

Black Sea Regional Initiative for the wise use of Coastal Wetlands

THE BLACK SEA COASTAL WETLANDS VISION

G E O R G I A



KOLKHETI NATIONAL PARK

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Batumi, Georgia

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1. GEORGIA BLACK SEA COASTAL WETLANDS – INTRODUCTION

Wetlands situated in the Georgian Black Sea coastal area represent one of the most important ecosystems in the country, providing significant resources both for people and wildlife. Local communities heavily depend on wetland resources: water for drinking and household usage, logging, fishing, hunting, medical plants. At the same time wetlands support rich biodiversity, particularly breeding, wintering and migrating bird species, many of which are rare and globally or regionally threatened. Coastal wetlands provide natural interaction between the sea and land in the Western Georgia. They play an important role of “buffer” alleviating the negative impact of agriculture, industry, forestry and urbanization on the sea environment.

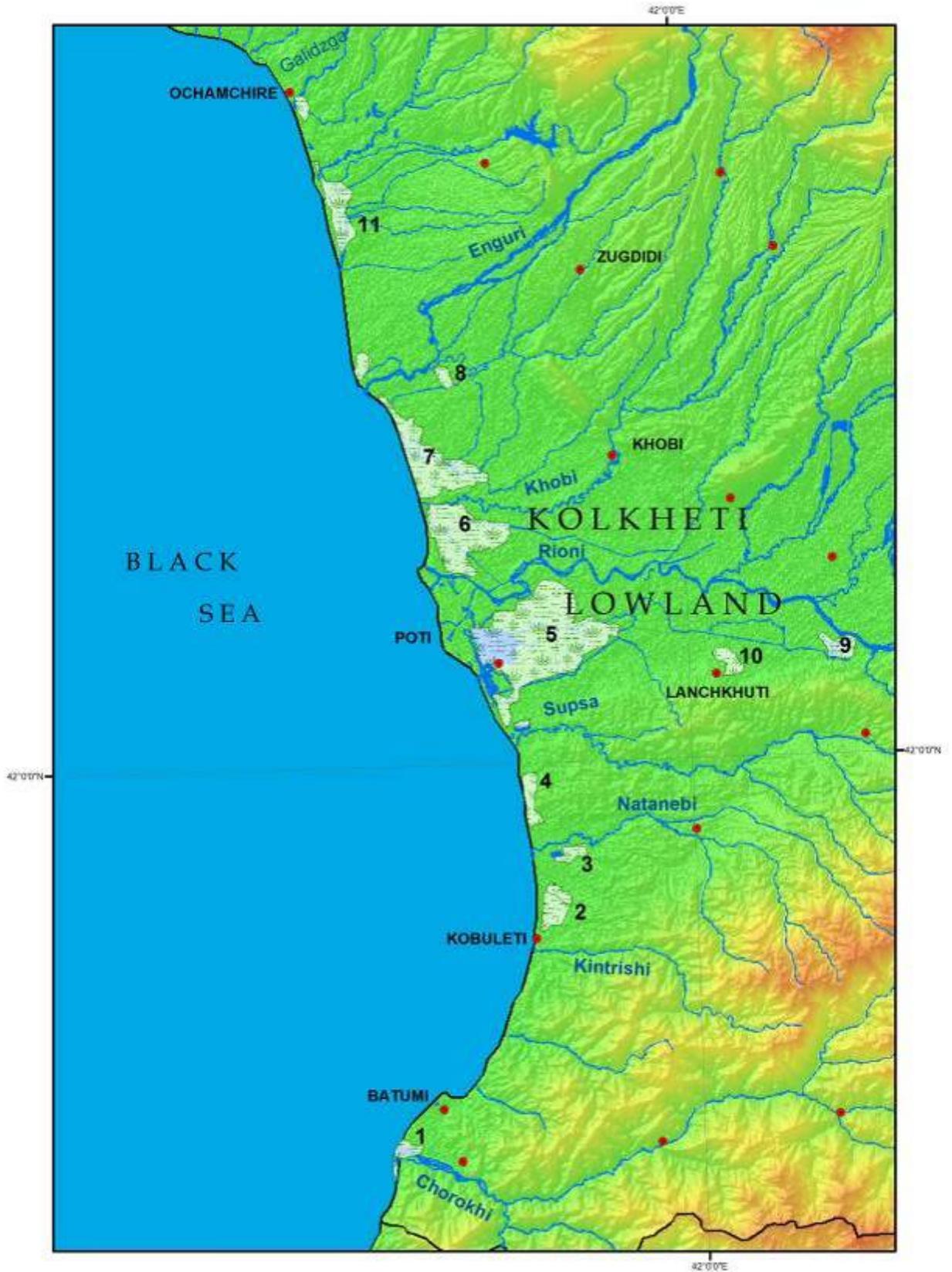
The Georgian Black Sea coastal wetland area is 2200 sq km, which makes 3.2% of the whole country’s territory. The climate in the area between Sukhumi and Batumi is a combination of moderately humid and humid subtropical.

