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7. Biodiversity and nature conservation importance for Europe of deltas and wetlands in Azerbaijan

SULTANOV Elchin[1,2,3]

[1]Baku Engineering University, 120 Hassan Aliyev, Khirdalan city, Absheron district, AZ0101, Azerbaijan Republic; [2]Institute of Zoology of National Academy of Sciences of Azerbaijan Republic, A. Abbaszade, passage 1128, block 504, Baku, AZ 1004, Azerbaijan Republic; [3]Azerbaijan Ornithological Society, Kh. Mammadov str., block 4944a, build. 3, ap.148, AZ1123, Azerbaijan Republic; e-mail: elchin_sultanov@aos.az

**Address of author responsible for correspondence: SULTANOV Elchin, Baku Engineering University, 120 Hassan Aliyev, Khirdalan city, Absheron district, AZ0101, Azerbaijan Republic; e-mail: elchin59@gmail.com*

Abstract: Azerbaijan Red Data Book includes 39 species of mammals (14 – in European Red List (ERL), 72 – birds (43 in ERL, from them 24 – waterbirds species), 14 – reptiles (3 in ERL), 6 – amphibians (3 in ERL), 9 fishes and 75 – insects. Some waterbirds' species according our data (many years counts) consist 38% (*Oxyura leucephala*) and even 52% (*Netta rufina*) from total Western Palearctic Population (Flyway). 16 potentials and 2 registered Ramsar sites. Up to 1,5 mln waterbirds had wintering in Azerbaijan in 1990s - 2000s and up to 1 mln in 2010s (third country in Europe). Only along Caspian Sea coast more 700 000 waterbirds have wintering and more 200 000 have nesting (from them 40 000 on islands and old oil platforms in Caspian Sea). Azerbaijan is 4th country of Europe according to number of birds' species included in IUCN Red List and from these 36 species 22 are waterbirds including Dalmatian pelican, White-headed Duck, Lesser White-fronted Goose etc.
During wintering majority consist ducks, coot, geese and different waders, also cormorants and grebes. Swans and pelicans are especially numerous (up to 30 and 2 thousand consequently) in cold winters when frost and snowing occur. During breeding time - mainly herons, ibises, terns, gulls, pygmy cormorant, purple gallinule and other Rallidae species, some waders.
Main threats for wetlands and waterbirds are unsustainable water supply, illegal hunting and fathering, low level of ecological education of local population.
Keywords: biodiversity, water birds, wetlands, conservation.

INTRODUCTION

Azerbaijan is third in the Europe according to number of wintering waterbirds (up to 1.5 million; Rose & Taylor 1993; Sultanov, Mustafayev, 1994; Sultanov, 1997) of Caspian-West Siberian-East African Flyway. Not lesser than 193 species waterbirds occur in Azerbaijan by the species list of Azerbaijan. 13 from their are Globally Threatened Species, 13 species are included in Red Book of Azerbaijan and only 5 species included in these both Red Data Books (www.aos.az).

Biodiversity of Azerbaijan include more 400 species of birds, more 100 species of fishes and more 100 species of mammals, 12 species of amphibians, 54 species of reptiles, more 4000 species of plants and to 20 000 species of invertebrates. Red Data Book of Azerbaijan includes more 300 species of plants and 223 animals (Red Data Book of Azerbaijan, 2013). We should appreciate high a native variety that we have in Azerbaijan. In Azerbaijan we have 35 Globally Threatened (IUCN Red List) and 72 species included in the Red Data Book of Azerbaijan.

About 60 species only waterbirds have the European Conservation Concern. Many Threatened Species are common or numerous on territory of Azerbaijan as White-headed Duck, Dalmation Pelican or Little Bustard. Some species were excluded from Red Data Book of Azerbaijan just after estimation of number made on territory of Azerbaijan as Pygmy Cormorant or Lesser Kestrel. Azerbaijan already now is a reserve for many species, which one almost has disappeared in many other countries.

