PI
TO.523	Guidance	125, 125	N/A		p. 124 - check formatting p.125 Peer reviewer's comment on 1.2.2 is in Russian	
TO.524	Guidance		N/A		Please ensure that scores are entered correctly. On p.88 it says the score for PI 3.2.2 is 90. In both scoring tables it says 100. The first and third scoring issue are redundant and can be removed from the table (refer to Policy Advisory 18 v1, 09/08/2010).	3.2.2
TO.525	Major		CR-V1.2-27.11.3	The CAB shall not accept a client action plan if the client is relying upon the involvement, funding and/or resources of other entities (fisheries management or research agencies, authorities or regulating bodies that might have authority, power or control over management arrangements, research budgets and/or priorities) without:	While past involvement by KamchatNIRO, WWF and Wild Salmon Center and other entities cited in the client action plan is well summarized under the consultation subheading, It is not clear whether such entities have agreed to commit their resources going forward.	

TO.516	Major	93	CR-V1.2-27.6.3	The CAB shall document the rationale for the target eligibility date and include an assessment regarding how the assessed risks to the traceability system in the fishery are adequately addressed by the applicant to give confidence in this date	There is no rationale for the target eligibility date	
TO.517	Major	92	CR-V1.2-27.12.1.2	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: The possibility of vessels fishing outside of the unit of certification.	It is not defined if the systems of tracking and tracing effectively control the risk of vessels fishing outside of the unit of certification. It is indicated earlier in the report (Page 13) that the fishing companies also fish in other rivers outside of the unit of certification and that location is recorded in their documents but is not specified how at landing they will identify or label the fish which are eligible.	
TO.518	Major	92	CR-V1.1-27.12.1.3	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products. The opportunity of substitution of certified with non-certified fish prior or at landing.	It is not defined how the systems of tracking and tracing control the risk of substution with fish from companies outside the unit of certification. This is identified as an area of risk on page 92.	
TO.519	Major	92	CR-V1.2-27.12.1.4	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: At-sea processing activities.	The report does not confirm if any processing occurs at-sea although it does specify that salmon caught by trap-nets is brought to shore by boat.	

TO.520	Major	92	CR-V1.1-27.12.1.5	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: Any transhipment activities taking place.	The report does not define if any transhipment takes place.	
TO.521	Major	92	CR-V1.1-27.12.1.6	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: The number and/or location of points of landing.	The points of landing are not defined in the report and it is not clear why or how they will be confirmed. Updating eCert will not make this information publically available and customers would need this information when purchasing. The report does not indicate what processing operations are carried out by the fishing companies that would need to obtain their own chain of custody certification. It is not clear if processors are part of the fishery certificate and if yes how chain of custody would be managed.	
TO.526	Guidance				Guidance specifies the unit of certification as: (G27.4.2.1) One or a group of vessels in the same fishery (a combination of stock(s)/gear/practice) is the unit of certification. It is suggested that some justification is provided as to why two gear types are included within one unit of certification.	

This report is provided for action by the CAB and ASI in order to improve consistency with the MSC scheme requirements; MSC does not review all work products submitted by Conformity Assessment Bodies and this review should not be considered a checking service. If any clarification is required, please contact Megan Atcheson on +44 (0) 20 7246 8978 for more information.

Best regards,
Dan Hoggarth
Fisheries Oversight Director
Marine Stewardship Council

cc: Accreditation Services International

Response of MRAG Americas to comments of the MSC for Ozernaya River

Sub Reference	CAB Response
TO.523	The formatting has been corrected; The paragraph in Russian did not get deleted by the peer reviewer after translation, but has now been deleted.
TO.524	The score on the scoring table has been corrected to 100 as the fishery met the second and fourth scoring issues (the first and third are redundant). This makes the coring table consistent with the summary tables.
TO.525	MRAG Americas received a letter from Viyaz-Avto stating that the client group companies have a contract with KamchatNIRO for support in meeting the conditions – see Appendix 3. MRAG has a copy of the contract. MRAG Americas has also received letters of commitment from Wild Salmon Center and WWF for support in meeting the conditions – see Appendix 3.
TO.516	The Final Report notes that the target eligibility date corresponds to the beginning of the 2012 fishing season.
TO.517	The Final Report specifies that fish from the client group's operation on the Opala and Bolshaya Rivers do not get shipped to the companies processing plants at Ozernaya because of transportation difficulties, the federal requirement to have processing in the proximity of leases, and the fact of company-owned processing at the other rivers. In the unlikely case that fish from the other rivers were shipped to Ozernaya, landing documents required by the federal government would uniquely identify the fish as other than Ozernaya, and therefore not eligible for certification. The company would commit to labeling the uncertified fish as such.
TO.518	The Final Report specifies that the client group companies do not buy fish from other companies. Federally-required documentation would clearly show the origin of non-client group fish as such at the time of landing. Should the companies change this policy, the company would commit to labeling non client group fish as uncertified and completely segregate those fish during movement through the processing plant.
TO.519	The Final Report states that processing does not occur at sea. All fish are landed fresh and intact at the processing plants.
TO.520	The Final Report states that transshipment does not occur. All fish are landed fresh and intact at the processing plants.
TO.521	The Final Report contains a list of fishing parcels on which the client group is authorized to fish. MRAG will update the list on the MSC web site and through e-cert if changes in authorized parcels should occur in the future.
TO.526	See Section 1 for a statement justifying the single unit of certification.

