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Planning for actions to establish a conservation area to protect the Western Pacific Gray Whale
population on the north-east of Sakhalin Island, Russia
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Planning for and actions on establishing maritime conservation area to protect Western Pacific gray whale population on the north-east of Sakhalin

Report prepared for Western Gray Whale Advisory Panel.

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Summary

The report presents a revised concept for maritime protected area – wildlife reserve in near-shore water of the North-Eastern Sakhalin. The wildlife reserve can help to save characteristic lagoon and near-shore waters habitats of Okhotsk sea and ensure protection of endangered Western-Pacific gray whales, aquatic mammal and bird rookeries. Protected area borders, relations and organizational steps are issues for discussion.

Introduction

Protection of endangered Western-Pacific gray whales recently became the top priority for a number of conservation and scientific organizations both at Russian and international level. Gray whales feeding migration during summer – autumn period at the north-eastern coast of Sakhalin overlaps areas where oil and gas fields are developed under Sakhalin-1 and Sakhalin-2 projects. Offshore fields development together with other anthropogenic factors operating within gray whales habitat creates both actual and potential threats for population survivability (Reeves et al., 2005). Long-run consulting process involving Sakhalin Energy operating the largest Sakhalin project – Sakhalin-2, consortium of banks lead by the European Bank of Reconstruction and Development; and conservation organizations including WWF resulted in an agreement on establishing a special advisory group that would recommend Sakhalin Energy on investigations, monitoring and mitigation of gray whales impact from field construction and oil and gas production activity on Sakhalin shelf. Such group, Western Gray Whale Advisory Panel (GWAP) was established in autumn 2006. Even assuming that Sakhalin Energy would follow all GWAP recommendations there is no guarantee that rest participants of economic activity will do the same. Therefore WWF believes that it is the Russian government that should undertake the next step to preserve gray whales – to establish a natural area of protection for gray whales, their sustaining ecosystems and other components of unique biodiversity of the north-eastern Sakhalin.

Background

Wildlife reserve initial concept to protect Western Pacific gray whales in the areas of their feeding migration was suggested by V.A. Vladimirov (1999). Some years later WWF of Russia (Spiridonov, 2001) elaborated this suggestion; and the issue was discussed at the Joint Ichthyological Committee. In 2002 A.N. Greshevnikov, who was Deputy Chairman of Environmental Committee at the State Duma of the Russian Federation sent the wildlife reserve reasoning to the Prime-Minister of the Russian Federation, M.M. Kasyanov. The Government assigned the Ministry of Natural Resources to agree the issue with interested authorities and prepare necessary official documents. Comments from the authorities and regional administration followed soon. The Federal Border-Security Service (currently the Border Security Service of the Federal Security Service of the Russian Federation) responded positively. The State Committee on Fisheries (in 2004 reorganized into the Federal Agency on Fisheries) addressed two letters to the government. Content of those letters definitely was outside the authority of this body (i.e. fishery resources and fisheries interests). The first letter indicated problems that could arise upon establishing the wildlife

reserve in connection with fulfillment of obligations of the Russian Federation under Production Sharing Agreement. The second letter did not support the wildlife reserve idea either, however denoting another reason: fisheries science does not have data on hydrocarbon exploration and development activity adverse effect on gray whales in Sakhalin region. Governor of Sakhalin region, I.P. Farkhutdinov expressed concern in respect of hindrance that the wildlife reserve could create for Sakhalin-1 and Sakhalin-2 projects. I.P. Farkhutdinov in his letter stated that reason of appearing of “emaciated” whales was unclear. Sakhalin governor pointed the necessity to further studies and the importance of developing federal monitoring program. The Ministry of Energy argued against establishing the wildlife reserve pointing that current legislation is sufficient for mitigating adverse impact from hydrocarbon offshore prospecting and development. Negative responses reflected existing at that time among the authorities general attitude toward Production Sharing Agreement projects as to a “sacked cow”. Representatives from the Ministry of Natural Resources declared in a number of appurtenant cases (mainly at press-conferences) that the issue of the wildlife reserve is still open however no steps had been taken to arrange conflicting opinions of authorities. Reorganization of the Ministry of Natural Resources happened in 2004 quite retarded the process but in October 2005 Deputy Minister of Natural Resources V.G. Stepankov in his letter addressed to WWF - Russia director I.E. Chestin pointed that the Ministry was ready to recover considering the issue of maritime wildlife reserve but its reasoning should be elaborated in accordance with altered regulatory framework.