We have many literature sources about Gyzylagach National Park (Grekov, 1965 a,b; Krivonosov et c.,1977; Krivonosov Morozkin,1984; Litvinova, 1979; Konovalova,1979; Morozkin,1975.1979; Oliger,1967; Tuayev ,1957; Tugarinov, Kozlova-Pushkaryova,1938; Paynter et al. 1996) but only three (Tuayev, 1975) about birds in general of Kura-Araz valley including Kura estuary (they show all together 66 species of waterbirds but do not show number) or with mention of Kura river Delta (Sultanov et al., 1998b; Sultanov et al. 2000). Number of wintering Waterfowl was here near 5-7 million, including near 4 mln surface –feeding ducks, 2-3 mln coot and near 850,000 diving ducks (Vinogradov, Chernyavskaya, 1963). Last authors show 183 species and subspecies for preserve. Total number of wintering Waterfowl in 1966/1967 years was only 1,2 mln (Mikheyev, Orlov, 1972), during 1971-1978 years these number fluctuated around 338-718 thousand (reports of National Park). Our surveys show to 30 thousand wintering birds for Kura Delta.

It is estimated that along Azerbaijan shores along, no fewer than 250,000 birds' individuals breed (over 40,000 on islands and old oil platforms (Sultanov, Kerimov, 1998; Sultanov, 2004). In the 1970s, over two million waterbirds were shot annually in Azerbaijan (Ilyichev 1982). Last investigations show that line density of waterbirds during wintering only along Caspian Seacoast from Sumgait (40 km to north from Baku) to south to cape Pirsagat achieve 668 birds/km (Sultanov, 1997).

Azerbaijan is situated on the most important way of migration for waterbirds. As minimum 10-12 millions of only Waterfowl birds migrate along Caspian coast during one season (Krivonosov, 1979). Our modern data for Azerbaijan show near 700 thousand waterbirds in wintering. The number of migratory birds we estimate 8-10 times more than wintering birds, especially many birds and during long time (from October to April) occur on the lakes, which are more close to sea (more close to ways of migration). During wintering majority consist ducks (more 1,000,000), coot (near 200,000), geese (near 40,000), also many swans (up to 30,000 in extremely cold winters) and pelicans (up to 3,000); during breeding - herons, ibises, terns, gulls, cormorants, purple gallinule et c.; in migration season we have too waders (Sultanov, Mustafayev, 1994; Sultanov, 1997; Sultanov et al.,2000; Sultanov, 2004; our unpublished data).

MATERIALS AND METHODS

For writing this article we used results of winter counts of birds on main wetlands of Azerbaijan during 32 years (1993-2015). Different methods of count were used: helicopter count (during January, March, April, September, October and December 1996 AND January 1993), also counts from lands along coast and count from Vessel and motor boats. All main islands also were counted. Results of counts were combined for receiving maximal full data about bird number and are reflected in tables 8 and 9. Also counts of breeding waterbirds in 1996-2000 and 2003-2007.

Helicopter counts are most efficient for short-time censuses to estimate total populations at coastal locations but we have number only for some species like *Tadorna tadorna, Tadorna ferruginea, Ardea cinerea, Ardea purpurea, Fulica atra, Tetrax tetrax* also from predators *Halietus albicilla, Circus aeruginosus, Circus cyaneus.* As a rule, we can different following groups of birds – swans, pelicans, cormorants, white herons, ducks, waders (sometimes) were made by special method using team from 4 counters (2 counter on each site of helicopter (left and right). Then received figures were worked with use of statistical methods (statistical average and statistical error were counted). Identification of species were possible after repeat counts from selected points on ground when species of birds in concentrations were possible to identify using binocular and field telescopes. According to our results no more than 15-20% from total number could be statistical error in these counts.

Counts from boats and vessels were made with use of binocular (from small vessels of oil fleet sometimes we could use field telescopes). Counts from ground along the shore of lakes and Caspian Sea coast were made using mainly field telescopes with maximal zoom up to 60x. Combined boat and shore-based surveys proved most applicable at Lakes, Yashma Island and the Kura Delta. Censuses from vessels were necessary to survey decommissioned oil platforms and islands (Sultanov,2004).
Totally 23 most important wetlands were covered by counts including sites along Caspian Sea coast. 2 from them –Ramsar sites and 16 – Potential Ramsar sites (Sultanov et al., 2000).