MRAG Americas
Бобу Трамблу

Компания ООО «ВИТЯЗЬ-АВТО» и ООО «Дельта» планирует дальнейшее сотрудничество с КамчатНИРО, на основании технического задания по сопровождению процесса сертификации MSC. Договор за 2012 год прилагается.

Рыба, выловленная на реке Опала и реке Большая, транспортированию на заводы ООО «ВИТЯЗЬ-АВТО» и «Дельта» расположенные в поселке Озерновском не производится. Переработка осуществляется на заводах в близи этих рек.

С уважением,

Генеральный директор
ООО «ВИТЯЗЬ-АВТО»
ООО «Дельта» _____ Тарасов А.А.

To: Bob Trumble

MRAG Americas

Fishing companies Vityaz-Avto Co., Ltd, and Delta Co. are planning to continue further relationship with KamchatNIRO institute for MSC certification process guidance on a fishing season basis. As an example, see attached contract.

The fish caught in Opala and Bolshaya rivers is not transported to the processing plants of Vityaz-Avto Co., Ltd, and Delta Co. in Ozernovsky town. The processing of fish from Opala and Bolshaya is going on at the processing plants locating on those rivers.

Sincerely,

Tarasov A.A.

General director

Vityaz-Avto Co., Ltd,

Delta Co.

ДОГОВОР №01/12- Н

На проведение научно – исследовательских работ и создание (передачу) научно-технической продукции

г. Петропавловск-Камчатский «26» апреля 2012 г.

Общество с ограниченной ответственностью «Витязь-Авто» (ООО "Витязь-Авто"), именуемое в дальнейшем **"Заказчик"**, в лице Генерального директора Тарасова Александра Александровича, действующего на основании Устава, и **Федеральное государственное унитарное предприятие "Камчатский научно-исследовательский институт рыбного хозяйства и океанографии" (ФГУП «КамчатНИРО»),** именуемое в дальнейшем **"Исполнитель",** в лице И.о. директора Науменко Николая Ивановича, действующего на основании Устава и приказа 17.04.2012 № 191, с другой стороны, вместе именуемые «Стороны», заключили настоящий Договор о нижеследующем

:

1. ПРЕДМЕТ ДОГОВОРА

1.1.Заказчик поручает, а Исполнитель принимает на себя выполнение Работы по теме: **«Научное сопровождение процесса сертификации MSC ООО «Витязь-Авто»**

1.2. Срок действия договора: **26.04.2012- 31.05.2012 г.**

1.3. Приёмка и оценка научно-технической продукции осуществляется в соответствии с установленными требованиями.

1.4. Использование научно-технической продукции осуществляется Заказчиком.

2. СТОИМОСТЬ РАБОТЫ И ПОРЯДОК РАСЧЕТОВ

2.1. За выполненную по настоящему Договору Работу Заказчик перечисляет Исполнителю в соответствии с Протоколом соглашения о договорной цене на создание научно – технической продукции (Приложение №1 к Договору) **59 000,00 (пятьдесят девять тысяч рублей 00 коп.) рублей, в том числе НДС 9 000,00 (девять тысяч рублей 00 коп.) рублей.**

2.2 Оплата за выполненные работы согласно настоящему Договору производится в течение 5 дней с момента подписания акта сдачи-приемки научно-технической продукции.

2.3. В случае досрочного выполнения работ Заказчик вправе досрочно принять работы.

3. ПОРЯДОК СДАЧИ И ПРИЕМКИ РАБОТ

3.1. Сроки окончания работ по настоящему Договору определяются в соответствии с п.1.2. настоящего Договора.

3.2. При завершении работ Исполнитель представляет Заказчику акт сдачи-приёмки научно-технической продукции.

