

Appendix 5B

Birds Report

SUMMARY OF REFERENCES

ON THE BIRDS OF ABSHERON-GOBUSTAN COASTLINE OF THE CASPIAN SEA IN SOUTH-WESTERN ABSHERON CONTRACT AREA

The importance of the region

The Absheron-Gobustan coastline of the Caspian Sea has an international and regional importance as the habitat for birds of water and coastal ecological groups. 7 out of 10 main flocking places of birds in this region are in South-Western Absheron contract area. Different bird species, listed in the Red Book of Azerbaijan, the Red List of the International Union for Conservation of Nature (IUCN), in RAMSAR, Bern, Bonn, CITES conventions and in the annexes of AEWA agreement, inhabit in this contract area in internationally important numbers during migration, wintering, and nesting periods.

Along with its avifaunal diversity the Absheron-Gobustan coastline of the Caspian Sea is of great importance for the development of oil industry. It should be noted that State Natural Reserve for mud volcanoes of Baku Archipelago and Absheron peninsula and Absheron National Park are located in the contract area

The objective of the conducted research is to analyse the reference (literature) data on the number and species of birds belonging to waterfowl and coastal ecological groups inhabiting in South-Western Absheron contract area, their inhabitation character, current situation of their habitats, the factors influencing them and then to prepare scientifically-grounded recommendations to minimize possible impacts to them during the seismic surveys.

Data analysis

128 species of waterfowl and coastal birds were recorded in the contract area located at the Absheron-Gobustan coastline of the Caspian Sea (4, 7, 9, 10, 11). Species, numbers, dynamics, and territorial distribution range of birds distinctly differ from each other during migration, wintering and nesting periods.

Migratory bird species

Flyway of 128 bird species of waterfowl and coastal ecological groups pass from the Absheron-Gobustan coastline of the Caspian Sea where the contract area is located (see Table 1.)

Table 1 Species and inhabitation character of waterfowl and coastal birds at the Absheron-Gobustan coastline of the Caspian Sea where the South-Western Absheron contract area is located and the relation of international conventions and agreements to them

N	Description of species	Inhabitation	Conventions and agreements				
			RAMSAR	CITES	Bern	Bonn	AEWA
	1	2	3	4	5	6	7
1.	Gavia stellata	of	+		+	+	+
2.	G.arctica	of	+		+	+	+
3.	Podiceps ruficollis	s,wm	+		+		
4.	P.nigricollis	wm	+		+		
5.	P. cristatus	s,wm	+		+		
6.	P.grisegena	wm	+		+	+	+
7.	Pelicanus crispus	wm	+	+	+	+	+
8.	P. onocrotalus	wm	+		+	+	+
9.	Phalacrocorax carbo	s, wm	+		+		
10.	Ph.pygmaeus	wm	+		+	+	+
11.	Botaurus stellaris	it	+		+	+	+
12.	Ixobrychus minutus	it	+		+	+	+
13.	Nycticorax nycticorax	it	+		+		
14.	Ardeola ralloides	it	+		+		
15.	Bubulcus ibis	it	+		+		
16.	Eqretta alba	wm	+		+		
17.	E.garzetta	wm	+		+		
18.	Ardea cinerea	wm	+		+		
19.	A.purpurea	nm	+		+	+	+
20.	Plegadis falcinellus	it	+		+	+	
21.	Ciconia ciconia	it	+		+	+	+
22.	Phoenicopterus roseus	wm	+	+	+	+	+
23.	Cygnus olor	wm	+		+	+	+
24.	C.cygnus	wm	+		+	+	+
25.	C. bewickii	wm	+		+	+	+
26.	Anser anser	it	+		+	+	+
27.	A.albifrons	it	+		+	+	+
28.	A.erythropus	it	+		+	+	+
29.	Branta ruficollis	it	+	+	+	+	+
30.	Chen caerulescens	it	+		+	+	+
31.	Tadorna ferruginea	nm	+		+	+	+
32.	Tadorna tadorna	wm	+		+	+	+

33.	Anas platyrhynchos	s,	+		+	+	+
34.	A.penelope	wm	+		+	+	+
35.	A.crecca	wm	+		+	+	+
36.	A.clupeata	wm	+		+	+	+
37.	A.sterepera	wm	+		+	+	+
38.	A.acuta	wm	+		+	+	+
39.	A.querquedula	wm	+		+	+	+
40.	Marmaronetta angustirostris	wm	+		+	+	+
41.	Netta rufina	wm	+		+	+	+
42.	Aythya ferina	wm	+		+	+	+
43.	A. nyroca	wm	+		+	+	+
44.	A.fuligula	wm	+		+		+
45.	A.marila	wm	+		+		+
46.	Clangula hyemalis	it	+		+	+	+
47.	Melanitta nigra	of	+		+	+	+
48.	M.fusca	of	+		+	+	+
49.	Bucephala clangula	wm	+		+		+
50.	Oxyura leucocephala	wm	+	+	+		+
51.	Merqus merganser	wm	+		+		+
52.	M.serrator	wm	+		+		+
53.	M.albellus	wm	+		+		+
54.	Grus grus	it	+	+	+	+	+
55.	G. leucogeranus	it	+	+	+	+	
56.	Anthopoides virgo	it	+	+	+	+	
57.	Rallus aquaticus	s,w	+		+		
58.	Porzana porzana	wm	+		+	+	+
59.	P.parva	it	+		+	+	+
60.	P.pusilla	it	+		+	+	+
61.	Crex crex	it	+		+	+	
62.	Gallinula chloropus	it	+		+		
63.	Porphyrio porphyrio	s	+		+		
64.	Fulica atra	wm	+		+	+	+
65.	Pluvialis squatarola	it	+		+	+	+
66.	P.fulva	it	+	+	+		
67.	P.apricaria	it	+		+	+	+
68.	Charadrius hiaticula	it	+		+	+	+
69.	Ch.leschenaulti	nm	+		+	+	+
70.	Ch. dubius	wm	+		+	+	+
71.	Ch.alexandrinus	nm	+		+	+	+
72.	Ch.asiaticus	it	+		+	+	+
73.	Eudromias morinellus	it	+		+	+	+
74.	Vanellus vanellus	it	+		+	+	+
75.	Chetusia gregaria	it	+		+	+	+
76.	Vanellochetusia leucura	it	+		+	+	+
77.	Lobivanellus indicus	it	+		+	+	