RESULTS AND DISCUSSIONS

Overall bird populations fluctuated on the sites along Caspian Sea coast from a low of 70,000 (April,1997) to a high of 1,076,000 (winter 2002-2003). Waterbirds populations reach their maximum in

December–January. Outside that period the yearly dynamics reflect around half the maximum in November and February, and in March–April and September–October (as reflected in the one-day census) can reduce to 10–30% of the maximum. In May–June, the proportion is 30–40% (Sultanov, 2004).
The sharp increase in Caspian Sea oil production represents an enlargement of the already severe risk of oil pollution of waterbirds in the region. It is therefore essential to conduct regular ornithological monitoring of that region, especially including oil pipeline routes, and to publish rapidly the results within the Caspian countries and in journals worldwide.

Table 1. Threatened species of animals and plants in Red Data Book of Azerbaijan and European Red List (CR-NT).

Higher plants	Mammals	Birds	Reptiles	Amphibians	Fishes	Insects
300 (*Taxus buccata, Trapa hyrcana, Pinus eldarica, Rhododendron caucasicum etc*.)	39/109 (*Panthera tigris (Ex), Hyena hyena, Panthera pardus tullianus, Gazella subgutturosa, Ovis ammon gmelini etc*.)	72/105 *(Lyrurus mlokosiewiczi, Tetraogallus caucasicus, Tetraogallus caspicus, Francolinus francolinus etc*.)	14/56 *(Testudo graeca, Agama ruderata, Mabua aurata, Vipera xantina etc.)*	6/42 *(Pelobates syriacus, Pelodytes caucasicus, Bufo bufo et c.)*	9 *(Lucioperca marine, Pelecus cultratus, Abramis sapa bergi etc.)*	75 *(Purpurienus talyschensis, Dorcadion talyschense, Colias caucasica, Pararge adrastoides etc.)*

Quit high % of species included in Red List of Europe are represented in Azerbaijan e.g. 36% of all mammals (39 from 109 species), 69% of birds (72 from 105), 25% of reptiles (14 from 56) etc. We have to take in account that territory of Azerbaijan is lesser than 1% of territory of Europe.

Table 2. Estimation of importance of waterbirds of Azerbaijan according to their % from Western Palearctic population

Species	Western Palıearctic pop. max	1% threshold	Azerbaijan max. for 2003-2007	% from WP population	Gyzylagach National Park	Aggol National Park (mainly underestimation)
Pygmy Cormorant (*Microcarbo pygmaeus)*	37 000 (only Europe)	370	13 425	36	11900	3150
Dalmatian Pelican (*Pelecanus crispus)*	15 800	158	2602	16,5	2360	53
Ferruginous Duck (*Aythya nyroca*)	25-100 000	1 000	4 203 (w) 1500 br.(est.)	4,2 1,5 br.	4100 (w) 500 br.	- 200 br.(est.)
White-headed Duck (Oxyura leucocephala)	13 000	130	2 000 (up to 5 000 in 2015)	38	(1840)	(3000)
Cattle Egret (*Bubulcus ibis)*	570 000	5 700	12680	2,2	8270	3150
Great White Egret (*Ardea alba*)	54 300 (only Europe)	543	2333	4,3	1960	4
Little Egret (*Egretta garzetta)*	215 000 (only Europe)	2 150	23580	11	5850	15391

Glossy Ibis (*Plegadis falcinellus)*	166 000	1 660	17536	10,5	6000	4230
Graylag goose (*Anser anser*)	900 000	9 000	20 000	2,2	17596	(2000)
Anser erythropus (Lesser White-fronted Goose)	50 000	500	3752 + 3500 (Nakhchivan, 2012-2013) = 3500	15	3652	(30)
Tadorna tadorna (Shelduck)	500 000	5 000	9 850	2	4600	3283
Tadorna ferruginea (Ruddy Shelduck)	70 000	700	1806 and 15 000 (in 2012-2013)	21,5	1800	(6)
Netta rufina (Red-crested Pochard)	483 500	4835	252 567	52	188000	(3)
Aythya ferina (Common Pochard)	1 450 000	14 500	266 340	18,4	197000	(503)
Marmaronetta angustirostris (Marbled Duck)	56 000 (only Europe)	560	1 600 (w) 200-500 bred. est.	2.7 (w) 0.5-1br.est.	1600 (w) 200 breed. est	- 100 br. est.
Mareca penelope (Eurasian Wigeon)	2 500 000	25 000	58 471	2,4	51800	(17)
Spatula clypeata (Northern shoveler)	940 000	9 400	55 400	6	41000	4452
Fulica atra (Common Coot)	6 250 000	62 500	188 144	3	80000	15310