3.3. Заказчик в течение 5 дней со дня получения акта сдачи-приёмки работ и отчетных документов, настоящего договора, обязан направить исполнителю подписанный акт сдачи-приёмки научно-технической продукции.

3.4. Право собственности на результат работ переходит Заказчику с момента подписания акта сдачи-приемки обеими сторонами.

4. ОТВЕТСТВЕННОСТЬ СТОРОН

4.1. Риск случайной невозможности исполнения договора на выполнение научно-технических работ несет Заказчик (основание ч. 3 ст. 769 ГК РФ)

4.2. Исполнитель обязан своими силами и за свой счет устранить допущенные по его вине в выполненных работах недостатки, которые могут повлечь отступление от технико-экономических параметров, предусмотренных в задании Заказчика (основание ст. 773 ГК РФ).

4.3. Все споры, вытекающие из данного Договора, подлежат урегулированию путем переговоров, а в случае не достижения согласия разрешаются Арбитражным судом Камчатского края.

4.4. В случае несвоевременной оплаты работ Заказчик уплачивает Исполнителю неустойку в размере 1/300 ставки рефинансирования ЦБ РФ, за каждый день просрочки платежа.

5. ЗАКЛЮЧИТЕЛЬНЫЕ УСЛОВИЯ

5.1. Все изменения и дополнения к настоящему Договору действительны в том случае, если они оформлены в письменной форме и подписаны полномочными представителями сторон.

5.2. Отношения по настоящему Договору считаются законченными после выполнения сторонами взаимных обязательств, подписания акта сдачи-приемки выполненных работ и полного проведения расчетов между ними.

5.3 Настоящий Договор вступает в силу с момента подписания и действует до выполнения Сторонами своих обязательств.

5.4 Настоящий Договор составлен и подписан в двух экземплярах – по одному для каждой Стороны, каждый экземпляр идентичен и имеет одинаковую юридическую силу.

1-ый экземпляр – Заказчику.

2-ой экземпляр – Исполнителю.

5.5. Все приложения к настоящему Договору являются его неотъемлемой частью.

ЮРИДИЧЕСКИЕ АДРЕСА СТОРОН

Заказчик:

ООО "Витязь-Авто"

Юридический адрес: Россия, 683032, г. Петропавловск-Камчатский, ул. Степная, 5.
Почтовый адрес:683031, г. Петропавловск-Камчатский, ул. Топоркова, 9Б.
тел.(4152) 28-05-38 факс 28-06-94, 28-07-48, 28-05-31
ОГРН 1024101019865, ИНН 4101081250, КПП 410101001.
р/с 40702810600510000505 в Филиале ОАО Банк ВТБ г. г. Петропавловск-Камчатский
к/с 30101810000000000804, БИК 043002804

Исполнитель:

ФГУП «КамчатНИРО»

Юридический и почтовый адрес: 683000, г. Петропавловск-Камчатский, ул. Набережная, 18, т. 8(4152) 421- 956 , тел/факс (415-2) 41-27-01
ИНН 4101003277, ОКПО 00472101, КПП 410101001
р/с 40502810507080000003 в ОАО Камчаткомагропромбанк
г. Петропавловск-Камчатский, к/с 30101810300000000711, БИК 043002711

От Заказчика

Генеральный директор
ООО " Витязь-Авто "

_____ / А.А Тарасов

От Исполнителя

И.о.директора ФГУП "КамчатНИРО"

_____ / Н.И. Науменко

Приложение № 2
к договору № 01/12-Н от 26 апреля 2012.

СМЕТА ЗАТРАТ

на создание (передачу) научно-технической продукции

по теме: «Научное сопровождение процесса сертификации MSC ООО «Витязь-Авто»

№	Наименование статей расхода	Всего, руб.
1	Материалы	9 000,00
2	Фонд оплаты труда (ФОТ)	20 000,00
3	Отчисление на социальные нужды	6 040,00
5	Накладные расходы	12 960,00
6	ИТОГО: себестоимость	48 000,00
7	Прибыль	2 000,00
8	НДС	9 000,00
9	ВСЕГО: договорная цена	59 000,00

И.о.директора ФГУП «КамчатНИРО» **Н.И. Науменко**

Гл. экономист **В.П. Смирнова**

Приложение №1
к договору № 01/12-Н от 26 апреля 2012 г.

ПРОТОКОЛ

соглашения о договорной цене на научно-техническую продукцию

г. Петропавловск-Камчатский «26» апреля 2012 г.