Meanwhile Sakhalin shelf projects expansion advanced and new data on gray whales and related biological diversity, influencing factors and threats revealed itself. It conditioned revision of initial wildlife reserve project in order to make it more reasonable and increase chances of achieving its approval and realization.

Validation data sources

The following data was used for justifying maritime conservation area at the north-eastern cost of Sakhalin. Most of data on gray whales received both from independent scientists and those working under contracts with oil and gas companies before 2005, is given in an overview of a respectable international group of scientists who prepared an overview of the state of gray whales studying level and of the issue of Sakhalin-2 project impact on them (Reeves et al., 2005).

Spreading of victual gray whales relative to the depth and offshore distance were studied in the course of the three surveying works organized by WWF – Russian in 2004 - 2006 (Spiridonov et al., 2005; Spiridonov et al., 2006). Habitat conditions and ground communities of Piltun lagoon were described by Kafanov et al. (2003).

Catalogue of aquatic birds was prepared by N.N. Yemelchenko on the basis of observations during WWF expedition in 2005 and literary data. Catalogue of fish species residing in Piltun lagoon currently is under preparation.

Russian legislation about maritime conservation areas

The Russian Federation legislation on environment, biological diversity, conservation areas and endangered species is under the strong influence of “continental” conditions. The Federal law of the Russian Federation “On wild animals” (dated 24 April 1995, No 52-FZ) provides certain basis for establishing conservation areas in endangered species habitats.

The Law “On protected areas” (dated 14 March 1995 No 33-FZ) establishes types of protected areas. In connection with issues discussed wildlife reserve type is of special interest (article 22). In accordance with para 2 of the mentioned article economic activity within a wildlife reserve is regulated but not necessarily prohibited and thus the wildlife reserve type represents the most

flexible tool from those provided for by the legislation. In a complex situation with gray whales and Sakhalin shelf projects it is an absolute advantage.

The Law “On coastal shelf of the Russian Federation” (dated 30 November 1995 No 187-FZ) extends the rights of the Russian Federation on establishing certain categories of Protected areas including wildlife reserve on coastal shelf of the Russian Federation (article 26). As appeared from this Law and the Law “On internal waters, territorial sea and contiguous zone” (dated 31 July 1998 No 155-FZ) maritime wildlife reserves should represent federal conservation areas established by resolutions of the government of the Russian Federation.

Wildlife reserve concept

The proposed wildlife reserve should meet a number of criteria required by general spirit of international legislation (for instance, Convention of Biological Diversity to which Russia is a party), recommendations on conservation area planning developed by International Union for the Conservation of Nature Resources (IUCN); and Russian legislation requirements. In the first place, a wildlife reserve should include habitats and ecosystems both specific and unique for a certain region. In addition wildlife reserve should provide for functional wholeness of protected ecosystems and their yielding capacity. Besides wildlife reserve should be controlled and establish basis for long-term environmental and biological diversity monitoring.

We consider the wildlife reserve as a part of potential integrated system of maritime protected areas which is currently under planning of WWF – Russia. Planning process is based on zoning system suggested by A.V. Ivanov (2003). Areas-candidates are selected for certain regions of this system based on principles of representativeness, uniqueness, diversity and productivity.

In respect of north-eastern Sakhalin first of all characterized by lagoon coast type, representative conservation area within coastal zone should include both lagoon and shallow-water maritime habitats. Integrating Piltun lagoon (bay) – the largest lagoon in Eastern Sakhalin together with its diversified benthic habitats (Kafanov et al., 2003) – and Okhotsk sea zones located alongside Piltun and Astokh shoal heads and where gray whales live on (Fig. 1) is able to satisfy representativeness criterion.