Wetlands in the region can be split into three main areas:

- North-western - including south from the Galidzga River to the Inguri River and from the sea coast to the motorway Ochamchiri-Zugdidi;
- Central - between the Inguri and Natanebi Rivers, which stretches in the east from the sea to the town of Samtredia;
- Southern - occupies the area between the Natanebi River to the end of the southern bank of the Chorokhi River, including its estuary and mouth.

Area	Site	Lowland and region
I. Southern	1 Kakhaberi (Chorokhi) 2 Ispani 3 Laituri	Kolkheti lowland, Guria, Ajaria, Kakhabery lowland,
II. Central	4 Supsa-Natanebi 5 Pichora-Paliastomi 6 Nabada 7 Churia 8 Onaria 9 Narionali and Vazisubani 10 Kvishenati, Morchkhili, Chvintisgeli, Jinistba	Kolkheti lowland, Samegrelo, Imereti, Guria
III. North	11 Jakobi, Meore Gudava, Gagidi, Pichora-Kvishani, Nakargali	Kolkheti (Samurzakano) Lowland, Abkhazia

Map. 1. Location of the Georgian Black Sea coastal wetlands



2. GENERAL DESCRIPTION OF KOLKHETI WETLANDS

The Kolkheti lowland has widespread network of rivers with the various types of feeding, morphology and catchment capacity. Over 150 large and small rivers with their numerous tributaries discharge to the Black Sea from the territory of West Georgia. The rivers are extremely important for the functionality of Kolkheti wetlands, including Galidzga, Ingruri, Tikori, Churia, Rioni, Pichora, Khobi, Natanebi, Supsa, Chorokhi.

About 40 ponds and lakes are located in Kolkheti, the largest one is Paliastomi lake with an area of 18.2 sq km and average depth 3,2 m. It is fed by the pichora river and more than 25 other small rivers and streams. Other water reservoirs are lagoons, estuaries and lakes among the dunes and former river-beds.

The peat bogs are located in Kobuleti and in Kolkheti between the river mouths of Supsa, Rioni, Khobi and Inguri. The mires of Imnati, Tskhoustskali, Nabada and Churia have depth of 11-12 m and have an important function of natural filters, which prevent intrusion of nutrients and other agricultural pollutants to the sea and the sea water to the fresh one and agricultural land. Alluvial wetlands are widely presented in the Kolkheti lowland in a form of grass and woodland marshes.



Map 2: Peatlands of the central Kolkheti lowland

The wide fens exist on flat land with mesotrophic and basic to slightly acidic peaty to sandy soil, probably fed by base-rich water rising at different depths on which rainwater stagnates and acidifies. The steady supply of seepage water and frequent rainwater probably contribute greatly to the stable existence of the fen, which is normally a transient intermediate in the vegetation succession to broad-leaved forest. The vast territory of the coastal part of Kolkheti is dominated by the hydrophytes, including number of relict, endemic and adventives species. The extensive fens, mires and turf channels of Tchuria and Nabada

wetlands are interspersed by swampy to moist forest (predominantly alder) and fringed by distinct plant communities like *Typho-Phragmitetum*. Parts of the fen closest to the sea could be under brackish water influence where halophytic plants can grow. The great coverage of the fens combined with shingle beach, dunes, rivers, floating *sphagnum* mires, forests and the occurrence of several endemic species make the wetland landscape diverse and unique.



