

APPENDIX 6B

Bird Survey Report

Appendix 6B
Bird Survey

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1. Introduction

The Absheron-Pirallahi coastline of the Caspian Sea represents a migration route for waterfowl and coastal birds nesting in European parts of Russia, western Siberia, north-western Kazakhstan and migrating to southern coasts of the Caspian Sea, the Kur-Araz lowland, Turkmenistan, southwest Asia and Africa for wintering. During the migration, a large number of birds stop in this area for rest and feeding. Then, they stay in this area for wintering and nesting in numbers of international significance, while the rest fly on (4, 5, 8, 9, 10).

In addition to its diverse bird fauna, this area also represents importance to the development of the oil industry. A large number of birds, including those listed in the Red Book of Azerbaijan and the Red List of Threatened Species of the International Union for the Conservation of Nature (IUCN) (1, 14), can perish as a result of negative impacts of oil production and transportation in this and adjacent areas.

The objective of the survey is to analyse the literature on the number and species of the birds inhabiting the area, which has been published since 2002, and to identify the birds temporarily and permanently inhabiting the Absheron-Pirallahi coastline and the importance of this area for these species.

1.1 Research carried out and its analysis

The migration (initial, active and in the last days), wintering and reproduction periods of waterfowl and coastal birds differ from each other. However, the birds of Pirallahi-Shahdili area of the Caspian Sea have been studied only in winter (11-12.01.2002; 22-23.01.2004; 15-16.01.2005; 15-26-01.2006), in the first days of spring migration (18.02.2003), during incubation and hatching phases (28.05-4.06.2006) of the reproduction period (3, 11).

1.2 Biotopes, migration, species and numbers of birds during wintering and reproduction

Pirallahi coastline: The habitat of birds mainly stretches from a large shallow coastal area of the sea (4-5 km into the sea) to a narrow (5-20m) humid sandy area. Coastal water in the north and south of the island (southern Absheron bay) is contaminated with oil. Only occasional movement of motor vehicles of oil companies can be observed here. This disturbs the birds and forces them to move to other areas. The south-eastern and western coastline of the island (northern Absheron bay) is not contaminated. On windy days (depending on wind direction), birds shelter either on the western or eastern side of the bay, or near the dam connecting the island with the Absheron Peninsula. Water depth here is 5m in the centre, but it sharply decreases towards the coast. Coastal pattern is quite diverse. While the western coastline mainly consists of ravines, the south-eastern part of the island is covered with moist sands. The constant movement of people can be observed in the sandy areas. There are underwater and above-water rocks in the central part of the bay. The complex terrain limits the movement of motorboats. The diversity of substrates creates favourable conditions for the development of phyto-benthos and zoo-benthos, which serves as food for the birds. Thirteen species of phyto-benthos and 10 species of zoo-benthos have been recorded in this area. The biomass of *Abra ovata* and *Mytilaster lineatus* bottom fauna is dominant (7). This leads to the accumulation of internationally significant numbers of birds in clean water areas of the island during wintering and migration.

In the beginning of spring migration (18.02.2005), 19 bird species – a total of 7559 birds - dwell in coastal waters of Pirallahi Island, 7397 of them are waterfowl, while 162 are coastal birds. Among the waterfowl only the number of *Podiceps cristatus* and *Aythya ferina* exceeds the 1% limit (12, 13) established for the provision of the RAMSAR status (i.e. of international importance). These species are endangered, i.e. *Cygnus olor* is included in the Red Book of Azerbaijan, while *Pelecanus crispus* is included both in the Azerbaijan Red Book and the IUCN Red List of Threatened Species.

Shahdili coastline: The habitat of waterfowl and coastal birds consists in a large shallow coastal area of the sea (4-5 km into the sea), the lagoons in the dry land of the Shahdili cape,

thin reed and tamarisk bushes, narrow (2-10 m) moist sands, Tulen, Gu, Greater Tava, Small Tava and other islands. 783 hectares of the territory is part of the Absheron National Park. There is no oil contamination on the territory of the park. On windy days, birds shelter in Shahdili lagoons, different parts of the island stretching deep into the sea (10 km, width 600 m) and other islands. The sea is rich in key food source of the waterfowl such as seaweed, phyto-benthos and zoo-benthos. The constant movement of motor vehicles belonging to people catching fish outside protected areas, poachers and oil companies can be observed. This disturbs the birds and forces them to move towards quieter areas of sea which are not as abundant in terms of food. 26 species of birds (a total of approximately 28436 birds) dwell here in the beginning of the spring migration (19.02.2005). 28239 of these birds are waterfowl and 197 are coastal birds. The number of waterfowl such as *Podiceps cristatus*, *Cygnus olor*, *C.cygnus*, *C.bewickii*, *Netta rufina*, *Aythya ferina* and *A.fuligula* exceeds 1% limit established for the provision of the RAMSAR status in wetland areas and the total number of waterfowl exceeds the 20,000 threshold (12, 13). Some endangered birds dwell here, thus *Phoenicopterus roseus*, *Cygnus olor*, *C.bewickii* are listed in the Red Book of Azerbaijan, *Aythya nyroca* in the IUCN Red List of Threatened Species and *Pelecanus crispus* is included both in the Red Book of Azerbaijan and the IUCN Red List of Threatened Species.