78.	Himantopus himantopus	s,wm	+		+	+	+
79.	Recurvirostra avosetta	s,wm	+		+	+	+
80.	Haematopus ostralegus	it	+		+	+	
81.	Tringa ochropus	nm	+		+	+	+
82.	T.glareola	it	+		+	+	+
83.	T.totanus	s,wm	+		+	+	+
84.	T.nebularia	it	+		+	+	+
85.	T.erythropus	it	+		+	+	+
86.	T.stagnatilis	it	+		+	+	+
87.	Actitis hypoleucos	wm	+		+	+	+
88.	Terekia cinereus	it	+		+	+	+
89.	Philomachus pugnax	it	+		+	+	+
90.	Calidris ferruginea	it	+		+	+	+
91.	C.alba	it	+		+	+	+
92.	C.temminckii	it	+		+	+	+
93.	C.minuta	it	+		+	+	+
94.	C.albina	wm	+		+	+	+
95.	C.melanotos	it	+		+	+	+
96.	C.canutus	it	+		+	+	+
97.	Limicola falcinellus	it	+		+	+	+
98.	Numenius teuirostris	it	+	+	+	+	+
99.	N. arquata	it	+		+	+	+
100.	N.phaeopus	it	+		+	+	+
101.	Arenaria interpres	it	+		+	+	+
102.	Phalaropus lobatus	it	+		+	+	+
103.	Lymnocyrtus minimus	wm	+		+	+	+
104.	Gallinago media	it	+		+	+	+
105.	G.gallinago	wm	+		+	+	+
106.	Limosa limosa	wm	+		+	+	+
107.	L.lapponica	it	+		+	+	+
108.	Scolopax rusticola	it	+		+	+	
109.	Glareola pratincola	it	+		+	+	+
110.	G. nordmanni	it	+		+	+	+
111.	Curcorius cursor	it	+		+		+
112.	Burhinus oedicephalus	nm	+		+	+	
113.	Larus argentatus	wm	+		+		
114.	L.canus	wm	+		+		
115.	L. melanocephalus	nm	+		+	+	+
116.	L.genei	nm	+		+	+	+
117.	L.ichthyaetus	wm	+		+	+	+
118.	L.cachinnans	s	+		+		
119.	L.ridibundus	wm	+		+		
120.	L.minutus	it	+		+		
121.	Chlidonias hybrida	nm	+		+		
122.	Ch.leucopterus	nm	+		+		

123.	Ch.niger	it	+		+	+	+
124.	Gelochelidon nilotica	it	+		+	+	+
125.	Sterna hirundo	nm	+		+	+	+
126.	S.albifrons	nm	+		+	+	+
127.	S.sandvicensis	nm	+		+	+	+
128.	Hydroprogne caspia	nm	+		+	+	+
Total		128	128	10	128	99	99

Notes:

s - sedentary

s, wmp – sedentary, has wintering migratory populations

Wm - wintering migratory

Nm - nesting migratory

It – in transit

Of – occasionally found

Birds nesting in the European part of the Russia, Western Siberia, and north-western part of Kazakhstan fly to the south of the Caspian Sea, south-western Asia countries, and Africa during autumn migration for wintering, but they fly back to north during spring migration period. Birds' autumn migration starts mainly from the second half of August and lasts until the second ten days of December. In case of severe winter conditions in Russia, this migration continues until 10th of January. The most active period of migration is November. The spring migration of birds starts in the second half of February and finishes in April with March being the most active period (10, 11). During the autumn migration, 51.43% of birds fly along the Caspian coast to the south, 36.64% fly to the southwest, while 11.93% of the birds fly from the Pirallahi-Shahdili coastline to the southeast (7) to the Caspian coast near Turkmenistan (Figure 1).

The latest information during our research conducted in the last 35 years was also observed by BP employees working on West Chirag and other oil platforms in the Caspian Sea. According to their information, some birds sit around the offshore oil platforms during the night migration. Some individuals die getting stuck to the platforms. But there is no information in the references about the species and number of birds at the mentioned areas. And during the spring migration, 39.76% of the birds fly to the north, 26.32% to the northwest and 25.50% to the northeast (7).