Colchic water-nut (*Trapa colchica*)

Other fen plants at stake and rare on the European level include the carnivorous Lesser Bladderwort (*Utricularia minor*) and Great Fen Sedge (*Cladium mariscus*). Unique is also the combination of the fens with the dunes or sand bar with special flora like the Sea Daffodil (*Pancratium maritimum*), *Glaucium flaum*, and *Convolvulus persicus*.

The sand bar acts as a natural levee by protecting the wetlands from the sea. The sand bar between Kulevi and the Rioni River is covered with bracken, with sclerophyllous shrubs and remnants of maritime pine forest (*Pinus maritima*).

The Kolkheti lowland is an important refuge for diverse fauna, especially for migratory waterfowl and raptors, mammals, herpetofauna, fish and invertebrates. Over 80 fish species occur here, including 5 sturgeon species, Black Sea salmon, brook trout, eel, mullets, sander, herbivorous fish of the Chinese complex, etc. An important indicator of the wetlands environmental condition is *Astacus colchicus* and river crab.

The beach and dunes next to the Tchuria fen are apparently the egg-laying grounds for a sizeable population of European Pond Terrapin (*Emys orbicularis*). This species is strictly protected in the European Union under the Habitat Directive (Annex IV). Other more common reptiles include the Dice Snake (*Natrix tessellata*) and Grass Snake (*Natrix natrix*). The European Green Tree Frog (*Hyla arborea*) is also common in

Kolkheti Wetlands. It lives in standing shallow fresh seepage waters with brambles and other dense shrubs in the surrounds.

Important routes for migratory birds from the northern Europe and western Siberia lay along the Black Sea coast. The Georgian coastal wetlands serve them as “filling stations”. Bird species pass through the area, diffusely as individuals in a wide front or concentrated in flocks. Records of a few known recent bird surveys along the Georgian coast are provided in Appendix 1. In places migrating birds navigate or congregate to rest or feed shortly. Waders stop mostly on undisturbed muddy or sandy flats of the seashore, pools and rivers. Raptors fly singly or in small groups over a wide area. The fens provide excellent shelter and forage for birds like Common Snipe (*Gallinago gallinago*) and Purple Heron. Songbirds, finches, Corncrake (*Crex crex*), Quail (*Coturnix coturnix*), Woodcock (*Scolopax rusticola*), Oriole (*Oriolus oriolus*), Hoopoe (*Upupa epops*), bee-eater (*Merops apiaster*) and probably Nightjar (*Caprimulgus europaeus*) are birds often utilize the densely vegetated to open dryer areas of the dunes, particularly during bad weather. During winter the coastal waters are frequently visited by waterbirds, including typical marine birds like (sea)ducks (e.g. Velvet Scoter), shearwaters (Mediterranean Shearwater), gulls, terns (e.g. Caspian Tern), skua’s (Pomarine Skua and Arctic Skua), grebes (e.g. Red-necked Grebe) and divers (Black-throated diver). For several bird species, such as the Black-Throated and Red-throated diver, the Black Sea is an important wintering area.



Corncrake (*Crex crex*)

Beside migrating birds, the forests in and around the coastal wetlands provide breeding and roosting sites for birds like the Night Heron (*Nycticorax nycticorax*), Purple Heron (*Ardea purpurea*), Little Egret (*Egretta garzetta*) and Great White Egret (*Egretta alba*), lesser spotted eagle. The rare

now common pheasant (*Phasianus Colchicus*) are found in remote areas of Kolkheti Lowlands and in the riparian forests of inland rivers.

In summer the Kolkheti Wetlands harbour typical breeding marsh and reedbirds. According to recent studies, however, resident birds were much more common in the past, and the decline is attributed to a high level of hunting, disturbance, habitat destruction and pollution.

About 60 mammal species have been described for Kolkheti lowland, notably the Otter (*Lutra lutra*), which live in certain places along the rivers and in the wetlands. The introduced Coypu (*Myocaster coypus*) is much more widespread. Badger, Weasel, Wild Cat, Fox, Hare, voles, shrews and some Roe Deer occur mostly in the wetland surrounds. Eight bat species have so far been detected with certainty in Kolkheti Wetlands.