From presented waterbirds' species according our data (many years counts) some species consist 38% (*Oxyura leucephala*) and even 52% (*Netta rufina*) from total Western Palearctic Population (Flyway) in winter period. Azerbaijan also keep 36% of breeding population of Pygmy Cormorant and 18,4% of breeding population of Ferruginous Duck for Western Palearctic. What demonstrate high importance of Azerbaijan' wetlands for wintering and breeding many waterbirds' species.

Table 3. Monthly share (in %) of main groups of waterbirds (by results of helicopter counts 1993 and 1996)

Months	Cormorants	Pelicans	Herons	Flamingo	Swans	Geese	Ducks	Coots	Waders	Gulls and terns
I-II	0,4	1,7	+	+	0,15	0,4	70	27	+	0,44
III	5,5	0,14	0,6	4,5	0,2	1,4	39	28,5	10,6	9,5
IV	2,5	+	1,9	2	0,2	+	32,5	20	7,3	33.4
IX	3,5	+	11	0,16	+	-	47	16,5	7,6	13,2
X	3,4	+	3,4	0,2	+	-	46,8	22	7,7	16,4
XII	1,6	+	0,9	0,6	+	10,8	59,0	19,3	7	0,6

We can see seasonal dynamics of main systematics groups of waterbirds that in the most fully studied plot (all 3 methods). The birds' population is maximal in the winter and minimum in September-October

(10-12% of the maximal number in winter). So, the population is maximal in the winter, minimal at the end of the spring and beginning of the fall migration season and rises once again in the breeding season (46% of the maximum; surveys did not cover summer postbreeding season). In general, fluctuation in population over the whole surveyed territory was from 700,000 (in the winter) to about 70,000 (in April). Total waterbirds population of Caspian offshore is maximal in December-January. It drops by almost half in November and February, and during the migration season it is 7,5-3,3 times less. Increasing of number occur from September to December and from February to April and May. By our estimation total number of migratory birds which cross Azerbaijan in autumn is apparently about eight-ten time greater than that recorded during wintering.

During the winter season and closer to it ducks and coots are dominating (63-84%), while during the beginning of breeding season there are more Lariidae species (Gulls and Terns; up to 33,4%), cormorants (up to 5,5%) and herons (up to 11%) with waders (both groups – shorebirds). During migration periods the share of waders is significant (to 10,6% with herons). Cormorants and flamingo (up to 5,5 and 4,5 %) are found as rule from October to March-April; swans (to 0,2%) - mostly from January to March and geese (to 10,8%) - in December-February (table 4).

Table 4. Monthly dynamics of waterbirds along Caspian Sea coast of Azerbaijan (including biggest wetlands in limit 50-km distance from coastline, results of all 3 forms of counts)

Place	Jan.97	March 96	Apr.96	May.96	June 96	Sept.96	Oct.96	Nov.96	Dec.96
North coast without Aghzybir and Yashma			178			1192	26639		1847
Aghzybir			6178	9091	2911	6339	23606	5554	4571
Yashma			8146	1249	5377	1221	2678	30419	5501
North coast total			14502	10340	8288	8752	52923	35973	11919
Absheron coast	55036	17840	4271	1560	1052	4479	6545	22053	72664
South coast	152803	29388	17596	34954	44118	8628	31943	117919	128552
Lake Flamingo	9285	8304	5045			6460	9431		31238
Gyzylagach	365362	51733	30923			50275	112926		428854
Hajigabul	152803						3523		23341
Total	**735289**	**107265**	**86839**	**46854**	**53458**	**87346**	**270214**	**211918**	**708487**