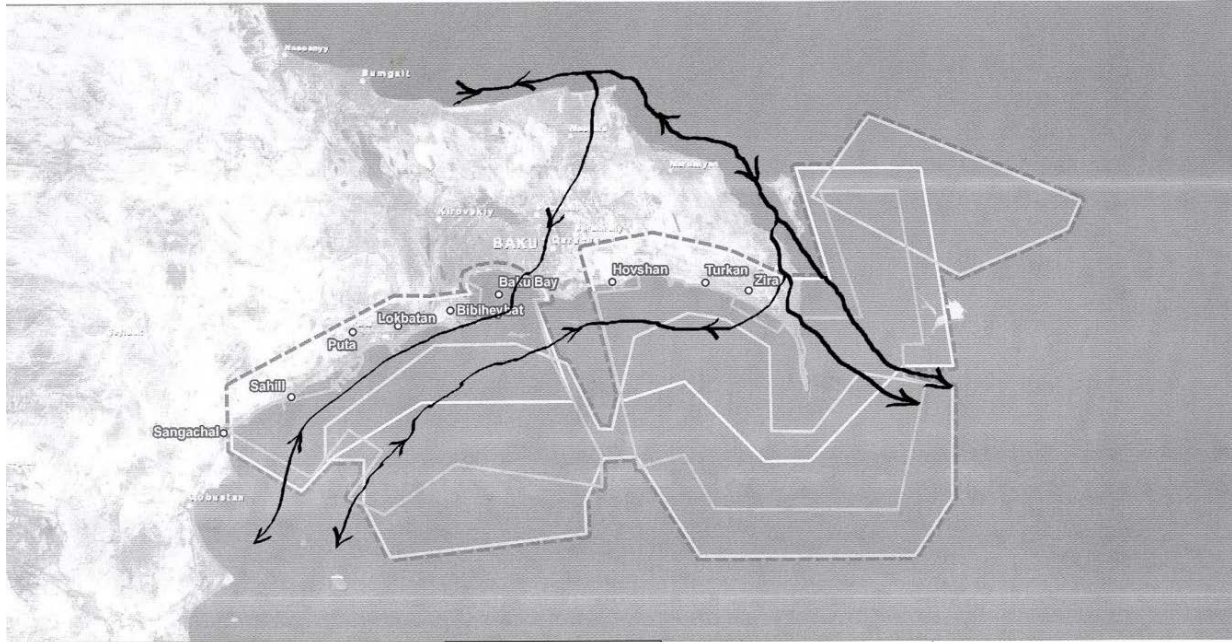


Figure 1. Flyway of waterfowl and coastal birds in South-Western Absheron contract area.
 ↑ to North, ↓ to South, → to South-East

The main part of the waterfowl and coastal birds during migration consist of *Anas*, *Netta* and *Aythya* ducks, seagulls (*Laridae*) and coots (*Fulica atra*).

7 species of river ducks (*Anas*) are found here. Among them, mallard (*Anas platyrhynchos*) prevails in number, and its number increases in November-December. The spring migration of this species starts from end of March, and the autumn migration starts from the end of August. Wigeon (*Anas Penelope*) is one of the numerous ducks abundant in the region, its migration in spring starts at the end of February and continues until the end of March, and in autumn it starts at the beginning of September and finishes at the end of November. Gadwall (*Anas strepera*) becomes numerous during migration period. Its spring migration starts at early March, and autumn migration starts at the end of October. Its flight becomes massive at the end of November. Pintail (*Anas acuta*) is numerous at the shallow areas of the sea. Its spring migration starts in mid February and finishes on the 15th of April. Its autumn migration starts on the 15th of September and becomes massive in October. The spring migration of Garganey (*Anas querquedula*) takes place in March-April, and the autumn migration starts from the end of August. They fly in large flocks during migration. There are 200-500 individuals in each flock in September, and single individuals are observed in October. Migrating individuals of Shoveler (*Anas clypeata*) are clearly distinguished among other ducks in open water areas. Its spring migration starts in March-April, and autumn migration starts at the end of August finishing at the end of November. The spring migration of Wigeon (*Anas Penelope*) starts at early March and finishes at early April, its autumn mass flight is observed during the first half of November. Red-crested pochard (*Netta rufina*) prevails in number among ducks. Its spring migration starts at the end of February and finishes in early April. Its autumn migration starts in October and ends in

mid December. Tufted duck (*Aythya fuligula*) is one of the most numerous ducks. Its spring migration starts in mid February. New duck flocks come to replace the flown away individuals. Migration continues until mid April. Autumn migration starts in September and continues until December. Scaup (*Aythya marila*) is not numerous. It is found in open sea areas. Its spring migration starts at the end of February and ends in early April. And in autumn it starts in mid September and continues until December. Ferruginous duck (*Aythya nyroca*), Goldeneye (*Bucefala clangula*), Smew (*Mergus albellus*), Red-breasted merganser (*Mergus serrator*), Goosander (*Mergus merganser*), Ruddy shelduck (*Tadorna ferruginea*), Shelduck (*Tadorna tadorna*), Marbled teal (*Marmaronetta angustirostris*) are small in number, their migration periods corresponds to other duck's migration periods.

During the autumn migration period, three species of birds in transit are observed in the Absheron-Gobustan coastline of the Caspian Sea. Among them, Greylag goose (*Anser anser*) is observed in early November, but in large flight they are observed at the end of November. Their transit flight through the contract area to their nesting territories continues until January depending on the weather temperature. Spring transit flight starts at the end of February and becomes massive on the 10-15th of March. White-fronted goose (*Anser albifrons*) continues its transit fly from mid October until December. The transit fly of Lesser white-fronted goose (*Anser erythropus*) through the contract area during the autumn migration is observed in November, and in the spring is observed in March.