The marine reserve of the Kolkheti National Park is important feeding and wintering ground of The Harbour Porpoise (*Phocoena phocoena relicta*), Common Dolphin (*Delphinus delphis*) and the Black Sea Bottle-nosed Dolphin (*Tursiops truncatus ponticus*). In winter the dolphins have been observed in greater numbers in a 50 m – 10 km zone off the Georgian coast.

Despite their important environmental values, most part of the Kolkheti wetlands has been drained. Over 70,000 ha are reclaimed for agriculture and urbanization. The main reasons of the wetlands degradation are drainage, deforestation, peat extraction and overfishing.



Imnati Peatlands, Kolkheti National Park

3. VALUES OF THE KOLKHETI WETLANDS

- **Maintenance of biological and landscape diversity**, including that of special and rare habitat types and relict species. During the glacial period of the Pleistocene, the Colchic region served as a refuge for temperate European flora, which is now confined and fostered in the remaining undisturbed pockets.

- **An ecological network** for countless migratory birds (waterbirds, raptors and passerines) along the major East Black Sea Flyway. This network is composed of flight bottlenecks, refueling sites, and wintering sites. Birds from as far as the arctic migrate or winter in the region.

- **Function as bird sanctuary** – the Kolkheti Wetlands provide refuge to breeding, resting and wintering birds. For instance, flocks of wintering waterbirds shift between the coastal waters and inland waters depending on the weather and human disturbance. In all 316 bird species have been recorded in the region, including many species of international conservation importance. As many as 115 bird species have been confirmed breeding.

- **Coastal stabilization.** Coastal dunes and sand bars, with their original vegetation and water saturated mires directly behind, buffer the pounding actions of the sea during storm surges.

- **Buffering against earthquakes.** Georgia is moderately prone to earthquakes. Wetlands can absorb much of the shocks of an earthquake and thus limit the amount of damage to human society.

- **Delay of flows of excess surface and ground water.** Mires, lakes and generally floodplains in the Kolkheti catchment absorb heavy rainfall and facilitate gradual run-off of rushing melt waters from the proximate mountains. Without this buffering function overflowing rivers resulting from torrential rains and rapid snowmelts can cause floods of residential areas and impact the local economy. The incidence of exceedingly high rainfall and rapid snowmelts in the mountains is increasing due to global warming.

Hence the water storage function of the wetlands will increase in the near future, particularly in Kolheti lowlands, which are wedged in between snow-covered mountains.

- **The wetlands uphold the land against the rising sea level.** Many areas in Kolkheta Lowlands are prone to subsidence, which is exacerbated by human activity, such as drainage of peatland and river impoundment. The subsidence rate of the region varies from two to six mm per year! Subsiding cities like Poti and Batumi are facing inundations by the sea already.
- **Carbon dioxide sequestering** by wetlands with low organic turnover. Mires in particular play an important role in the counteraction of global warming by accumulating carbon (Joosten & Clarke 2002). The sub-tropical climate of Kolkheta promotes a high rate of plant growth and hence greater permanent storage of carbon in peat layers through the build-up of plant matter.
- **Water cleansing.** Wetlands assimilate nutrients and certain pollutants that in excess cause bad water quality. In Kolkheta especially *Typha* beds are highly efficient nutrient filters.
- **Provision of natural products and raw materials,** including medicinal and food plants, dyes, flowers, fruits, herbs, honey, fish, waterfowl, timber and reeds for thatching, and twigs for basket weaving.
- **Vital nurseries for fish.** The rivers and lagoons of the region are vital to the reproductions of fish of ecological and economic importance.
- **Land for organic farming.** Free ranging cattle grazing in a rotational or integral way provide healthy meats and dairy products (e.g. water buffalo dairy farming). Gardens for organic produce can be established in or alongside wetlands. Wetlands provide the natural predators (birds, dragonflies) of crop pests.
- **Visual-Aesthetics.** One of the amenity values of natural wetlands is that they provide inspiration to painters, poets, writers, filmmakers and other artists. Furthermore, wetlands provide tranquil escapes for sensitive busy people from the cities.