Table 5. Main sites of congregations of waterbirds along Caspian Sea coast and iland wetlands (1993-2005)

Plots/Months	XI-II (for one day count)	III-IV IX-X	V-VI
Coastal	**wetlands**		
Lake Agzybir	Up to30,000	Up to 20,000	Up to 10,000
Island Yashma	Up to 30 000	Up to 10,000	Up to 5,000
Mardakan-Buzovna cost	1719-3663		
Island Pirallahy	Up to 35,000	Up to 5,000	
Shakhdili-Tava	Up to 100,000	Up to10,000	Up to 10,000
Tukan-Hovsan-Zikh	Up to 25,000		
Baku Bay	Up to 30,000	Up to 10,000	Up to 5,000
Lake Gyrmyzygol (Red)	575-3720		
Factory “Shelf”- settl. Sahil	Up to 100,000	Up to 10,000	Up to 10,000
Sangachal (cape)	Up to 30,000		
Gobustan Bay	Up to 20,000	Up to 15,000	
Alat Bay	Up to 60,000	Up to 5,000	
Islands of Baku arch.(total)	Up to 30,000	Up to 20,000	
Island Zenbil			Up to 5,000
Island Gil			Up to 10,000
Island Garasu			Up to 10,000

Island Babur-Gutan	Up to 20,000	Up to 5,000	Up to 5,000
Cape Pirsagat	Up to 15,000		
Kura river Delta	Up to 75,000	Up to 30,000	Up to 10,000
Gyzylagach National Park	263,314 - 450,000 up to 1,000,000	Up to 100,000	-
Inland	**wetlands**		
Flamingo Lake of Shirvan National Park	2717-31238	Up to 10,000	
Lake Makhmudchala	Up to 40,000		
Lake Hajigabul	Up to 25,000	Up to 25,000	-
Lake Sarisu	75,000-311,000		
Lake Aggyol	43,000-150,000		
Agrychay w.r.	176-2096		
Lake Ajinohur	Up to 10,000		
Varvara w.r.	962-13694		478-1398
Samukh plot of Mingachevir w.r.	Up to 6,500		
Yenikend w.r.	1224-1462		
Lake Jandar	2351-11957		547-964
Araz water reservoir (Nakhchivan)	2183 – 21 000		1410
Season	Wintering	Migration	Breeding