3 species of *Cygnus* is found in the area. *Cygnus olor* and *Cygnus cygnus* come to the region in December. Depending on the weather temperature in the North, they fly in until the 10th of January. Their spring fly-out starts in the second half of February. *Cygnus bewickii* is rarely found in the region. Red-breasted goose (*Branta ruficollis*) specie is endangered. Its autumn migration continues from the end of October till mid November. The most numerous from Rallus aquaticus is Coot (*Fulica atra*). Its autumn migration starts in early November and its number become larger in December. Its spring migration starts at the first ten days of March, flying out in larger flocks at the end of March and in early April.

Ducks, *Cygnus*, pelicans and coots dwell mainly in coastal waters (in 5-6 km width). 65 species of Chadriiformes were recorded in the mentioned territories. Their autumn migration is mainly in August-November, and the spring migration is in March-May. Apart from all wetland biotopes along the coastline of the sea they can be found in all aquatory of the sea as well as in the South-Western Absheron contract area. Podicipedidae and Gaviidae can be found in these areas too.

Wintering bird species and their vulnerable gathering sites

57 species of waterfowl and coastal birds were registered in Absheron-Gobustan area of the Caspian Sea. 43 of them are wintering migratory, 2 are sedentary, 8 are sedentary-wintering migratory, 4 are occasionally found (Table 1). The majority of the wintering birds are *Anas*, *Netta*, *Aythya* ducks, and coots as in migration period. The internationally important wintering sites of birds in the contract area are food-rich Pirallahi island, Shahdili, Turkan, Zigh, Puta (including the lagoons near Deep Water Jackets Factory), Sangachal bay and the Red lake (Table 2, Figure 2). The total number of waterfowl in Absheron-Gobustan coastal-waters were

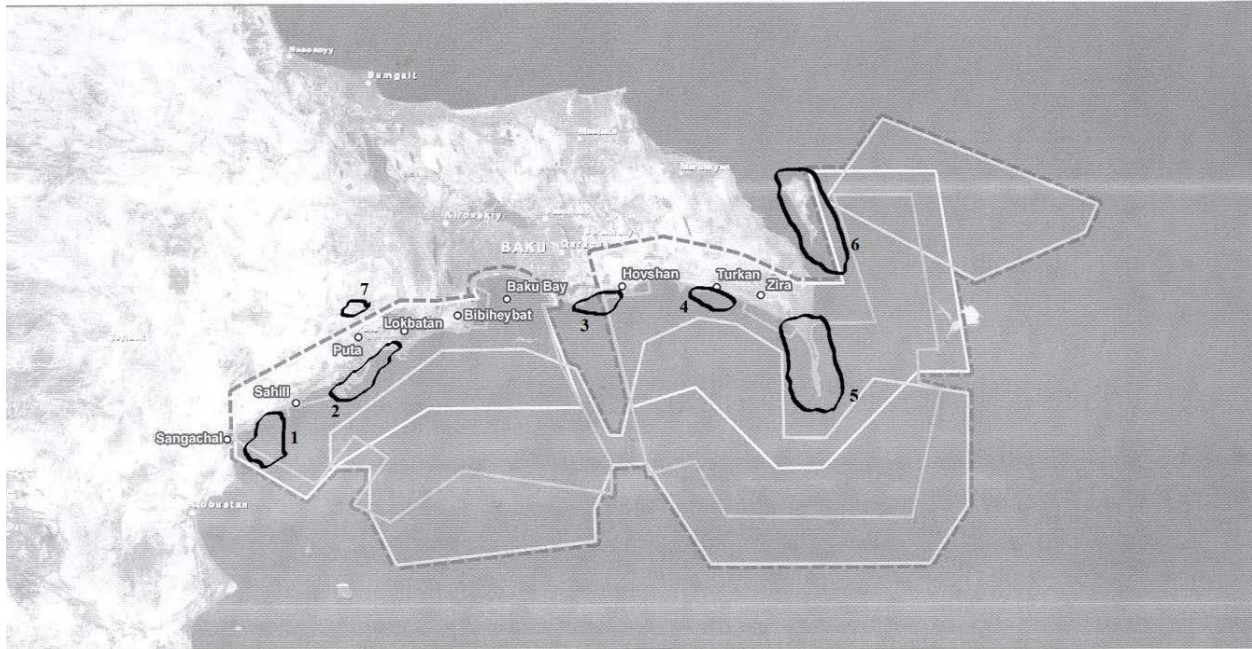


Figure 2. Internationally important gathering places of waterfowl and coastal birds in winter in South-Western Absheron contract area

Legend: 1 – Sangachal bay, 2- Puta bay (including lagoons near Deep Water Jackets Factory), 3- Zigh, 4- Turkan bay, 5- Shahdili, 6- Pirallahi, 7- Red lake.

Among the internationally important gathering places of waterfowl in Absheron-Gobustan coastal waters, the number of *Podiceps cristatus*, *Aythya ferina* and *A.fuligula*, *Fulica atra* in Pirallahi site, *Aythya ferina* and *A.fuligula* in Shahdil, *A.fuligula* in Turkan bay, *P.nigricollis* and *A.fuligula* in Zigh bay, *Netta rufina*, *A.fuligula* and *Fulica atra* in Puta bay (including the lagoons near Deep Water Jacket Factory), *A.fuligula* in Sangachal bay exceeds the 1% limit (Table 2).

As seen from Table 2, the number of waterfowl in Pirallahi, Shahdil, Puta (including the lagoons near Deep Water Jacket Factory) coastline of the Caspian Sea in the contract area also exceeds the 20000 indicator set for provision of RAMSAR status to the site (Table 2).

