

**WHALE MONITORING BY OTHER GROUPS**

**Towards planning and implementation of the marine protected area for Western Pacific Gray whale protection off North-eastern Sakhalin**

**Submitted by WWF-Russia**

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***Abstract***

In this presentation a revised concept for the marine protected area (nature reserve or *zakaznik*) in the coastal waters of North-eastern Sakhalin is presented. This reserve may play a role in the protection of characteristic lagoon and shallow marine ecosystems, critically endangered Western Pacific Gray whales, and concentrations of marine mammals and water birds. The boundaries, regime and steps for development of the reserve are discussed.

## **Introduction**

Conservation of the critically endangered Western Pacific Gray whales became recently the focus of efforts of several conservation and scientific organizations and individual experts, both at the national and international level. Summer feeding grounds of the Western Pacific Gray whales off North-eastern Sakhalin overlap with offshore oil and gas development areas. Current offshore oil and gas development, in particular the projects “Sakhalin-1” and “Sakhalin-2” along with other antropogenic factors operating at the scale of the species range poses several actual and potential threats for Gray whale survival (Reeves et al., 2005). In the course of the long process of consultation between the Sakhalin Energy Investment Company (thereafter Sakhalin Energy, the operator of the “Sakhalin-2” project, the biggest one in Sakhalin) the lenders consortium lead by the European Bank of Reconstruction and Development and other stakeholders it was agreed to establish a special consultative group to advise Sakhalin Energy and other offshore operators with regard to research, monitoring and mitigation measures for Gray whales. Following the Lenders’ Workshop in Vancouver in September 2005, IUCN received and agreed to a request by Sakhalin Energy to convene the Western Gray Whale Advisory Panel (WGAP). All previous expert panels and recently WGAP provided a set of recommendation to Sakhalin Energy and other stakeholders which the offshore operators may either follow or not. Even assuming that Sakhalin Energy follows the recommendation, there is no guarantee that other stakeholders do the same. WWF believes that next step in securing conservation of Western Pacific Gray whales should be taken by the Russian governments which has a legal obligation to take all necessary administrative and legal measures to protect a critically endangered population listed in the IUCN Red List and in the Red Data Book of Russian Federation. The best legal mechanism to strengthen Western Gray Whale protection and go beyond very general provisions containing in the Law of the Russian Federation “On the Animal World” is to establish a marine protected area (MPA) which regime fully accounts and addresses the recent knowledge about Western Pacific Gray whale population and factors threatening it. Recent measures taken by the Russian authorities with regard to environmental law violations in the “Sakhalin-2” indicate preparedness of the authorities to consider the marine protected area issue. In the present paper we discuss the history of attempts to design and implement the whale reserve off North-eastern Sakhalin, current situation, Russian legislation and the data available for optimal reserve planning. Furthermore we propose an updated reserve concept and a preliminary description of the boundaries, regime, and management approach for this new MPA.

## **History**

Initial concept of the reserve for protection of the Western Pacific Gray on their feeding grounds off North-eastern Sakhalin was proposed by Vladimirov (1999). Few years later the reserve concept was revised by WWF Russia (Spiridonov, 2001), discussed and reviewed by the Interdepartmental Ichthyological Commission. In 2002 the reserve proposal was forwarded to the Prime-Minister M.M. Kasyanov by A.N. Greshnevikov, the vice chair of the Committee for Environment of the State Duma. The Government forwarded it to the Ministry of Natural Resources ordering to agree the issue with relevant authorities and prepare necessary official documents. The comments of relevant authorities followed. The Federal Border Service responded positively.

The State Fisheries Committee sent two letters which were not totally consistent with the Committee’s competence, e.g. fisheries resources and fisheries interests. The first response pointed to difficulties, which would arise with fulfillment of Russia’s obligations in the production share agreements. The second letter also did not accept the idea of the reserve but

referred to another reason: the fishery (sic!) science did not have data indicating a negative impact of offshore oil and gas operations on Gray whales off Sakhalin. The Governor of Sakhalin Igor Farkhutdinov also responded to the Ministry of Natural Resources and explained the concerns of the Sakhalin Administration with the obstacles imposed to the development of the “Sakhalin-1” and “Sakhalin-2” projects with regard to creation of the reserve. The letter retold information on “skinny” whales and pointed to the uncertain reasons for this unhealthy state. Mr. Farkhutdinov emphasized the necessity of further research and the importance of developing a federal programme for their monitoring. Ministry of Energy argues against the reserve declaring that existing regulation is sufficient to mitigate negative impact of offshore operations. The negative responses reflected a general view of that time on the production share agreement projects such as “Sakhalin-1” and Sakhalin-2” as a “holy cow”. Representatives of the Ministry of Natural Resources repeatedly said at various occasions (i.e. press-conferences) that the reserve issue is not closed but no official attempts to agree conflicting views of different authorities were made. Re-organisation of the Ministry in 2004 slowed down the process considerably but in October 2005 the deputy minister of natural resources V.G. Stepankov confirmed in the letter to WWF Russia director I.E. Chestin that the Ministry is ready to come back to consideration of the Sakhalin marine reserve issue if the proposal package would be re-arranged according to changed regulation.