Benthic sediments in coastal zone neighboring Piltun shoal head consist mainly of fine-grained (0.1-0.25 mm) and medium-grained (0.25 – 0.5 mm) sand with fine-grained sand predominating at depth less 20 m (Fadeev, 2002). This shallow-water region with extremely dynamic environmental condition is under the influence of strong flood tide streams and wave activity. These factors determine habitat of motile sestonophage communities, mainly Amphipods which are quite distinctive for coastal shallow waters of the north-eastern Sakhalin. Benthic habitat is physically structured with polychaetes *Onuphis shirikishinaiensis* which establish distinctive skeleton providing for seston accumulation and other organisms background holding that otherwise would be hindered in this highly energetic locality. Benthic community residing in coastal shallow waters generates basic feeding resource for gray whales. Cake urchins (“sand dollars”) *Echinarachnius parma* (Fadeev, 2002) prevail in benthic community offshore (at depths not exceeding 20 m). In contrast to this community with dominating Amphipods, “sand dollar” biocenosis is quite habitual in other regions of Okhotsk sea (Shuntov, 2001).

To the south from Piltun-Astokh region eastward from Chayvo bay at depths not exceeding 40 m there is so-called seaward feeding area of gray whales. This area is characterized with patches of benthic communities with dominating Amphipods *Ampelisca* – the very same that make feeding water for eastern-Pacific gray whales in Chukotka waters (Fadeev, 2004, 2005, 2006). This area should be included in the wildlife reserve as an independent part.

Piltun lagoon and adjacent waters of Okhotsk sea are constantly exchanging energy, organic substance and organisms. The lagoon affects coastal waters oceanographic regime; probably benthic community producing capacity in whales feeding area is maintained due to exporting organic substance from the lagoon. Fish and large benthic invertebrates' migration to and from the lagoon also has integrating impact on ecosystems of Piltun lagoon and coastal shallow waters of Okhotsk sea. Feeding gray whales concentrations in coastal waters are known throughout the world; however they are not the only notable component of biologic diversity to be saved by means of wildlife reserve.

Coastal waters near Piltun lagoon are habitat for remarkable diversity of marine mammals. Killer whales and white whales are quite common there. Not far from the lagoon head there is one of the largest Sakhalin colonies of Larga's seal located (Trukhin, 2005).

Coastal waters and lagoons of the north-eastern Sakhalin are considered to be water-swamp territories of global value as they are key area for larines, anseriformes and sandpipers' migratory stop and nesting. These regions are recommended for being included in the list of areas protected in accordance with Ramsar Convention (Zykov, 2000). Total number of water and coastal birds nesting or migrating alongside the waterside in the area of Piltun lagoon amounts to 133 species with 4 species included in the IUCN Red List and 9 species recorded in the Red Book of the Russian Federation (N. Yemelchenko, script). Coastal waters play notable role as regions of goose barnacle feeding and molting concentrations. In particular, the mightiest concentrations of hawk-nosed scoter *Melanita deglandi* Asian subspecies are forming here. According to various estimations (Poyarkov, Rozanov, 1998) their number can achieve 35-40 thousand species (5% of the total population). Wrangle Islands in Piltun lagoon is the place where a very large population of Aleutian tern is formed; this species is included in the Red Book of the Russian Federation. Ornithologists worked in WWF expedition in 2005 discovered migratory concentrations of Baikal teal (*Anas formosa*) in the north-eastern coastal zone of Piltun lagoon and in the region of Wrangle Islands – the species included in IUCN Red List (Yemelchenko et al., in print). Recently this species became rare in Sakhalin and require special protection that could be provided with wildlife reserve involvement.

Wildlife reserve boundary

Ideally a conservation area located in coastal zone includes bounded ground based and water-based components. Inclusion of Piltun and Astock shoal heads is desirable option for Piltun lagoon region as the shoal heads are important habitat for coastal waters birds during nesting and migratory stops. However from the point of view of specialists “pushing” the wildlife reserve establishing the inclusion of land areas may initiate long discussion and even a conflict with land users, in particular with Sakhalin-1 project that envisages infrastructure facilities to be build for Odoptu field development directly on Piltun shoal head (Fig. 1). In addition, it appears quite difficult to agree establishing of a wildlife reserve with users of hunting areas on the shoal head.

Thus we suggest that only maritime (including lagoonal) areas should be included in the wildlife reserve. Legally speaking it means that specially protected natural area covers both inland and marine waters (Piltun and Astokc lagoons) and territorial sea (coastal waters of Okhotsk sea adjacent to Piltun and Astokh shoal heads where gray whales feeding area is located). In accordance with the Federal Law “On internal waters, territorial sea and contiguous zone of the Russian Federation” the wildlife reserve border from land should be the lowest water line.