Nesting bird species and their vulnerable gathering places in Absheron Contract Area

The Absheron-Gobustan coastline of the Caspian Sea has an international and regional importance as bird nests site. 3 main nest sites of coastal birds have been identified in the South-Western Absheron contract area: 1. Small islands in Puta bay, 2. Gum Zira, Dash Zira, Tava and other small islands, 3. Shahdili and small islands nearby (5). Newly hatched chicken are usually 12-17-days old in mid June. At this period all chicken make large gatherings at coastal waters (30-70 meter) around the islands. Chicken can't fly at this time yet.

Younglings can easily fly and disperse to surrounding territories at the second half of July. At this time they can fly away from any possible dangers easily.

1. Puta bay (including lagoons near Deep Water Jackets factory).

Seagull nests were first identified on the bay coast islands in 2005. Nesting biotopes of birds consist of open dry lands, wet sandy places, and piled shell areas. 0.1% (985 individuals) of the

total number of birds nesting on the Caspian coastline dwells on these islands (30 *Larus cachinnans*, 400 *Sterna hirundo*, 525 *S.sandvicensis*).

2. Gum Zira, Dash Zira, Boyuk Zira, Tava and Khanlar islands

Nesting biotopes of birds on these islands consist of open dry lands, rocky, gravelly places, piled shells and wet sandy areas. There are 1-2m wide and 60-70m long reeds on the north-western side of the road from mainland to Zira Island. 140 individual seagulls were recorded on these islands (15 *Larus cachinnans*, 5 *L.genei*, 110 *Sterna hirundo*, 10 *S.sandvicensis*).

3. Shagdili site

This site includes Shagdili spit, Pirallahi, Tava (Boyik, Kichik), Koltis, Urinos – duck, Yal, Garabatdag, Gu islands and multiple platforms around the islands. Nesting biotopes of birds consist of open dry lands, wet sandy areas, piled shells, rocky places, rigs, and reeds around Shagdili spit and south-western edge of Pirallahi spit. 1.5% (3694 individuals) of the total number of birds nesting on the Caspian coast in 2005 was recorded in Shagdili Island close to Shagdili Spit. Among them, 1190 *Larus cachinnans*, 382 *Sterna hirundo*, 260 *S.sandvicensis*, 4 *Podiceps ruficollis*, 8 *Fulica atra*, 2 *Ardea cinerea*, 4 *Charadrius dubius* (6).

Apart from the islands, in some years few (4-8) individuals of *Ardea cinerea*, *Podiceps ruficollis*, *Rallus aquaticus*, *Fulica atra*, *Porphyrio*, *Himantopus himantopus*, *Recurvirostra avosetta*, *Charadrius dubius*, *Ch.alexandrinus*, *Ch.leschenaulti*, *Tringa ochropus*, *T.totanus* nest in wet sandy areas, reeds, piled shells, marshes on the coastline of the Caspian Sea where the contract area is located. Its main reason is that intensive construction work is carried out along entire coastline of the sea by physical persons, private and construction companies.

Phalacrocorax carbo, which belongs to waterfowl ecological group, nests on widely spread and numerous unused platforms.

The Oil Rocks. Located in south-eastern part of Absheron archipelago. Some rocks on the shoals of the Oil Rocks rise up to 4m above the water surface. Intensive oil production and transportation operations are in progress here. It is of no importance for nesting

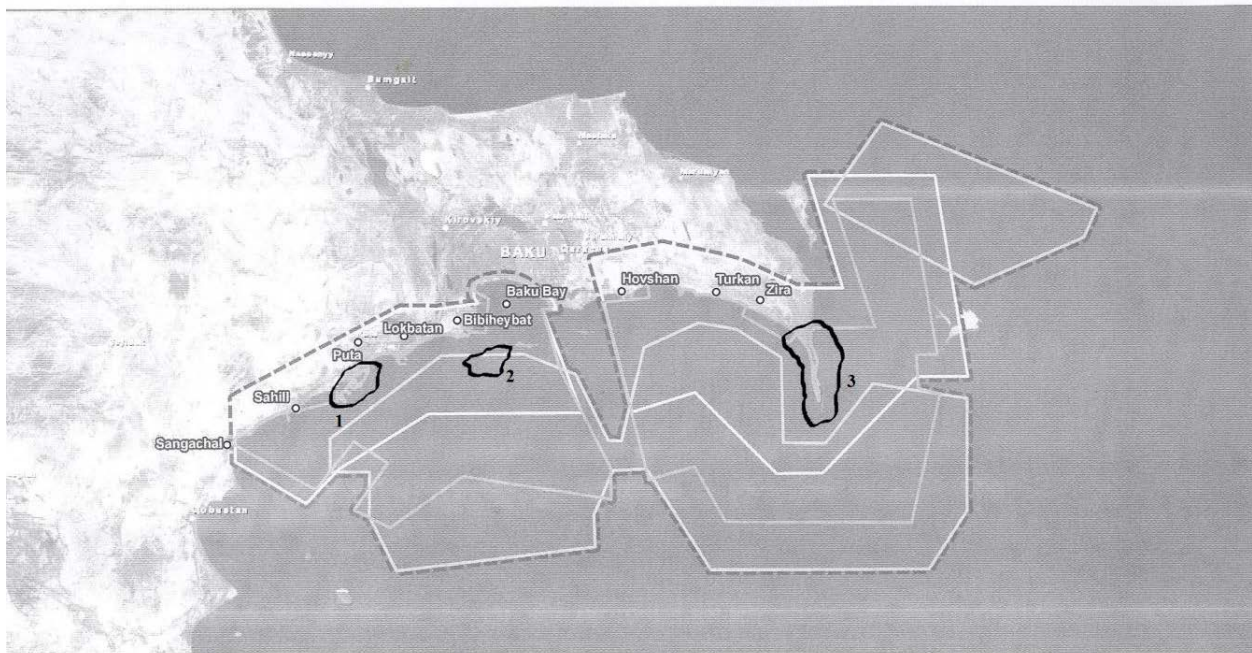


Figure 3. Main nesting sites of coastal birds in the South-Western Absheron contract area.