- **Eco-tourism.** Local communities can host and guide foreign nature and culture tourists, and thereby gain considerable income. Bird watching, other nature and culture enjoyment are becoming increasingly popular in the west. Georgia's natural and cultural heritage holds great potential for sustainable tourism.

- **Scientific and educational values.** Wetlands hold a store of knowledge waiting to be analyzed by scientists and students alike. Wetlands provide knowledge of important ecological processes and stimulate holistic thinking. Wetlands instil certain wisdom in people and an appreciation for the scheme of things. They also present a time machine in the form of peat strata with paleoecological information (e.g. pollen) that can inform us about the patterns of vegetation with respect to climate change and other biospheric processes on a time line.

- **Intrinsic natural values.** Many wetlands are unique in terms of species composition and diverse ecological communities. They are part of Europe's and indeed the World's natural heritage.



Maltakva wetlands

4. STATUS OF THE GEORGIAN BLACK SEA COASTAL WETLANDS

4.1 Wetlands Protection and management

The Wetlands of Kolkheti lowland have been greatly impacted by anthropogenic activities. As much as 60% of the original wetland area has been claimed and cultivated during the Soviet period for pastures, agriculture and horticulture, a process continuing today. However constant water supply made it very difficult to drain wetlands in the region during the Soviet Era.

In 1990's, after gaining independence, Georgia became party of number of international agreements aiming at the protection of wetlands, notably the Convention on Conservation of Wetlands of International Importance (1996). Shortly afterwards parts of the central Kolkheti wetlands Pichori-Paliastomi, Nabada and Churia, as well as Kobuleti wetlands Ispani II – sphagnum bog were declared as Ramsar sites. In 1998 the Law on “Establishment and Management of the Kolkheti protected areas” was adopted. The law envisages establishment of the Kolkheti National Park and Kobuleti Protected Area. The process has been initiated under the World Bank funded Georgian Integrated Coastal Management Project. The GICM project has had great importance for assisting Georgia in meeting its international commitments under the Black Sea Environmental Program (BSEP) and to implement priority actions outlined in the Georgia Biodiversity Strategy/Action Plan. The priorities included conservation of biodiversity at sites of international significance on Georgia's Black Sea coast, such as the Kolkheti and Kobuleti wetland Ramsar sites; restoration of degraded habitats and resources within the Black Sea Large Marine Ecosystem; and participation in regional efforts to manage and sustain public goods of a transnational character.

One of the major components of GICMP was Establishment of coastal wetland protected areas in Kolkheti. The following activities have been implemented:

- Establishment of Kolkheti National Park and Kobuleti Nature Reserve
 - Management plans
 - Park infrastructure
 - Delineating and marking boundaries

- Support to administration and management
 - Professional development and training
 - Kolkheti Protected Area Advisory Council
- Biodiversity Monitoring and Research

The management plans include the activities for biodiversity protection and management for the Kolkheti National Park and Kobuleti protected area, the plan will also ensure biodiversity protection integration with the regional development requirements such as tourism, protection against flooding, etc.

Tourism Infrastructure map of Kolkheti national Park



LEGEND

- Kolkheti National Park Boundary
 - Stream
 - Lake and Reservoir
 - Highway
 - Motorway
 - Gravel road
 - Railway
- Routes**
- Hiking
 - Boating

- Forest
- Swamp
- Brush
- Marshland
- Mire
- Agricultural Land
- Beach
- Building
- Settlement

Park Infrastructure

- Visitor Centre and Park Administration
- Boat launch
- Information Kiosk
- Wayside Information
- Shelter
- Birdwatch hide
- Watch Tower
- Ringing Station

4.2 Kolkheti protected areas

- **Kolkheti National Park**

The Kolkheti National Park lies on the Black Sea coast, limited to the south by the Supsa River and a band of the Guria Foothills, to the north, by the Inguri River gorge, to the west, by the Black Sea coast. The National Park stretches for 18-28 km to the east inland and spreads over the administrative districts of Zugdidi, Khobi, Lanchkhuti, Senaki and Abasha. The Park covers an area of 28 940 ha of land and includes 15 742 ha of marine territory. The park was established in 1999 as part of Georgia's Integrated Coastal Management Project with the financial support of the World Bank (WB) and the Global Environmental Fund (GEF). The National Park includes the Kolkheti State Nature Reserve established in 1947 (500ha) and the adjacent wetlands, including the Paliastomi Lake.