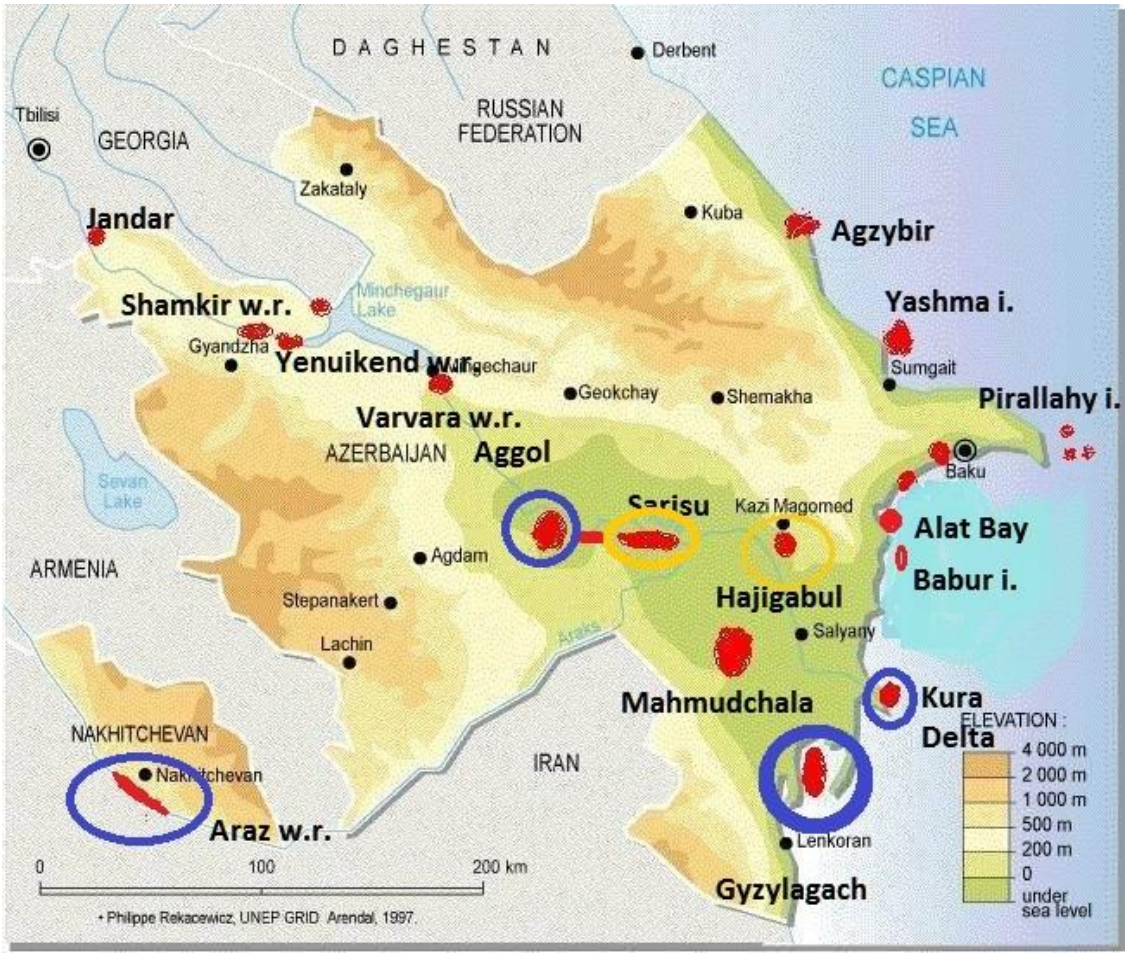
We can distinguish five types of sites where waterbirds are concentrated (Table 5): with numbers above 150,000 individuals, up to 75,000, up to 30,000, up to 10,000 and up to 5,000. We get three categories of plots according to significance in relation to possible oil pollution coming from oil field in Caspian Sea (Vereshagin, 1945; Sultanov et al.,1998a etc.):
I – most important sites with congregations more 30,000 waterbirds during at least one season of year and with birds being found by the thousands during all year, and located in the Pirallahy - Gyzylagach zone – most vulnerable for possible oil pollution (Gyzylagach, Kura river Delta, Shakhdili -Tava, “Shelf“ factory area, Babur - Gutan islands, Alat area).
II. Sites with congregations lesser 30,000 birds in Pirallahy- Gyzylagach coastal zone (Baku Bay, Lake Ajigabul).
III. Sites with congregations lesser 30,000 birds out of coastal zone Pirallahy – Gyzylagach (Lake Aghzybir, island Yashma).

Table 6. Most iimportant Wetlands of Azerbaijan for wintering waterbirds (1993-2015)

Name	**Area (ha)**	**Number of wintering waterbirds**
1. Aggol lake	10000	Up to 100 000 -150 000
2. Aghzybir lake	1600	25 000-100 000 (in passing)
3. Kura Delta	15 000	75 000 (in pas.)
4.Flamingo lake	4 000	31 000 (December)
5. Hajigabul	1 000	up to 24 000 (in pas.)
6. Jandar lake	1250	15 000
7. Gyzylagach National Park	113 000	500 000 (up to 1 000 000)
8. Mahmudchala Wetlands system	8 000	20 000 – 120 000
9. Mingachevir water reservoir	62500	6500 (Samukh plot)
10. Sarisu lake	11 000	300 000 – 20 000
11. Absheron arch. And Shakhdili spit	15 000	66 000
12. Alat bay and Baku archipelago	15 000	60 000
13.Factory “Shelf” of deep drilling platform around	10 000	Up to 100 0000
14. Araz water reservoir (Nakhchivan)	40 000	Up to 21 000 (incl. 3500 Lesser White-fronted Goose)

Table 6 shows that productivity of wetlands do not coincide with their area. Biggest wetland Gyzylagach has higher number of waterbirds (bout 0,5 mln) but next biggest wetlands Sarisu and Agghol has quit small areas as 10000 ha and 11000 ha. In general shallow brackish lakes of semidesrt on Central Plane of Azerbaijan is quit high and comparable with shallows waters of gulfs and bays of coastal zone and attract approximately the same number of birds on much lesser area.