Тема: **«Научное сопровождение процесса сертификации MSC ООО «Витязь-Авто»**

по договору **№ 01/12-Н** от 26 апреля 2012.

Мы, нижеподписавшиеся, **Генеральный директор ООО " Витязь-Авто " Тарасов А. А.**, действующий от лица Заказчика, и **И.о. директора ФГУП "КамчатНИРО" Науменко Н.И.,** действующий от лица Исполнителя с другой стороны, удостоверяем, что сторонами достигнуто соглашение о величине договорной цены на выполнение (передачу) научно-технической продукции **59 000,00 (пятьдесят девять тысяч рублей 00 коп.) рублей, в том числе НДС 9 000,00 (девять тысяч рублей 00 коп.) рублей.**

Настоящий протокол является основанием для проведения взаимных расчетов и платежей между Исполнителем и Заказчиком и относится к предмету договора.

От Заказчика

Генеральный директор
ООО " Витязь-Авто "

_____ / **А.А Тарасов**

От Исполнителя

И.о. директора ФГУП "КамчатНИРО"

_____ / **Н.И. Науменко**

ФГУП "КамчатНИРО"

Адрес: 683000, Камчатский край, Петропавловск-Камчатский, Набережная, д. 18, тел.: 42-33-95

Образец заполнения платежного поручения

ИНН 4101003277	КПП 410101001		
Получатель ФГУП "КамчатНИРО"		Сч. №	40502810507080000003
Банк получателя		БИК	043002711
ОАО "КАМЧАТКОМАГРОПРОМБАНК" Г.ПЕТРОПАВЛОВСК-КАМЧАТСКИЙ		Сч. №	30101810300000000711

СЧЕТ № 41 от 26 Апреля 2012 г.

Заказчик: ООО "Витязь -Авто"
Плательщик: ООО "Витязь -Авто"

№	Наименование товара	Единица измерения	Количество	Цена	Сумма
1	За НИР по теме"Научное сопровождение процесса сертификации MSC ООО "Витязь -Авто"	шт	1	50000-00	50000-00
				Итого:	**50000-00**
				Итого НДС:	**9000-00**
				Всего к оплате:	**59000-00**

Всего наименований 1, на сумму 59'000.00
Пятьдесят девять тысяч рублей 00 копеек

Руководитель предприятия_____ (Лапшин О.М.)

Главный бухгалтер_____ (Руденко Н.Н.)

WWF for a living planet®

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ru

Dr. Robert Trumble
MRAG Americas
St. Petersburg, Russia
Dear Dr. Trumble,

02 08 2012

Dear Bob,

I would like to inform you about our plans regarding MSC certification work in Kamchatka. As you know, Kamchatka – Bering sea ecoregional office of World Wildlife Fund takes an active part in two Kamchatka fisheries (Vityaz-Avto Co., Ltd and Delta Co., Ltd) MSC certification. From the early beginning, WWF was assisting companies in pre-assessment, full certification and Chain of Custody certification. WWF officers worked in a very close contact with the head of the companies.

Now, at the final stage of these fisheries full assessment, WWF intends to continue work with these fisheries on improving fishers' practices according conditions, which were set up by the certification team. As stakeholders, we feel responsibility for controlling actions of fishermen, which took a decision to be MSC-certified. We hope that these companies' actions for sustaining their fisheries will be in accordance with principles and goals, which WWF is supporting all over the world. We plan to continue assisting and giving advices to fishers – how to be in complains with MSC principles and standards. We also have a plan to create a system of independent observers, who will be working on their rivers. Today, WWF representative is officially included into Chain of Custody internal audit commission of both fisheries.

All these activities are included in WWF 5-year strategic plan.

Best regards,

Konstantin Zgurovsky,

Marine Program Coordinator

WWF-Russia

WWF *for a living planet*®

July 31, 2012

Dr. Robert Trumble
MRAG Americas
St. Petersburg, Russia

Dear Dr. Trumble,

I am writing in regards to the potential Marine Stewardship Council (MSC) certification of the Ozernaya sockeye fishery operated by Vityaz Avto and Delta fishing companies. Wild Salmon Center will continue to provide technical support to the fisheries post certification to help them address conditions identified in the certification report. We are in the process of concluding a formal agreement with the fishing companies to this end.

The Ozernaya sockeye fishery is one of the world's pre-eminent wild salmon fisheries and we plan to continue to support the conservation and sustainable use of this vital natural resource.

Please let us know if you have any questions.

Best regards,

Brian Caouette
Wild Salmon Center

INTERNATIONAL HEADQUARTERS
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