Legend: 1. Puta bay, 2. Gum Zira, Boyuk Zira, Dash Zira, Tava, Khanlar Island, 3 - Shahdili spit and adjacent Pirallahi, Tava (Boyuk, Kichik), Koltis, Chilov – duck, Yal, Garabatdag, Gu Islands and old offshore platforms around these islands.

Rare and endangered birds

Waterfowl and coastal birds listed in the Red Book of Azerbaijan and the Red List of the International Union for Conservation of Nature (IUCN) have 21 species in the South-Western Absheron contract area (Table 3), (1, 17). Among them, 4 species (*Pelicanus onocrotalus*, *Pelicanus crispus*, *Phoenicopterus roseus*, *Cygnus olor*) are periodically found during birds migration and wintering period in Pirallahi, Shahdil, Turkan, Zigh, Puta, Sangachal sites of the contract area, 1 species (*Porphyrio*) in Shahdili all year round, 15 species (*Anser erythropus*, *Aythya nyroca*, *Crex crex*, *Glareola nordmanni*, *Limosa limosa*, *Numenius arquata*, *Cygnus bewickii*, *Grus leucogeranus*, *Chetusia gregaria*, *Marmaronetta angustirostris*, *Melanitta fusca*, *Oxyura leucocephala*, *Gallinago media*, *Branta ruficollis*, *Numenius teuirostris*) are occasionally found during migration and wintering periods, 1 species (*Larus melanocephalus*) is found during nesting period.

Table 3 Bird species listed in the Red Book of Azerbaijan and the Red List of the International Union for Conservation of Nature at the Absheron-Gobustan coastline of the Caspian Sea where the South-Western Absheron contract area is located and their protection status

N	Species name	Protection status
1	2	3
1	<i>Pelicanus onocrotalus</i>	A
2	<i>Pelicanus crispus</i>	A, I
3	<i>Phoenicopterus ruber</i>	A
4	<i>Branta ruficollis</i>	A, I
5	<i>A.erythropus</i>	A, I
6	<i>Cygnus olor</i>	A
7	<i>C. bewickii</i>	A
8	<i>Marmaronetta angustirostris</i>	A, I
9	<i>A. nyroca</i>	A, I
10	<i>Oxyura leucocephala</i>	A, I
11	<i>M.fusca</i>	A
12	<i>Porphyrio</i>	A
13	<i>Crex crex</i>	A, I
1	2	3
14	<i>Chetusia gregaria</i>	A, B
15	<i>Vanellochetusia leucura</i>	A
16	<i>Gallinago media</i>	A, I
17	<i>G. nordmanni</i>	A, I
18	<i>Limosa limosa</i>	B

19	N. arquata	B
20	Numenius teuirostris	I
21	L. melanocephalus	A

Note :

A – Red Book of Azerbaijan

I – Red List of the International Union for Conservation of Nature

Among the mentioned species, 10 (Pelicanus crispus, Branta ruficollis , A.erythropus, Marmaronetta angustirostris, A. nyroca, Oxyura leucocephala, ađ durna, Crex crex, Chetusia gregaria, Gallinago media) are registered both in the Red Book of Azerbaijan and in the Red List of the International Union for Conservation of Nature, 8 (Pelicanus onocrotalus, Phoenicopterus ruber, Cygnus olor, C. bewickii, M.fusca, Porphyrio, Vanellochetusia leucura, L. melanocephalus), only in the Red Book of Azerbaijan, and 3 (Limosa limosa, N. arquata, Numenius teuirostris) is recorded only in the Red List of the International Union for Conservation of Nature.

Apart from the mentioned protection status of the birds recorded in the contract area, 128 species are in the appendixes of RAMSAR convention, 128 species are of Bern convention, 10 species are of CITES convention, 99 species are of Bonn convention, 99 species are of AEWA agreement (Table 3) and are protected on international level (16, 17).

Only Cygnus olor among rare species is widely populated in the contract area, and the remaining 20 species are observed occasionally or while flying through the territory.

Vulnerability of birds per (spring, autumn and winter) seasons

The most vulnerable periods for waterfowl and coastal birds to the negative impacts of seismic surveys in the contract area throughout the year are November and the first half of December in autumn, January, first half of February in winter and March in spring.

Mass population sites, species, and the number of birds are increased by migratory birds during the mentioned periods on the coastal waters of the Caspian Sea. The waterfowl species belonging to Aythya, Anas, Cygnus, Bucephala, Mergus, Podiceps, Phalacrocorax and Pelecanus breed as well as Fulica atra are more vulnerable in winter and migration period, because these birds create large gatherings during the mentioned periods.

Coastal bird species belonging to Charadriidae, Recurvirostridae, Scolopacidae and Glareolidae family feed in lakelets, sandy areas on the beach, and in the marshes. And the species belonging to Laridae family are largely found in open water areas while looking for food, and in coastline areas and on islands while resting.