Sea border in Piltun region should cover gray whales major feeding area. Our theodolitic observations in 2004 – 2006 (Spiridonov et al., 2005; Spiridonov et al., 2006) demonstrate that over 90% of feeding whales concentrate within 20 meter isobathic curve (Fig. 1, 2).

This data could be distorted as offshore observers have limited ability to distinguish feeding whales at far distances from coast. At the same time there are no doubts that significant part of feeding whales hangs close to the coast within 20 meter isobathic curve where major feeding benthic organism communities are located (Fadeev, 2002 – 2005).

20 meter isobathic curve crosses Piltun and Astokh shoal heads approximately 5-6 km from coast. Thus, the distance of 6 km from eastern coast of shoal heads determines the minimal possible wildlife reserve stretch in Okhotsk sea. Further extension is undoubtedly desirable but can create significant difficulties in agreeing the wildlife reserve. In this case specially protected natural area will significantly overlap Sakhalin-1 and Sakhalin-2 license areas. Federal Law “On coastal shelf of the Russian Federation” directly prohibits siting of specially protected natural area located on the shelf as license areas for mineral resources exploration and development. If wildlife reserve is proposed for areas on coastal shelf then overlapping of license and specially protected natural areas would contradict with legislation. However in our case the wildlife reserve stays within the territorial sea. The respective law (Federal Law “On internal marine waters...”) does not say on specially protected natural and license areas compatibility or non-compatibility leaving the issue open. Such uncertainty does not promote clarification of legal aspects related to the wildlife reserve establishing. Selecting the border in Okhotsk sea at the distance of 6 km offshore we on the one hand comprise an area where significant number of whales are feeding and on the other hand minimally affect license areas. Such compromise solution can have positive effect on agreeing the proposed specially protected natural area.

Seaward area of whales feeding also requires special protection. It is located solely within coastal shelf and an exclusive economic zone of the Russian Federation. Its boundaries still require being specified taking into account both biological (feed benthic life distribution) and legislative aspects.

Wildlife reserve regulations

Wildlife reserve regulations should be worked put in details to the extend enabling to prevent wide range of threats to gray whales and related components of biological diversity. These threats were discussed at various panel meetings (for example, Reeves et al., 2005). Both in Piltun lagoon and coastal waters of Okhotsk sea any type of engineering construction, spillovers and damping must be prohibited. Within Sakhalin-2 framework all facilities planned for the second phase of the project (two platforms and underwater pipeline – Fig. 3) located outside the planned wildlife reserve, have been currently completed or will be built in 2007. In respect of Piltun lagoon Sakhalin-1 project envisages construction of undersea pipeline to transport oil produced from offshore benches on Odoptu field (located on Piltun shoal head) to oil treatment center on Chayvo bay coast. The state environmental assessment held in 2003 provided the concurrence with a project involving trench pipeline laying across the lagoon. This pipeline construction potentially represents the largest threat for lagoon ecosystem and is one of the most serious obstacles for wildlife reserve establishing as the wildlife reserve plan contradicts with the decision made. This problem settlement requires that Exxon Neftegas Ltd. (“ENL”), Sakhalin-1 operator that is informed about criticism of pipeline trench opening project from the point of view of danger it constitutes for the lagoon, open and clear states its official stance. During 2007-2008 it will become clear whether ENL is intended to modify its pipeline project base don technical and environmental reasons. (It should be noted that certain components of Sakhalin-1 project have been already modified).

Maritime traffic within the wildlife reserve boundaries should be allowed only for light tower supply support, navigation of hydrographical and survey vessels at notice to the wildlife reserve administration and full compliance with rules of whales collision avoidance recommended by the West-Pacific Gray Whales Advisory Panel and the preceding expert groups.

Given the fact that fishery as it is now (fishing with stationary nets and winter fishing of far eastern cod in the lagoon) should be retained, trawl fishing should be prohibited. However this requirement is easily practicable as there is no fishing target to be procured with trawl within 6 km coastal line of the proposed wildlife reserve. Trawl fishing prohibiting is obligatory for whale seaward feeding area.

Possibility to restore herring fishing with shore seines in the lagoon. Considering the fact that this business was active before 1968 (when fishery collective farm was terminated and Maritime Piltun settlement was resettled) for years back, obviously it should be allowed subject to its detailed study and development of necessary measures to mitigate its action on the lagoon ecosystem.