The territory of the Kolkheti National Park is almost flat plain with the absolute height fluctuating within 0.2-4.5 m above sea level. The Park is characterized by the sea humid subtropical climate. The average annual temperature is 14°C, the annual monthly temperature in August ranges within 22.5-23.5°C; the absolute maximum temperature reaches 39-41 °C. In cold season the temperature may drop in extreme cases below 0°C. The average precipitation is 1500-1800 mm.

The Kolkheti National Park is covered by dense network of the rivers. The large rivers like The Rioni and Khobi, run across the park territory. The small ones including the Pichora, Dedabera, Tsiva, Churia, originate in the lowland marshes or in the band of



Imnati wetlands, Kolkheti National Park

hills or small mountains and are mainly fed by rain water. The Park includes Paliastomi, Imnati, minor Paliastomi, Parto Tskali Lakes.

Due to severely limited drainage of the surface waters, low filtering capability of soils and grounds, heavy precipitation, during last 6000 years the significant area of the Park has been experiencing intensive bogging. On the Park territory the height of continuous peat horizon in the marshes of Imnati, Shavtskala, Nabada and Churia reaches 6-12 m. These peat bogs represent natural filtering systems which absorb water in large quantity, purify it and get back to the rivers and Paliastomi Lake. There are highland, lowland and transitional swamps in the National Park.

The park is characterized with rich floristic composition and diverse vegetation. The coastal peat bogs are the home for the Boreal flora species - sphagnum mosses – *Sphagnum spp.*; *Drosera rotundiflora*, *Drosera rotundifolia*, *Rhinchospora aflu*, *Carex lasiocarpa*, *Menianthes trifoliata*, etc. The plants of the alpine zone – *Rhododendron flavum* and *Rhododendron ponticum* give the bogs especial appearance. In the swamped and wetland forests, alongside the peat bogs, relic and endemic species *Alnus barbata*, *Pterocarya pterocarpa*, *Quercus imeretina*, *Quercus hartwissiana*, etc., are found. These forests are characterized by the development of evergreen undergrowth (*Hedera colchica*, etc.). Aquatic plants, such as *Nymphaea alba*, *Trapa*, etc., are common in the peat bogs, lakes, swamp rivers and along them. The coastal zone's sandy dunes have mainly salt-prefering, xerophytes and ephemeral vegetation (*Hippophae rhamnoides*, *Paliurus spina-christi*, *Imperata cylindrical*, *Cynodon dactylon*, *Pancratium maritimum*, *Glaucum corniculatum*, etc.).

The park lies along one of the main routes of migration of water- fowls and waders of Africa and Eurasia. Over 194 different bird species are found within the region. A number of species, such as Black Stork (*Ciconia Nigra*), Crane (*Grus grus*), Great White Egret (*Egretta alba*), are included in the Red Data Book of Georgia.



Bird ringing Station at KNP

The National Park together with other areas of the Kolkheti lowlands is considered to be the homeland of the common pheasant. The park swamps, swamp rivers, lakes, swamped and wetland forests provide a shelter for a number of endangered species, such as roe deer, boar, otter, *Triturus vittatus*, *Emys orbicularis*, *Elaphe longissima*.

The area covered under the marine reserve of the KNP is considered as one of the most productive sections of the Georgian Black Sea coast, being important wintering, feeding and breeding grounds for many valuable fish species, including sturgeon, anchovy, flounder, red mullet to name a few. At the same time, it provides a comparatively undisturbed habitat for dolphins (*Delphinus delphis*, *Tursiops truncatus*, *Phocoena phocoena*).

- **Kobuleti Nature reserve**

Kobuleti Protected territories occupy an area of 770 ha located on the Black Sea coast near to the town of Kobuleti within the administrative district of Kobuleti. KNR covers an area of 603.5 ha. KNR is bordered by the Togoni river on the north, and the highway connecting Kobuleti to Ozurgeti on the east. The Shavighele river defines the southern boundary of the managed reserve for about 2 km, while its western boundary runs along the east edge of Kobuleti, for about half a km.