Composition, Vulnerability and Protection Status of the Waterfowls and Coastal Birds Nesting on the Islands of Absheron Archipelago

12 species of waterfowl and coastal birds are noted to nest on the islands of Apsheron archipelago (Table 4)

No.		Protection Status					
		Red Book	Ramsar	CITES	Bern Convention	Bonn Convention	AEWA
1	<i>Podiceps ruficollis</i>	-	+	-	+	+	+
2	<i>P. cristatus</i>	-	+	-	+	+	+
3	<i>Phalacrocorax carbo</i>	-	+		+	-	-
4	<i>Ardea purpurea</i>	+	+	-	+	+	+
5	<i>Himantopus himantopus</i>	-	+	-	+	+	+
6	<i>Recurvirostra avosetta</i>	+	+	-	+	+	+
7	<i>Larus cachinnans</i>	-	+	-	+	+	+
8	<i>Chlidonias hybrida</i>	-	+	-	+	+	+
9	<i>Ch. leucoptera</i>	-	+	-	+	+	+
10	<i>Sterna hirundo</i>	-	+	-	+	+	+
11	<i>Sterna albifrons</i>	-	+	-	+	+	+
12	<i>Sterna sandvicensis</i>	-	+	-	+	+	+

As seen from Table 4, two bird species nesting on the islands of Absheron archipelago are specially protected, as they are included both in the Red Book of Azerbaijan and International Conventions and 10 species are protected at the international level, as they are included in the conventions and agreements.

Pirallahi island. Area is 15 km². This area is very populated. Most parts of onshore area is under the negative impact of anthropogenic factors (12, 13). There are oil contaminated areas, multiple oil fields, rigs and other construction structures on the Caspian coastal area bordering with the northern-north-eastern parts. Oil transportation vessels are observed frequently. There are no main nesting biotopes, open swamps, isles of waterfowl and coastal birds on the shoreline of the Northern Absheron Bay bordering with the western part of the Island. Due to

aforementioned reasons, the northern, north-eastern and western parts of the island are unsuitable for nesting of waterfowls and coastal birds. Natural nesting biotopes: reeds, open swamps, numerous isles and unused oil rigs used as artificial nesting areas are mainly at the southern-western edge of bordering Caspian waters. 7 bird species nest in specified biotopes. Among them 3 species (*Ardea purpurea*, *Podiceps ruficollis*, *P. cristatus*), 6 species (*Sterna sandivicensis*, *Chlidonias hybrida*, *Ch. leucoptera*, *Sterna hirundo*, *Recurvirostra avosetta*, *Himantopus himantopus*), 2 species nest (*Phalacrocorax carbo*, *Larus cachinnans*) on rigs. Among these species main vulnerable periods of *Phalacrocorax carbo* is April – June, *Larus cachinnans* – May – first half of July, *Sterna sandivicensis*, *Chlidonias hybrida*, *Ch. leucoptera*, *Sterna hirundo*, *Recurvirostra avosetta* and *Himantopus himantopus* – In May-June, *Podiceps ruficollis* and *P. cristatus* in second half of April and May - June.

Chilov – duck island. Area is 13 km² (12, 13). The island is very populated. Some areas are oil contaminated. Water traffic is intensive. No waterfowls or coastal birds nest on the island due to these or other reasons. 4 bird species (*Phalacrocorax carbo*, *Larus cachinnans*, *Sterna hirundo*, *Sterna albifrons*) nest in nearby Yal island and numerous unused rigs located in adjacent offshore areas. Main vulnerable period of the aforementioned first three species coincides with the vulnerable period in Pirallahi island. Vulnerable period of *Sterna albifrons* is May-June.

Tava (Boyuk, Kichik) and Koltis islands. Area of these islands consist of rocks and sandy places. On the island two species (*Larus cachinnans*, *Sterna hirundo*) nest on platforms. Main vulnerable period of both species coincides with those of Pirallahi and Chilov.

Garabatdag island. Natural nesting biotopes of birds consist of sandy places and artificial nesting biotopes consist of unused rigs located in the waters of the Caspian Sea around the island. *Sterna hirundo* nest on sand, *Phalacrocorax carbo* and *Larus cachinnans* nest on rigs. Vulnerable period of all three species is similar to other islands.

Gu island. Consist of bare rocks and stones. No nesting birds have been observed on the island. It becomes clear from the aforementioned that the most vulnerable places for the waterfowl and coastal birds nesting on the islands of Absheron archipelago and adjacent waters of the Caspian Sea are the southern and eastern edges of Pirallahi island, Tava (Boyuk, Kichik), Koltis, Yal, Garabatdag islands and adjacent offshore Caspian areas containing multiple unused platforms (Fig 4).