1.3 Species and numbers of birds during reproduction period

Pirallahi coastline: Birds nest on old rigs and some small islands. Only 14 species of waterfowl (*Phalacrocorax carbo*) and 4 species of coastal birds (*Larus cachinnans*, *Sterna sandvicensis*, *S.albifrons*, *S.hirundo*) were registered in this area. A total of 102 birds were registered.

Shahdili coastline: Birds nest on old rigs, reeds, on Sah, Tulen, Gu and other islands. Only four species of waterfowl *Phalarocorax carbo* (a total of 30), *Tachybaptus ruficollis* (a total of 6), *Tadorna ferruginea* (a total of 2), *Fulica atra* (a total of 15) and 12 species of coastal birds were registered. The most numerically abundant were *Larus cachinnans* (a total of 1760), *Sterna hirundo* (a total of 300) and *S.sandvicensis* (a total of 260). In total, there were 2552 coastal birds (5).

The reproduction period of birds in the Pirallahi and Shahdili coastline starts at the end of April / beginning of May and continues until mid-July. At the end of July and beginning of August they leave nesting places and disperse across in the territory.

1.4 Species and number of wintering birds

Pirallahi coastline: The absolute majority of wintering birds are waterfowl. The average number of waterfowl in 2002-2006 was 24873, while the number of coastal birds was 181.

In different years different species of birds reached internationally important numbers. For example, the number of *Podiceps cristatus* exceeded 1% limit established for the provision of the RAMSAR status in wetlands in 2002, *Aythya ferina* passed this threshold in 2004, 2005, 2006, while *Aythya fuligula* and *Falica atra* in 2006. The total number of waterfowl exceeded the 20,000 threshold required for the RAMSAR status to wetlands.

Two species of rare and endangered birds were registered. They were *Cygnus olor* listed in the Red Book of Azerbaijan and *Numenius arquata* listed in the IUCN Red List of Threatened Species.

Table 1 Species and Numbers of Birds in the Area (Total Number)

Name of species and ecological group	11-12.02. 2002		12-19.02. 2003		22-23.01. 2004		15-16.01. 2005		28.05-04.06. 2005		15-26.01. 2006		1% threshold
	Pirallahi	Shahdili	Pirallahi	Shahdili	Pirallahi	Shahdili	Pirallahi	Shahdili	Pirallahi	Shahdili	Pirallahi	Shahdili	
Waterfowl Total	22442	21733	7397	28239	22138	22005	29027	29063	14	53	25259	12020	
<i>Podiceps ruficollis</i> - little grebe		24	7		11		8	2		6		18	10000
<i>P.nigricollis</i> - black-necked grebe	51	15		14	148	27	119	44			219	44	250
<i>P.auritus</i> – eared grebe					1			1			2	11	150
<i>P.grisegena</i> – red-necked grebe		2			6								150
<i>P.cristatus</i> – great crested grebe	376	9	120	120	61	43	66	27			90	82	100
<i>Pelicanus crispus</i> – Dalmatian pelican			3	2		4							110
<i>Phalacrocorax carbo</i> – Great Cormorant	27	6	19	30	16	4	20	1	14	30	55	250	1000
<i>Ph.pygmaeus</i> – little cormorant	2	15	3	12								44	1000
<i>Cygnus olor</i> – mute swan	95	36	350	3700	1			2				300	2500
<i>C.cygnus</i> - whooper swan	19	2	150	400	18			16			4	16	200
<i>C.bewickii</i> –Bewick’s swan				33									5
<i>Tadorna ferruginea</i> – Ruddy Shelduck	1									2			500
<i>Tadorna tadorna</i> – Common Shelduck											1	48	800
<i>Anas acuta</i> – northern pintail												800	7000
<i>A.penelope</i> – Eurasian Wigeon			470	1200		338		25				370	2500
<i>A.crecca</i> – Common Teal	25	20	600			77							15000
<i>Anas platyrhynchos</i> – Mallard	108	1016		2200	365	1479	67	2017				350	8000
<i>A.clupeata</i> – Common shoveller			300	1300		9		42					4000
<i>A.sterepera</i> – Gadwall				1		6							1300
<i>Netta rufina</i> – Red-crested Pochard		1	820	6000	2	13	17	3067			493	1100	2500
<i>Aythya nyroca</i> – Ferruginous Duck				22									1000
<i>A.ferina</i> – Common Pochard	99	3192	375	4500	8910	5360	4632	6660			8088	7000	3500
<i>A.marila</i> – Greater Scaup			180	400								15	1500
<i>A.fuligula</i> – Tufted Duck	1845	4142	2100	8500	1606	10000	883	9645			4965	312	2000
<i>Bucephala clangula</i> – Common Goldeneye	3	1			1	3		5			5	44	250
<i>Merqus albellus</i> – Smew	2	1				4					16	18	300
<i>M.serrator</i> – Red-breasted Merganser	56	1			25	3	33				163		200
<i>Fulica atra</i> – Eurasian Coot	19835	13230	1900	3600	11064	4612	23177	2010		15	11284	1200	20000
Coastal birds Total	412	369	162	197	24	23	180	144	102	2552	108	256	
<i>Botaurus stellaris</i> – Eurasian Bittern		1											