In the meantime the development of the “Sakhalin-2” progressed and new data on Gray whales, associated biodiversity, impacting factors and threats were collected. This caused new revision of the reserve proposal in order to make it better grounded and to achieve its approval and implementation.

### **Data sources**

To design a marine protected area off North-eastern Sakhalin the following data have been used.

Most of Western Gray whale distribution data obtained by both independent research groups and researchers contracted by oil and gas companies during the last years of investigations and prior to 2005 have been reviewed by Reeves et al. (2005).

Distribution of feeding whales records with regard to depth and distance from the shore (Figs 1, 2) was studied during three expeditions organized by WWF Russia in 2004 -2006 (Spiridonov et al., 2005, 2006).

Data on oceanography, benthic communities and whale feeding sites are contained in the reports by the Institute of Marine Biology which conducts regular survey in the coastal waters of North-eastern Sakhalin since 2001 (Fadeev, 2002 – 2006). The environment and benthic communities of the Piltun Lagoon are described by Kafanov et al., 2003.

The species list of water birds have been compiled by Emelchenko (unpublished) on the basis of observations during WWF expedition of 2005 and literature sources.

Fish species list is currently under preparation.

### **Russian legislation on specially protected nature areas**

Legislation of the Russian Federation which on the environment, biodiversity, protected nature areas and endangered species is largely influenced by terrestrial conditions. The Federal Law “On the Animal World” (of 24 April 1995, # 52FZ) provides some background for creation of protected nature areas in the areas of occurrence of endangered species. The Law “On the Specially Protected Nature Areas” (of 14 March 1995 # 33FZ) establishes

categories of specially protected nature areas which may be created. Of particular interest is the category of *zakaznik* (that may be translated as “nature reserve”). Article 22 of this Law says that the state nature *zakazniks* are territories (aquatories, i.e. areas of continental waterbodies or the sea) which have a particular importance for maintenance or recovery of natural complexes (systems) or their components and maintenance of ecological balance. *Zakazniks* may be created either with exclusion of land from other type of use or without this exclusion (Para 2). This paragraph means that economic activity in the *zakaznik* is not necessarily excluded and the regime may be rather flexible and allowing adaptive management. The Law “On the Continental Shelf” (of 30 November 1995 # 187FZ) extends the right of the Russian Federation to establish several kinds of specially protected nature areas, including *zakazniks* over the continental shelf (Article 26). It follows from this Law and the Law “On the internal marine waters, territorial sea and the adjacent zone” (of 31 July 1998 # 155FZ) that marine *zakazniks* have to be federal nature protected areas established by the Government of the Russian Federation. New technical regulation for planning and approval of *zakazniks* has been recently adopted by the Ministry of Natural Resources of the Russian Federation.

### **Reserve concept**

The proposed marine nature reserve or *zakaznik* should meet several criteria applied for planning of protected areas. First the reserve should include habitat and ecosystems both characteristic and unique for a particular bioregion. Secondly, the reserve should maintain functional integrity of the ecosystem under protection and its productivity. Thirdly, the reserve has to protect a set of important biodiversity features, including populations of vulnerable and endangered species. And, the last but not the least the reserve should be manageable and set a framework for long term environmental and biodiversity monitoring.

We view the reserve as part of the integrated system of MPA which is now in process of planning. The process of planning is based on the hierarchical system of bioregions proposed by Ivanov (2003) which currently serves as a framework for selection of potential MPA according to the criteria of representation, uniqueness, diversity and productivity (WWF Russia, work in progress).