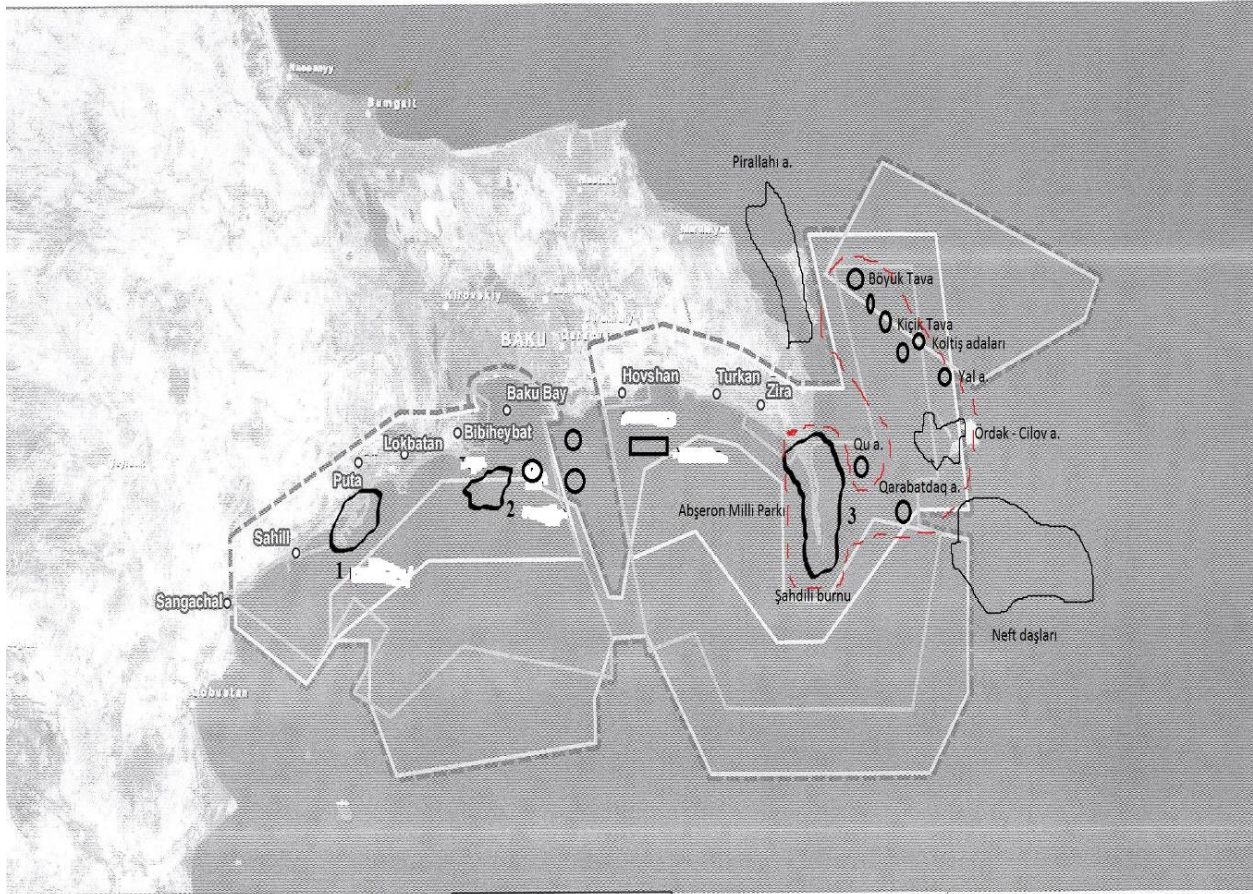


Fig 4. Main vulnerable areas for the waterfowl and coastal birds nesting in the area of Absheron archipelago islands (- - - - -).

The following conclusions are drawn from the analysis of the data:

1. Absheron-Gobustan coastline of the Caspian Sea, where South-Western Absheron contract area is located, has a rich biodiversity. 128 species of waterfowl and coastal birds dwell there. 21 of them are listed in the Red Book of Azerbaijan and the Red List of the International Union for Conservation of Nature.
2. The species content and number of waterfowl and coastal birds in South-Western Absheron contract area changes significantly in days and months during the migration period. The most active migration period is November and first half of December in autumn, and March in spring. Birds can be found all over the coastline and deep areas of the sea during the migration period.
3. International vulnerable gathering places of birds in winter are coastal waters of the Caspian Sea at Pirallahi, Şahdili, Turkan, Zigh, Puta (including lagoons near Deep Water Jackets Factory) and Sangachal, and the Red Lake.
4. The main and vulnerable gathering place of the birds of coastal ecological group during nesting period are Şahdili Spit, Pirallahi, Tava (Boyuk, Kichik), Koltis, Yal, Chilov – duck, Garabatdağ islands, small islands near Puta bay, Qum Zira, Dash Zira, Tava and Khanlar islands. The most vulnerable period for nesting birds is from second half of April to second half of July.

5. For the last 10 years, intensive oil production and transportation is carried out, as well as intensive construction work is carried out by physical persons, private companies in the territories where South-Western Absheron contract area is located (in bird habitats). In order to have objective assessment of the impacts of the conducted and planned to conduct seismic surveys to birds, it is important to study bird species, present condition of their habitat, population as per biotopes and their number.
6. It is not rational to conduct seismic surveys in the islands and in the Caspian aquatory near them from second half of April to second half of July in order to prevent perishing of birds during reproduction period.
7. It is important to conduct seismic surveys by stages to minimize impacts on birds and their main habitat in winter season.

Note that ELF Petroleum company conducted seismic surveys by stages on Kurdili island and surrounding coastal waters and this had positive results.

Vocabulary

Region – According to the description given on the third edition (15) of the reference book “Waterfowl population assessment”, the survey sites along the Caspian Sea are included to the Western Asia and Caspian region.

1% limit – is a criteria defined and widely used in Ramsar convention to indicate the international importance of wetland biotopes. According to Ramsar convention, a wetland is considered internationally important if 1% or more of any waterfowl species dwell there.

Ramsar site – Ramsar is an Iranian city. An international convention on wetlands was signed in this city in 1971. Azerbaijan signed the Ramsar convention on 18th of July, 2001. The sites included into the list of internationally important wetland sites are called “Ramsar sites”.

To provide Ramsar status to any wetland, that site must meet the following requirements:

- a) 20000 or more waterfowl should exist in the site; or
- b) Some group of waterfowl in large number should exist in that wetland biotope showing its importance, productivity, and diversity.
- c) It should support 1% or more of the individuals in a population of one species (subspecies) of waterfowl existing in the region (15, 16).

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