<i>Egretta garzetta</i> – Little Egret	16	18	4	6	8	3					4		580
<i>E.alba</i> - Great Egret		6			2	6					4		1000
<i>Ardea cinerea</i> - Grey Heron	4	6			2	3				4			
<i>A.purpurea</i> – Purple Heron													
<i>Phoenicopterus roseus</i> - Greater Flamingo				6							4		2900
<i>Recurvirostrab avosetta</i> - Pied Avocet				6	13								
<i>Charadrius dubius</i> – Little Ringed Plover													
<i>Ch.hiaticula</i> – Ringed Plover	25				5		15				4		
<i>Ch.alexandrinus</i> – Snowy Plover		1									10		
<i>Ch.beshenaultii</i> – greater sand plover	2												
<i>Pluvialis squatarola</i> – Grey Plover					4	1							
<i>Calidris temminckii</i> - Temminck's Stint	190	60											
<i>C.alpina</i> – Dunlin		1	11	48			75						106
<i>Gallinago gallinago</i> – American snipe				4		10		3					
<i>Numenius arquata</i> - Eurasian Curlew	1												
<i>Tringa nebularia</i> - Common Greenshank		4											12
<i>Larus minutus</i> – Little Gull							21	3			4		
<i>L.ridibundus</i> – Black-headed Gull	1						1	3					
<i>L.genei</i> – Slender-billed Gull	6				1					90			
<i>L.canus</i> – Common Gull	1				1		12				11	18	
<i>L.cachinnans</i> – Caspian Gull									20	1760			
<i>L.argentatus</i> – Herring Gull	66	290	141	94	1		56	134			85	104	
<i>Sterna sandvicensis</i> - Sandwich Tern								1	32	260			
<i>S.albifrons</i> – Little Tern									8	80			
<i>Sterna hirundo</i> – Common Tern									42	300			
<i>Ch.leucopterus</i> – White-winged Black Tern										20			
<i>Chlidonias hybrida</i> – Whiskered Tern										10			
<i>Gallinula chloropus</i> – Common Moorhen				12									
<i>Rallus aquaticus</i> – Water Rail				14						10		12	
<i>Porphyrio porphyrio</i> – Purple Swamphen										4			
Total number	22856	22000	7559	28436	22162	22028	29207	23714	116	2605	25267	12276	
Total species	25	26	19	26	24	20	17	20	5	16	21	26	

Shahdili coastline: As is the case in Pirallahi, the majority of birds in this coastline are waterfowl. The total number of waterfowl in 2002-2006 was 20004, while coastal birds numbered 198. The various species of waterfowl reached a number of international importance in different years (2, 11). For example, the number of *Podiceps cristatus* exceeded 1% limit established for the provision of the RAMSAR status in wetland areas in 2002, *Aythya ferina* passed this threshold in 2004, 2005, 2006, while *Aythya fuligula* and *Falica atra* in 2006. The total number of waterfowl exceeded the 20,000 threshold required for assignment of RAMSAR status to wetland areas

Three species of rare and endangered birds were registered. They were *Cygnus olor* and *Porphyrio porphyrio* listed in the Red Book of Azerbaijan and *Pelecanus crispus* listed both in the Red Book of Azerbaijan and the IUCN Red List of Threatened Species.