The current management plan has been prepared as part of the Integrated Coastal Zone Management Project (GICMP) and received financial support from the World Bank and the Global Environmental Facility (GEF).

The surface of the KNR is flat and only slightly eroded by the rivers of Shavighele and Togoni, as well as by a few water drains. Much of the area consists of a peat bog, the northeast and the southwest sections of which include hardly noticeable “peat domes”. These sections rise 1-3 m above the surface of the peat bog, which is composed of a single peat layer, whose thickness varies between 5 and 9 m. The peat in this peat bog consists mainly of peat moss, with thin layers of grass and tree peat.

The KNR has a humid sea subtropical climate. The total annual precipitation, mainly in the form of rain is 1500-2500 mm with the maximum precipitation occurring in the fall and winter seasons. The area is characterized by high relative humidity and periodic strong winds. Much of its area has preserved its original appearance, and only a small

part has been partly degraded as a result of adverse environmental impacts from human activities.

The peat bogs, from a point of view of floristic composition and structure, like the coastal bogs of the Kolkheti lowlands, demonstrate certain similarities with tundra and taiga sphagnum bogs. This is a quite unusual phenomenon for the subtropical latitudes that is of great interest to botanists. The Boreal species



Sphagnum moss at Kobuleti Nature Reserve

typical of tundra and taiga zones such as *Sphagnum imbricatum*

and *S. acutifolium*, or *S. papillosum*, *Drosera rotundifolia*, *Rhynchospora alba* and other species have preserved almost their original appearance throughout much of the KNR. The elements of alpine zone, such as *Rhododendrom luteum* and *R. ponticum*, give a unique appearance to the Kobuleti peat bogs. *Alnus barbata*, *Pterocarya pterocarpa*, *Quercus hartwissiana* are common in the remnants of swampy forests developed along the periphery of peat bogs. These forests are characterized by their evergreen undergrowth (for example, *Hedera colchica*, and other species). In addition, water plants are found in the bogs and swampy rivers (for example *Nymphaea colchica*, *Nuphar luteum*, and other species).

The wetland habitats of the KNR provide refuge to some individual species of birds, including *Gallinago media*, which is inscribed on the IUCN list for rare and endangered species, *Gallinago gallinago* and other species.

The existence of a highly urbanized area in the immediate vicinity of the KNR threatens its biodiversity. The ecosystems in the south and southwest are already experiencing the negative influence of human activities, which leads to degradation of the communities (phytocenoses). The establishment and operation of the KNR will ensure the preservation of its biodiversity, which is a valuable natural heritage.

4.3 Administration of Kolkheti Protected areas

The administration of the Kolkheti protected areas until 2008 was performed by the respective administrations of KNP and KNR, which were under the Protected areas Department of the Ministry of Environment of Georgia. However, since 2008, after the elimination of the mentioned department, the legal entity of public law “Agency for Protected areas” was established, a centralized body, which administers all the protected areas of Georgia through local administrations.

Under the GICM project significant upgrade of the park administration and tourist infrastructure has been performed. In the both protected areas, new administration buildings, supplementary buildings and visitor infrastructures have been established, including visitor center, boat trip piers, information kiosks, interpretations biards, tourist trails, shelters, bird watching towers and hides, watchtowers, ringing stations. Tourism is widely promoted in the Kolkheti protected areas and is being considered as a main source of income for the parks.



Kolkheti National Park Administration Building

4.4 Wetlands Research

Nowadays, the administrations of the protected areas are short of finances for conducting any scientific research or monitoring activities. The studies, conducted during 2000-2004 were associated with the establishment of Kokheti protected areas and preparation of management plans, as well as public awareness rising and design of interpretation facilities.