Airship flying should be regulated in respect of altitude, corridor and flight frequency. Operators of shelf oil and gas projects should notify the wildlife reserve administration about flight schedules to offshore platforms and coastal points of destination and follow the established rules to mitigate airship flight impact on gray whales and other wildlife reserve habitants.

Seismic prospecting should be allowed only during the season prior to the period of whale mass migration.

All types of whale studies should be subject to strict rules envisaging use of certain types of air boats, engines and tactics for whale approaching. Application for such studies should be approved by the wildlife reserve administration.

Tourism (whale watching) on boat should be allowed only upon condition of submitting tourist program to the state environmental assessment and environmental seal of approval from recognized experts on maritime mammals and obligatory compliance with the rules for off-land whale watching. The wildlife reserve inspector should be included in tourist group during whale watching tours.

WWF expedition working on Piltun and Astokh shoal heads during 3 seasons noted increase in uncontrolled hunting activity and shooting not only game birds (ducks and sandpipers) but also seagulls and seals on the shore. Mainly hunting takes place on land and watersides of numerous lakes located on Piltun shoal head. Hunting grounds on shoal head officially are used by Okhta hunting society however it is obvious that not only the society members are engaged in hunting weapon work in the area of the proposed wildlife reserve. Officially hunting on Piltun shoal head requires permit but actually everyone who paid to yagers at control point when entering the shoal head from the north practices shooting. Although hunting control on land is not the task for maritime wildlife reserve and could be achieved within the framework of existing game laws, the wildlife reserve should limit hunting weapon shooting impact on non-game species (often having special protection status). Most reasonable limitation aimed to protect goose barnacles, swans and other sea birds as well as seals is prohibiting hunting from water both in the lagoon and coastal waters of Okhotsk sea.

Wildlife reserve management

The proposed wildlife reserve will not only protect gray whales and their biocenotic ambiance but also serve as a basis for environmental monitoring required by Russian legislation. Currently it is not quite clear how this specially protected natural area need to be staffed with and how it should be funded from federal budget. There are no general rules stipulating federal wildlife reserve management. One of the options that is often realized in specially protected natural area management practice in Russia is transfer of control function to administration of a nearest conservation area. Another opportunity is immediate subjection to Rosprirodnadzor. Solution, as is usually happens in Russia will depend on situation and possibilities of particular organizations and personal features of their employees.

Irrespective of form of management the wildlife reserve personnel should consist of professionals. Employees should be able to reach the wildlife reserve and check security compliance promptly. Various options could be used for these purposes: flying with helicopters and vessels serving shelf projects, trips with scientists studying whales.

It is generally known that state funding for specially protected natural areas is not sufficient. At the same time the Russian legislation allows to use non-budgetary funds to accomplish specially protected natural areas objectives. There are a number of options to assist the wildlife reserve to preserve maritime biological diversity of the north-eastern Sakhalin. In particular, a promising option is official registration of a non-commercial partnership involving the wildlife reserve administration, non-state organizations dealing with gray whales protection issues (WWF, IFAW, Sakhalin Watch), scientific organizations and independent experts. It will be possible through partnership to obtain radar space images provided by the European Space Agency. These images proved to be an efficient tool for detecting surface oil slicks (Ivanov et al. 1998; Ivanov, 2005; see Fig. 4) and can be used to control oil contamination in the wildlife reserve area. Partnership will serve as interface between the wildlife reserve administration and all scientific groups studying west-Pacific gray whales and WGAP. Considering the fact that monitoring programs financed by shelf oil and gas projects' operators will be unavoidable reduced, the wildlife reserve partnership should develop a program applying the same methodology that will substitute for monitoring program currently fulfilled by oil companies.

Implementation stages

The issue of establishing maritime wildlife reserve on the north-east of Sakhalin is still on the agenda in the Ministry of Natural Resources of the Russian Federation. The issue advancing requires submission of package of documents to the Ministry in accordance with currently established technical regulation. Current legislation immensely stipulated by specific features of establishing specially protected natural areas on land and regulating relations with land users. Establishment of pure maritime wildlife reserve on the one hand makes certain procedures needless, and on the other hand raises serious procedural issues and issues related to execution sequence. At the same time we believe that legally such organization as WWF-Russia can prepare complete justification of a wildlife reserve for the state environmental assessment organized by Rosprirodnadzor. When the state environment expertise committee considers the justification and provides positive opinion, the process of establishing wildlife reserve will be sent to the Ministry of Natural Resources.