Fig.1. Most important wetlands of Azerbaijan (blue circles – biggest wetlands are keeping high importance, yellow circles – wetlands lost high importance to 2010s)



We have two big zone of concentration for waterbirds along Caspian Sea coast in Azerbaijan. Plot Pirallahy-Alat (100-200 thousand birds) and Plot Kura Delta-Gyzylagach (around 500 thousand birds). For fist zone most common diving ducks, coot, grebes, gulls and swans (Table 4,5; Fig.1). For second zone most commons also diving ducks, coot, grebes, swans and pelicans but characteristic numerous surfing-feeding ducks, also cormorants and pelicans.

Table 7. Decrease and increase of general number of wintering waterbirds in Azerbaijan on main wetlands – Important Bird Areas of Azerbaijan

Name of water	Code of IBA	Area (ha)	Number of wintering waterbirds in 1990s	Number of wintering waterbirds in 2007-2012
1. Aggyol lake	AZE 030	4500	47 000 – 60 000	34990 – 100 000
2. Lesser Gyzylagach Bay	AZE 048	16 000	37 000	164853, 51149
3. Kura Delta	AZE 046	15 000	30 000	3825, 30164,12960

4. Hajigabul	AZE 041	1 000	5 000 - 24 000	2950, 1938, 5837, 23640, 6203
5. Lake Mahmudchala	AZE 045	8 000	20 000 - 40 000	6977, 3948, 52813, 112342, 18289,72562
6. Mingachevir w. r. (Samukh plot)	AZE 007	62500	6 500	5507
7. Sarisu lake	AZE 032	11 000	300 000	77292 ,57007, 20000
8. Pirallahi island (around)	AZE 034	15 000	20 000 - 65 000	25461, 17602, 17494, 21219
9. Alat bay	AZE040	15 000	30 000 -40 000	2436, 27117 (only Alat bay),

Results of winter counts show that some wetlands decreased its importance for wintering waterbirds and its number decreased here up to 5 times (lakes Sarisu, Hajigabul, Pirallahi island around and Alat bay). In the same time increase of number of wintering birds up to 2-3 times on some other wetlands like lake Mahmudchala and Lesser Gyzylagach Bay (table 7). Decrease of number has 2 main reasons in case of coastal wetlands as Pirallahi and Alat we see increasing of disturbance factor in result of construction of new port in Alat and intensive oil output around Pirallahi. In case of internal wetlands as Sarisu and Hajigabul is connected with sharp decrease of water level (up to full drying of lake Hajigabul). Increasing of number of birds in Lesser Gyzylagach Gulf and Lake Mahmudchala connected with also with change of hydrological regime but in direction of increase of productivity.

Table 8. Nesting species on islands and old oil platforms (from Sultanov, 2004)

Species	**Number of birds month**				**Islands and old oil platforms**
All islands (Islands of Absheron and Baku archipelago) with old oil platforms					
Species is breeding up to July					
	May -June, V-VI	%	June - July VI-VII	%	
1.Phalacrocorax carbo	1248	>3	3565 with nestlings	6	Near 20% of old oil platforms
2.Larus cachinnans	26298	69	24155	42	Islands and old oil platforms
3. Larus melanocephalus	160	<1	850	1,5	Zenbil, Babur - Gutan
4.Sterna hirundo	1509	4	8243	14	Islands Tava, i-s of Baku Bay, i. Babur – Gutan, old oil platforms
5.Sterna albifrons	64	<1	60	1	Islands Tava, islands of Baku Bay
6.Sterna sandvicensis	9200	24	20850	36	Islands Garasu
Total:	**38319**	**100**	**57723**	**100**	
	Remaining sp.				
7.Larus genei	200	Attempt	Of	nesting	Garasu
8.Kentish plover	10-20				Gil
9. Shelduck	5-10				Gil
10.Ruddy Shelduck	2-5				Gil
11.Collared Pratincole	20-25				Gil