For the North-eastern Sakhalin region (characterized primarily by the lagoon coast) representative MPA should include both the lagoon and shallow shelf biotopes. Combining the Piltun Lagoon, the largest lagoon of East Sakhalin with its diverse benthic biotopes (Kafanov et al., 2003) and Gray whale feeding area along the Piltun and the Astokh spits separating the Piltun Lagoon (Fig. 1) from the Sea of Okhotsk (thereafter the Piltun area) would fit the representation criteria. Seabed of the coastal zone adjacent to the Piltun spit is composed of the fine (0.1-0.25 mm) and medium (0.25 – 0.5 mm) grain sand, with dominance of the former at depth shallower than 20 m (Fadeev, 2002). This shallow highly dynamic habitat influenced by strong tidal current and wave action houses a highly characteristic for the coastal zone of North-eastern Sakhalin community of mobile seston feeders, mostly amphipod crustaceans. It is physically structured and stabilized by the polychaets (*Onuphis shirikishinaiensis*) tubes which create conditions for habitation of other taxa in the high energy environment. The dominant (in terms of biomass) taxa are bivalves and amphipods. This community provides the basic feeding resources for Gray whale. Further offshore (at depth below 20 m) benthic community becomes dominated by the flat sea urchin called “sand dollar”, *Echinarachnius parma* (Fadeev, 2002). In contrast to the amphipod dominated community the sand dollar community is common elsewhere in the Sea of Okhotsk (Shuntov, 2001). To the south of the Piltun area and east of Chaivo Bay at depth usually exceeding 40 m so called offshore whale feeding area. It is characterized by

patches of benthic community dominated by the ampeliscid amphipods (Fadeev, 2004, 2005, 2006). It has to be included in the reserve as a separate unit.

The lagoon and the adjacent coastal waters of the Sea of Okhotsk maintain permanent exchange of energy, organic matter and populations. The lagoon influences oceanographical regime of the marine coastal probably contributes with export of organic matter to productivity of the shallow water marine ecosystem supporting whales. Migration of fish and large benthic invertebrates in and out of the lagoon may have a profound effect on integrity of the large scale coastal ecosystem and its productivity.

Western Pacific Gray whales feeding concentrations are globally recognized but they are not the only distinguishing biodiversity features of the North-eastern Sakhalin waters to be protected by the reserve. The coastal waters of the Piltun area house remarkable diversity of marine mammals. Orcas and beluga whales are rather common there. Near the mouth of the Piltun Lagoon one of the largest in Sakhalin larga seal rookeries is located (Trukhin, 2005).

In general the inshore waters and lagoons of North-eastern Sakhalin are considered as wetlands of global importance because of their significance as stopover and nesting areas for gulls, waterfowl, and wadders. They are recommended to be included in the Ramsar Convention List (Zykov et al., 2000). Total number of water and coastal birds nesting or migrating along the coastal zone in the Piltun area amounts to 133, with 4 species listed in the IUCN Red List and 9 species listed in the Red Data Book of the Russian Federation (Emelchenko, unpublished). In particular, the coastal zone along the Piltun and the Astokh spits are known for abundant feeding and moult concentrations of marine ducks. In particular these are the greatest concentrations of the Asian subspecies of white-winged scoter, *Melanita deglandi*. According to some estimates (Poyarkov, Rozanov, 1998) their number may be as high as 35-40 thousand (about 5% of the total population). Wrangel Islands in the Piltun Lagoon house a big colony of the Aleutian stern, a species listed in the Red Data Book of the Russian Federation. Ornithologists working in WWF Expedition in 2005 discovered large migration concentrations of Baikal Teal (*Anas formosa*; listed in the IUCN Red List) mostly occupying the north-eastern coastal zone of the Piltun Lagoon and the area around Wrangel Islands (Emelchenko et al., in press). This species became rare in Sakhalin and needs special protection which the reserve can partly guarantee.

### **Reserve boundaries**

Ideally a manageable MPA in the coastal zone incorporates interlinked onshore and offshore components. For the Piltun area inclusion of the Piltun and Astokh spits is thus preferable. The spits themselves are important habitats for waterfowl nesting and stopover. However, from the implementation standpoint the attempts to include land may cause long-lasting discussion and possible conflict with land users, in particular with the “Sakhalin-1” project which implies construction of the onshore infrastructure needed for the development of the Odoptu field on the Piltun spit (Fig. 3) but also with other user, i.e. the Okha Hunters Society.

Therefore we suggest only marine areas to be included in the reserve. From the legal standpoint this means that the *zakaznik* covers both the internal marine waters (Piltun Lagoon) and territorial sea (coastal waters of the Sea Okhotsk where whale feeding grounds are located). According to the Federal Law “On the internal marine waters ...” the shoreward boundary of the reserve should be the maximum low tide line.