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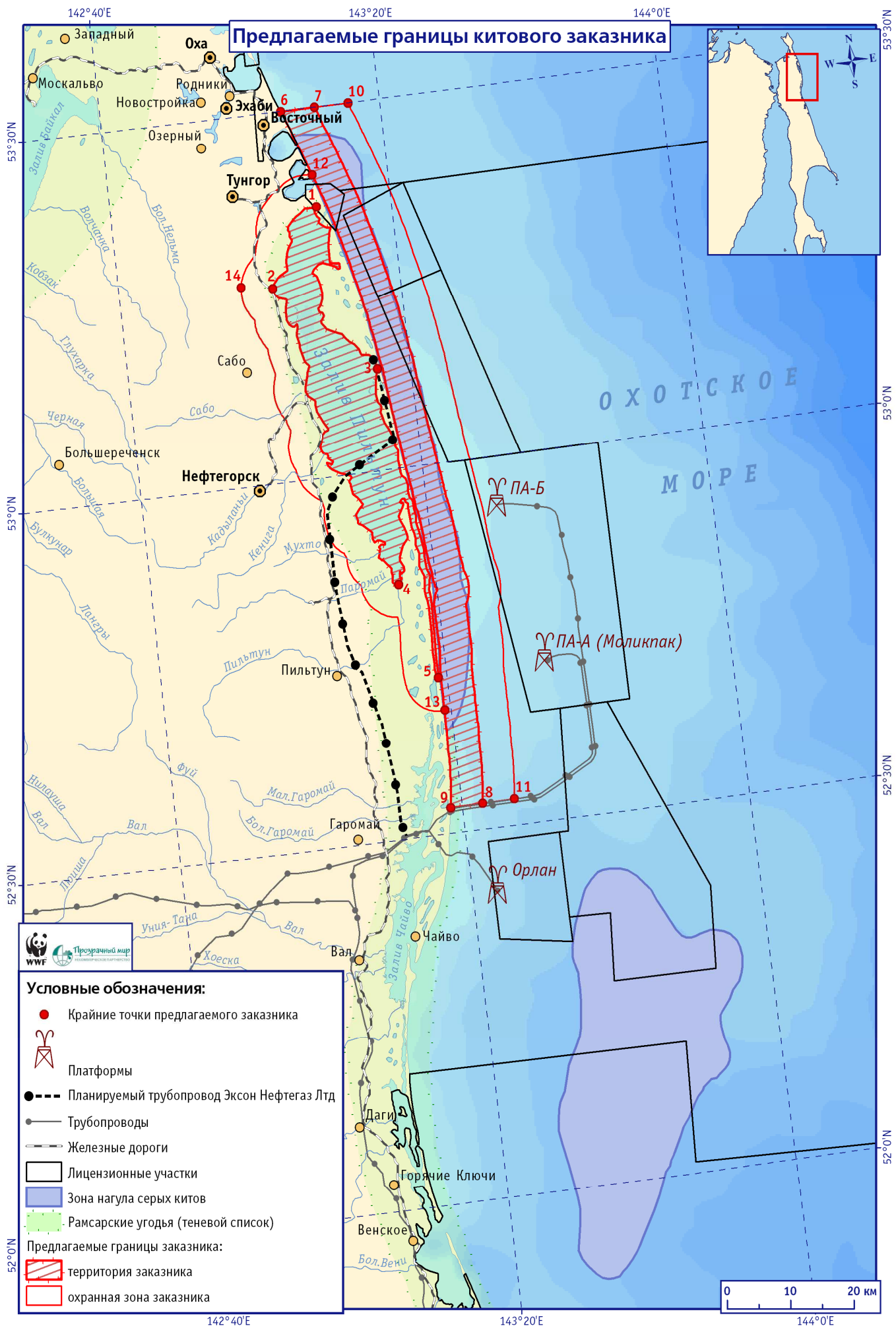
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Fig. 1. Proposed borders of Sakhalin Maritime wildlife reserve (official name suggested for federal specially protected natural areas' perspective scheme planned to be established before 2020). Areas of shelf oil and gas fields, current and planned infrastructure for shelf oil and gas projects are shown.



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