Table 9. The mixed colonies at the Kura river delta (Sultanov, 2004)

SPECIES	**Number of nests**	**%**
1.Phalacrocorax carbo	24	2
2.Phalacrocorax pygmaeus	442	37
3. Larus cachinnans	99	8
4.Ardea purpurea	79	7

5.Ardea alba	113	10
6.Egretta garzetta	150	13
7. Nycticorax nycticorax	159	13
8.Platalea leucorodia	71	6
9.Plegadis falcinellus	50	4
Total	**1187**	**100**

Table 10. Trends in bird numbers in mixed breeding colonies at Gyzylagach State Reserve (according to Konovalova 1979, A.F. Jabbarova pers. com. and my pers. observations).

Species	**1957**	**1967**	**Max. 1972–77**	**1995**	**2006**
Great Cormorant *Phalacrocorax carbo*	1350		1000	210	
Pygmy Cormorant *Microcarbo pygmeus*	10,100	5000	3200	11,200	33,844
Grey Heron *Ardea cinerea*	675		18		183
Purple Heron *Ardea purpurea*					4686
Squacco Heron *Ardeola ralloides*	135,000	168,000	29,000	3800	5138
Cattle Egret *Bubulcus ibis*	54,000	6800	16,000	4300	8270
Great Egret *Casmerodius alba*	1350		4		1960
Little Egret *Egretta garzetta*	135,000	85,000	11,100	5000	15,391
Black-crowned Night Heron *Nycticorax nycticorax*	47,200	38,700	15,200	3500	4740
Eurasian Spoonbill *Platalea leucorodia*	1350		4	800	559
Glossy Ibis *Plegadis falcinellus*	155,300	150	6400	2400	1792
Total	**541,325**	**303,650**	**77,726**	**33,205**	**76,569**

98% of all nesting species of islands and old oil platforms belong to 4 species (Table 8; Sultanov, 1991, 2004) with a total population more 40,000 birds in the end of May and about 60,000 in the end of June-beginning of July when breeding is finish. Their biomass all together is 40 tons. Lakes Agzybir, Hajigabul, Kura river Delta and Gyzylagach State reserve have great mixed colonies of Pelicaniformes and Ciconiiformes birds which can include to 11 species of cormorants, herons and ibises which have number from about 2,5 thousand for Kura Delta to 30-60 (Konovalova, 1979) thousands and more (our data) for Gyzylagach State reserve (look Table 9,10).

CONCLUSIONS

Azerbaijan is one from most important countries of Europe according to number of wintering waterbirds (up to 1,5 mln, including 13 Globally Threatened Species), number of IUCN Red List birds' species – 36 and European Red List species - 24.
Azerbaijan keep up to 38 of Western Palearctic Population (Flyway) of some Globally Threatened waterbirds and up to 52% - of some common waterbirds' species, from 18 most important wetlands of Azerbaijan (16 potential and 2 registered Ramsar sites) 4 are National Parks, 5 – hunting economies so only 50% have some legal status.

During 1990s-2010s we see catastrophic fall down of number of the wintering waterbirds on Lakes Sarisu, Hajigabul and Red throughout sharp decreasing of productivity in result of falling of water level (lake Sarisu) or in result of artificial drying (Lake Hajigabul and Red). From other hand we see up to 5-6 times increase of number on Lake Mahmudchala and Lesser Gyzylagach Gulf throughout proposed increasing of productivity in result of better water supply. Main threats for wetlands and waterbirds are unsustainable water supply which can in any moment results sharp decrease or increase of number of waterbirds on many in result of wrong water management; illegal hunting and fishing; low level of ecological education of local population and industrial development on coastal zone which results sharp increase of disturbance factor (Alat Bay). Quit important potential and constant threat is oil pollution in Caspian Sea and along oil pipes in terrestrial part of country.

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