The offshore boundary in the Piltun area has to cover the whale feeding area. Our theodolite observations in the years 2004 – 2006 (Spiridonov et al., 2005, 2006) indicated that more than 90% of feeding whales records concentrated inside 20 m isobath (Fig. 1, 2).

These data can be biased because of poorer ability of detection whales at greater distance. They indicate, however, that considerable fraction of feeding whales in the Piltun area are concentrating very close to the shore.

Whale feeding sites were studied in the Piltun area by the expeditions of the Institute of Marine Biology (IMB), Far Eastern Branch of Russian Academy of Sciences (Fadeev, 2002 – 2005). In 2001 all the feeding sites fell over the 6-13 m depth range on fine sand sediments, inhabited by the amphipod dominated community (Fadeev, 2002). Due to different methods used for location of feeding sites (either from the board of a research vessel or a zodiac boat used for whales photo identification work) the records were sometimes biased towards greater depth. In particular, the average depth of the whale feeding sites inspected in 2004 was  $23.5 \pm 0.9$  m, which differs substantially from the data for 2003 –  $18.6 \pm 1.6$  m – and 2002 –  $19.5 \pm 1.5$  m (Fadeev, 2005). In 2005 the IMB researchers used only zodiac-based positioning of feeding sites. The data (Fadeev, 2006: fig. 28) indicate the presence of two groupings of feeding whales in the northern part of the Piltun area: a near-shore, shallow-water grouping (feeding depths up to 15-20 m), and a deep-water grouping (feeding depths of 20-30 m). The average depth for all feeding sites in 2005 was  $18.5 \pm 1.1$  m, however, still over 60% of the feeding sites were within 20 m isobath (Fadeev, 2006). Practically all stations at whale feeding sites in 2002-2005 at depths shallower than 15-20 m were characterized by the amphipod dominated community (Fadeev, 2003-2005). When feeding in deeper waters, especially in the northern part of the Piltun area in 2005, whales although staying within the sand dollar community zone often feed in the areas where micro- to meso-scale patches of their common prey organisms, i.e. amphipods, isopods or bivalves occurred. It is also possible that some shifting of feeding whales to depth greater than 20 m was associated with high abundance of sand eel, also consumed by whales in 2005 (Fadeev, 2005).

The 20 m isobath roughly corresponds with the distance of 5-6 km from the shore. Although in the Piltun area Gray whales may feed at greater depth and greater distance from the shore, the majority of them are concentrated at shallower depth and closer to the shore. Therefore 6 km is the minimum extension of the reserve from the shore. Ideally this zone should be broader. On the other hand broader extension may make the development of the reserve very difficult. The protected area in this case strongly overlaps with the areas leased for hydrocarbon development to the “Sakhalin-1” and the “Sakhalin-2” project. The Federal Law “On the Continental Shelf” directly prohibits leasing of the specially protected nature areas on the shelf for hydrocarbon and mineral resources development. If the reserve is proposed for the continental shelf area (as the legal notion, meaning seabed beyond the territorial sea zone and up to the shelf break) overlapping of MPA and the lease area would be legally incompatible. However, in the present case, the proposed reserve still remains within the territorial sea. The respective Federal Law (“On the internal marine waters, territorial sea ...”) does not treat the issue thus making consequences of the MPA implementation for the status of lease areas uncertain in the juridical sense. To avoid the deadlock we suggest to choose 6 km distance from the shore as the offshore boundary of the reserve. This is a compromise solution allowing to establish a protection regime for the bulk of feeding whales on one hand, and to have more guarantee for successful reserve approval by the authorities. The proposed reserve boundaries in the Piltun area are shown in Fig. 3.

The offshore whale feeding area also needs special protection. It is located completely on the continental shelf and within exclusive economic zone. Its boundaries still needs to be clarified taking into account both biological (distribution of prey benthic communities and whales) and legal aspects.

### **Reserve regime**

The reserve regime should be as specific as possible addressing the range of threats to Gray whales and associated biodiversity revealed by recent research and discussion of their results

at various expert meetings including the ISRP (Reeves et al., 2005), interim expert meetings (i.e. IISG), WGAP, meetings of SC of IWC and the Russian national group on Western Pacific Gray whale research planning.