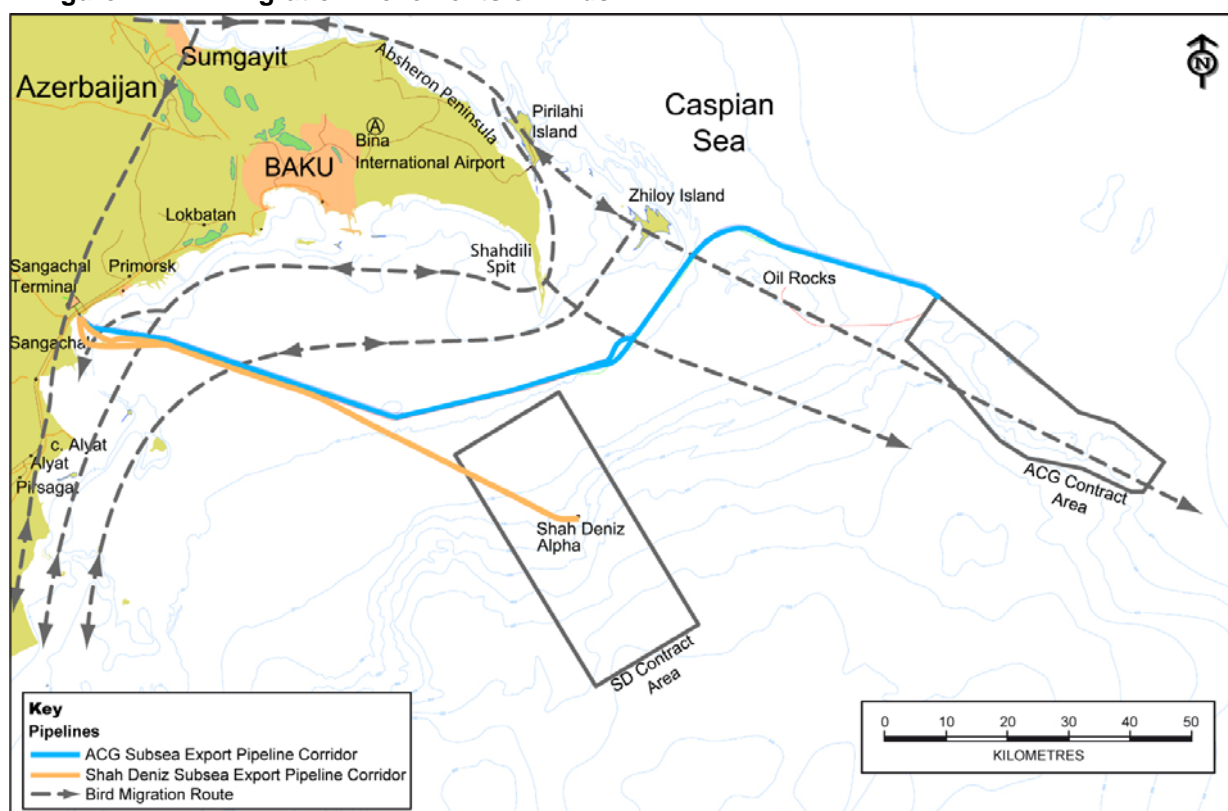
1.5 Migration Period and Direction

The autumn migration of the waterfowl and coastal birds in Absheron mainly starts in the second half of August and continues until mid-December. In case of severe winter conditions in Russia, this migration continues until 10 January. The most active period of migration is November. The spring migration starts in the second half of February and finishes in April with March being the most active period (9, 10). 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 (Figure 1). In spring, 39.76% of the birds fly to the north, 26.32% to the northwest and 25.50% to the northeast (6).

The following conclusions from the analysis of the data can be drawn:

1. Pirallahi and Shahdili coastlines have an international importance as a waterfowl habitat. The total number of waterfowl migrating or wintering in this territory exceeds the 20,000 threshold set for the provision of the RAMSAR status of wetlands and the number of individual species (*Podiceps cristatus*, *Cygnus olor*, *Netta rufina*, *Aythya ferina* ve *A.fulica*) is above 1% limit for the said status;
2. 59 species of birds of waterfowl and coastal ecological groups inhabit the Pirallahi and Shahdili coastlines; and
3. In order to provide an objective assessment of the negative impact on birds around the Shah Deniz Contract Area, birds must be monitored throughout the year (in winter in January, during the active migration period in March, egg-laying and hatching phases of the reproduction period in May-June, the growing and dispersing period of younglings at the beginning of August, and during November migration period).

Figure 1 Migration Movements of Birds



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