Both in the Piltun lagoon and in the coastal waters any construction, discharges and dumping should be prohibited. No plans for the offshore construction besides of the existing infrastructure of the “Sakhalin-2” project (two platforms and the offshore pipeline – Fig. 3) were recently made. For the Piltun Lagoon the “Sakhalin-1” project implies construction of the pipeline transporting oil from the Odoptu field to the onshore processing facility on the coast of Chaivo Bay. Pipeline laying in the lagoon by means of dredging was approved by the State Ecological Expert Review in 2003. This is potentially the greatest threat to the lagoon ecosystem and the most serious obstacle for the reserve development because the reserve proposal stands in direct conflict with decisions which have been already made. To resolve the issue the current position of Exxon Neftegaz Ltd. (ENL), the operator of the “Sakhalin-1” project has to be cleared and expressed publicly. Within a year it should be clear if ENL is going to modify its pipeline construction plans due to technical and environmental reasons.

Shipping should be only allowed for the lighthouse supply, hydrographic and research vessels with notification to the reserve authorities and in full compliance with traffic rules suggested by WGAP and its predecessors.

Any trawl fishing should be prohibited. This requirement is probably excessive for the Piltun area since the fishing rules prohibit trawling at such shallow depth but may be still actual for the offshore whale feeding area.

Helicopter and aircraft flights should be regulated with regard to altitude, corridors and frequency. The operators of oil and gas projects should notify the reserve authority on their regular flight schedule to drilling platforms and the onshore sites and follow the established air traffic rules.

Seismic surveys should be only allowed in the season prior to whale migration, i.e. May – first half of June.

All kinds of whale research at sea should follow strict rules including using particular types of boats, engines and tactics of approaching whales. To conduct this type of research a special application to the reserve authority is necessary.

Whale watching using boats can be only allowed upon special application to the reserve authority and strictly following the rules of approaching whales. The official inspection of the whale watching projects is mandatory.

Working for 3 seasons on the Piltun and Astokh spits WWF field team observed increasingly unregulated hunting and shooting not only game birds, i.e. ducks and wadders but also gulls and seals on the beach. Most of hunting takes place on land and on the shores of numerous lakes located on the Piltun spit. This hunting grounds are officially used by the Okha Hunters Society but apparently presently an increasing number of hunters are visiting the Piltun spit. We believe that it is not the task of the marine reserve to regulate hunting on land and this should be done through regular game management. On the other hand the reserve can and must restrict the impact of hunting on the non-game species (often having a protection status) concentrating in the marine and lagoon waters. Therefore no hunting and shooting should be allowed over the sea and the lagoon (to protect marine ducks, swans and other water birds).

Contrary to that recreational and subsistence fishing and small-scale commercial fishery practiced in the lagoon should be allowed as it is currently conducted due to its low impact and high social importance for local population.

### **Reserve management**

The proposed reserve will not only protect Gray whales and associated biodiversity but may serve also as a platform for the state ecological monitoring as required by the Russian legislation. Currently it is not completely clear how the reserve could be staffed and managed. There are no special rules prescribing how federal *zakazniks* should be administered. One option commonly practiced recently with regard to this kind of reserves is to subordinate a reserve to the administration of the nearest strictly protected nature reserve (*zapovednik*). Other option would be an independent administration subordinated to the *Rosprirodnadzor* (Russian Federal Service for Control of Nature Use) or to the regional directorate of the *Rosprirodnadzor*. The best solution (as, unfortunately, always takes place in Russia) will be situational and depending on capacity of particular institutions and personal characteristics of their staff.

Regardless of subordination, the reserve staff should be based possibly closer to the area (for example in Nogliki) and have an authority to control activities around the reserve. Possibilities should be provided to do regular on site inspection using various opportunities, i.e. flights with offshore operators, trips with scientists etc.

Current governmental funding of the protected areas is by far insufficient. However, Russian legislation allows to extra-budget funds to fulfill the tasks of specially protected nature areas. Several possibilities exist to assist the reserve in achieving the targets of marine biodiversity protection in North-eastern Sakhalin. In particular, it is possible to establish an official non-commercial partnership aimed at meeting the reserve's targets. The partnership may include the reserve authority, non-governmental organizations working on Western Gray whale conservation (WWF, IFAW, Sakhalin Environment Watch and others), and scientific organizations and individual experts. In particular, through this partnership satellite radio-location images provided by the European Space Agency can be purchased. These images proved to be an effective tool to detect oil slicks and films on the sea surface (Ivanov et al. 1998, 2005; see Fig. 4) and may be used for oil pollution control of the reserve area. The partnership will serve as a link of the reserve authority to all research groups working on Western Gray Whales and WGAP. Since the monitoring programs funded by the offshore projects operators will be inevitably cut, the reserve partnership should develop their gradual replacement by the independent programmes using basically the same methodology.

### **Steps for implementation**

Consideration of the reserve still stands in the agenda of the Ministry of Natural Resources of Russian Federation. The Ministry requires a package of documents prepared according to the recently adopted technical regulation. The current regulation is largely based on the terrestrial case studies and land use norms. Development of the entirely offshore reserve, makes on one hand some steps unnecessary but poses serious questions with regard to the procedure of approval on the other hand. However, we interpret the legislation in the way that any organization, in particular WWF Russia can prepare and submit the proposal and description of the reserve to the State Ecological Expert Review organized by the *Rosprirodnadzor*. Once this Panel Review considers the proposal and makes a positive statement, the process should be further run by the Ministry of Natural Resources which forwards the proposal to the Federal Government.

There are still many gaps in the reserve planning and WWF Russia expects that WGAP contributes to the issue by constructive discussion and recommendations.

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Fig. 1. Distribution of all records of feeding Gray whales in July – August 2004 according to the data of WWF Russia theodolite observations. Isobaths from the shore: 2m, 5m, 10m, 20m, 50 m. Dots on the shore indicate positions of observation stations.

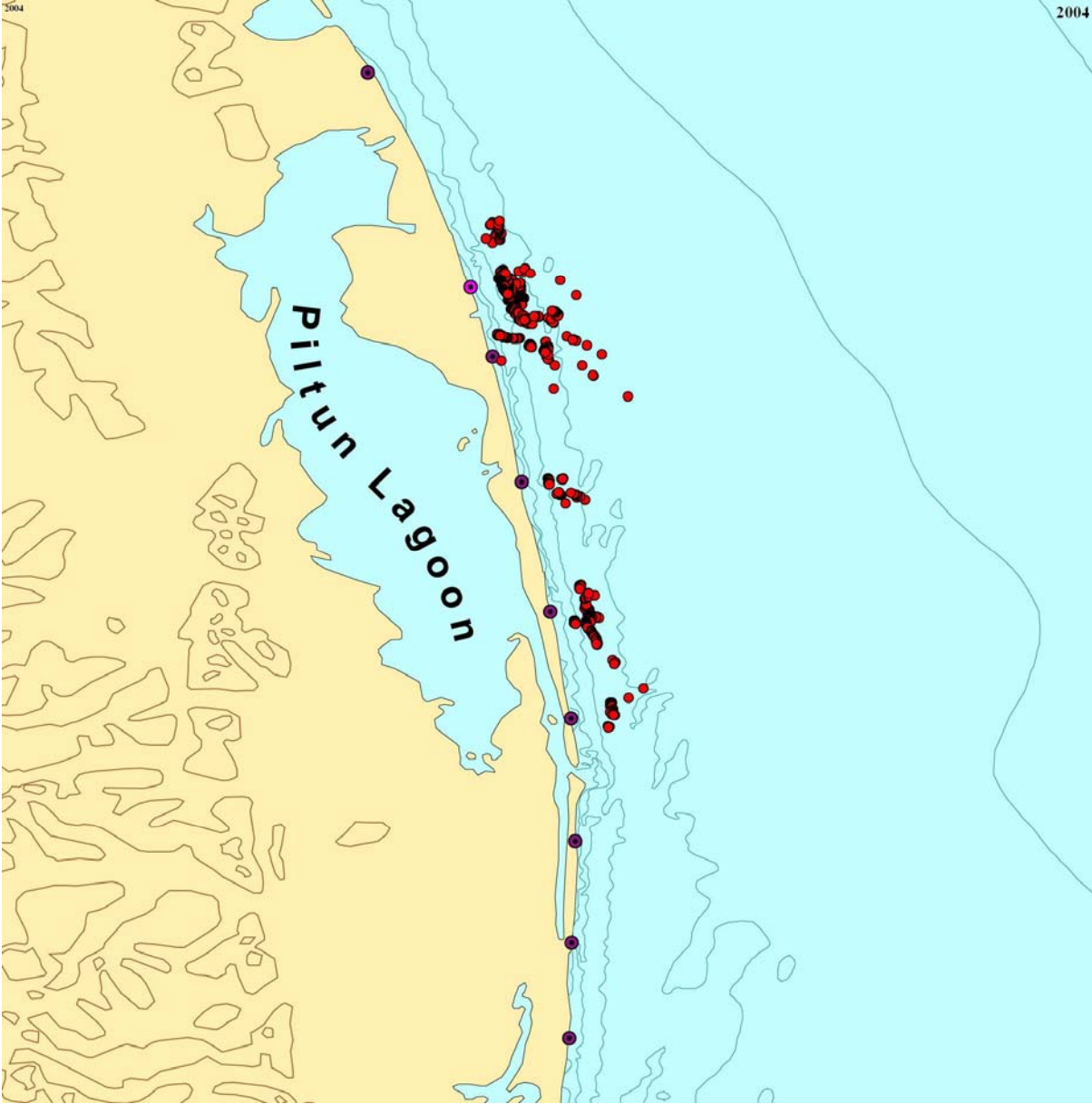


Fig. 2. Distribution of all records of feeding Gray whales in July – September 2005 and in June – August 2006 according to the data of WWF Russia theodolite observations. Isobaths from the shore: 2m, 5m, 10m, 20m, 50 m. Dots on the shore indicate positions of observation stations.

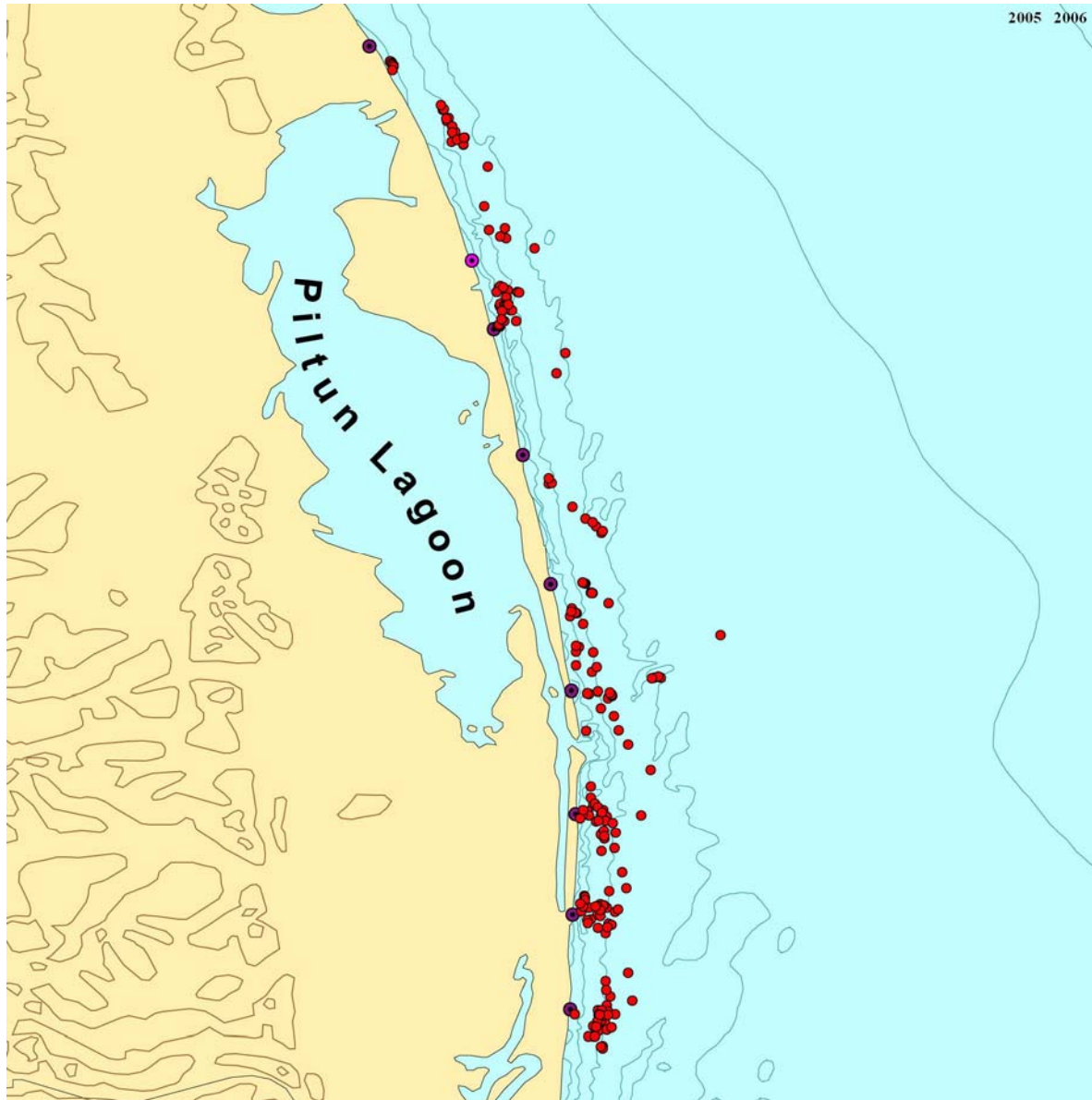


Fig. 3. Proposed boundaries of the *zakaznik* (nature reserve) “Sakhalinskiy Morskoj” (proposed official name in the perspective scheme of marine protected areas development currently prepared by WWF Russia for the Ministry of Natural resources of the Russian Federation). Oil and gas fields, existing and planning infrastructure of the oil and gas industry is shown.

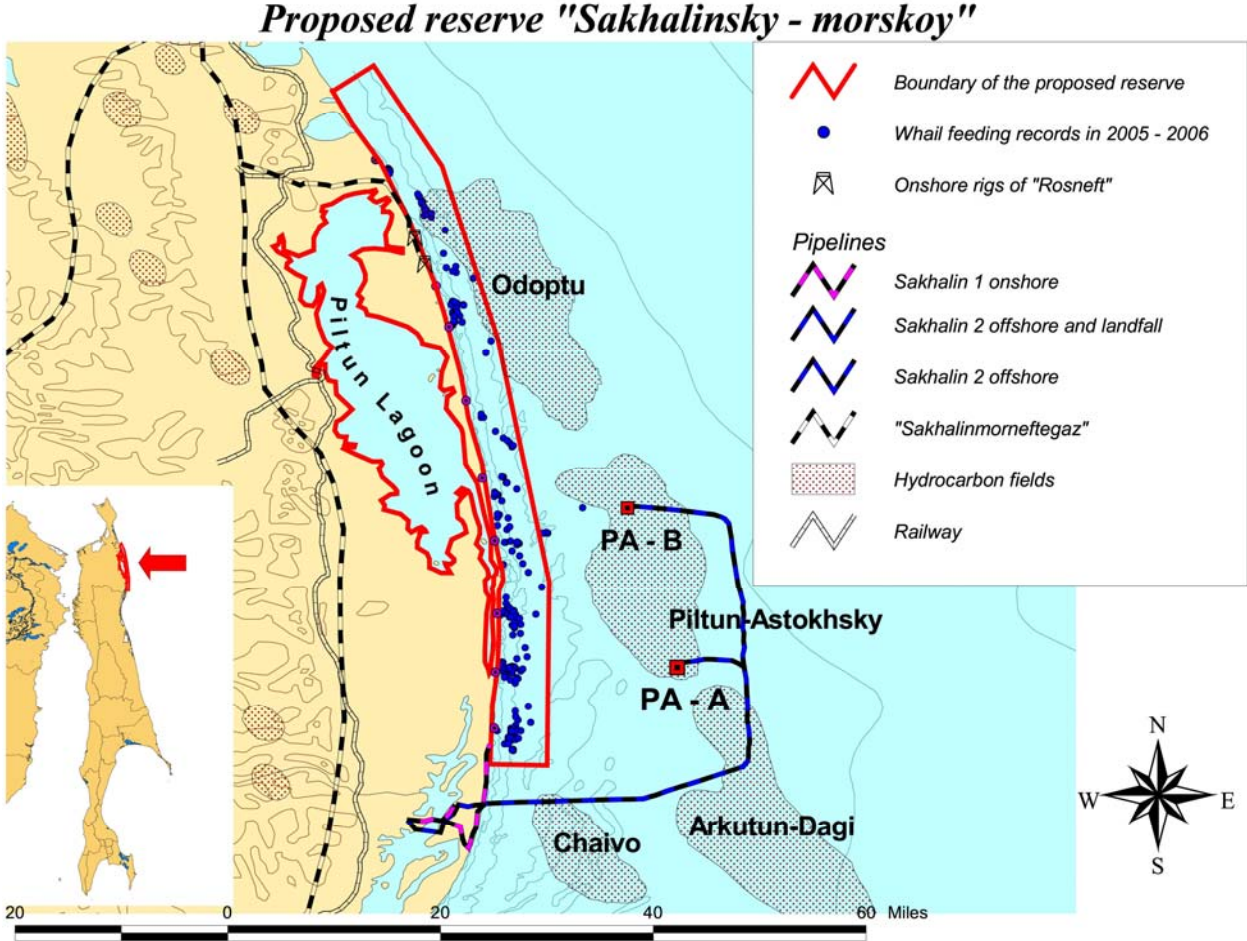


Fig. 4. Example of radiolocation image for entire Sakhalin coast (400 x 1000 km). Envisat image of 23 October 2004. Possible oil slicks in the Nevelskoi Strait are shown in the circle. районе пролива Невельского показаны в круге. © ESA