Currently the researches are being conducted mainly by the scientific institutions and NGOs. Among the recently conducted studies, the following are to be mentioned:

- **Developing alternatives for cow grazing in Ispani..** Study of grazing damage and invasive plant species of/in Ispani II mire, associated with the field lessons arranged for the schoolchildren and the students of the biological department of the Batumi Rustaveli State University. Funded by: Wetlands International. 2003.
- **Study of Imnati mire** - Plant sociology, ecology, peat stratigraphy, paleoecology, fire, cow grazing. Discovery of second oscillation-percolation bog, vegetation mapping. Master's Study. Greifswald University. Germany. 2004
- **Sphagnum -renewable resource** - The research project focused on developing Sphagnum farming opportunities on degraded peatlands and low-productive arable land in the Kolkheti lowland, that seem to have excellent perspectives for this new type of agriculture. Ecologically and economically profitable project. Master's Study. Greifswald University. Germany. 2007 - present



Trial plot for Sphagnum farming

5. LEGAL AND INSTITUTIONAL ARRANGEMENTS FOR WETLANDS CONSERVATION.

The main governmental entity responsible for the development and implementation of the environmental policy is the Ministry of Environment and Natural Resources Protection and its subsidiaries. The diagram below shows the main institutions in charge of wetlands conservation and management.



Wetlands conservation and wise use is directly or indirectly considered by number of National laws and international treaties of which Georgia is a participatory, including:

5.1 National Environmental Legislation

The following environmental laws were adopted in Georgia:

1. The soil protection law
2. Law of protection of plants from pest organisms
3. Tourism and resorts law
4. Law on transit carriage and import of wastes in Georgia
5. Law on Environment protection
6. Law on minerals
7. Law on Fauna
8. Law on the Protected Territories System

9. Law on Licensing and Permits
10. Law on the Red Data List and Red Book
11. Hunting and fishing regulation
12. Water law
13. Law on atmosphere air
14. Law on establishment and management of Kolkheti protected territories
15. Law on privatization of agriculture land
16. Georgia Biodiversity Conservation Strategy and Action Plan

5.2 International Conventions

Republic of Georgia actively moves towards ratification of international conventions related to Environment protection, among which the most important are:

1. CLC
2. Ramsar Convention on Wetlands
3. Convention of International Trade of Endangered Species of wild fauna and flora (CITES)
4. Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter
5. UN Convention against desertification
6. Convention on Protection of Ozone layer
7. Convention on Biological Diversity , Rio de Janeiro
8. Bucharest Convention on Protection of Black Sea Against Pollution,
9. Odessa Ministerial declaration on the Black Sea protection
10. Black Sea Biodiversity and Landscapes Protection Protocol
11. Framework Convention on Climate Change.
12. Bonn Convention on Migrating Species
13. Stockholm Convention on the Persistent Organic Pollutants
14. Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters

6. MAIN THREATS/TRENDS

The important functions of Kolkheti wetlands are greatly impacted by anthropogenic activities. As much as 60% of the original wetland area has been claimed and cultivated for pastures, agriculture and horticulture. Extensive areas have been utilized for peat extraction; the activity that currently had been abandoned, but still is a potential threat. Numbers of landfills of major coastal cities are organized in the wetlands areas or river banks.

The increasing degradation of the wetlands is currently forced by:

- pollution,
- eutrophication,
- peat exploitation,
- over-exploitation of fauna (poaching),
- burning of reeds for pasture
- illegal logging,
- drainage,
- overgrazing,
- soil disturbance (incl. sand and gravel digging and trampling by cattle),
- normalization of flowing waters,
- Invasive species and feral animals.
- Urban and Industrial expansion (including oil-port and railway construction) is another threat to the coastal wetlands, mainly due to insufficient consideration during the spatial and land-use planning processes.



Uncontrolled coastal development



Construction of new railway along the coast

The trends in relation to the coastal wetlands can be grouped and described as follows:

Protected areas:

- Insufficient financing, inefficiency of financial mechanisms and institutional arrangements
- Insufficient representation of unique ecosystems in the protected areas
- Absence of unified network of protected areas,
- Absence of monitoring system in the protected areas
- Low awareness of local population in environmental issues and on-going projects
- Conflict of interests between the local population and protected areas in some areas
- Illegal use of resources

Species and habitats

- The current status of majority species is unknown which makes it difficult to plan and implement the species conservation priorities, and their wise use
- The quotas of usage of the majority flora and fauna species of economical importance are not defined, which holds the risk of their excessive and uncontrolled usage
- The endangered biotopes of global importance and the particularly sensitive ones need to be defined
- No comprehensive information exist on biodiversity rich areas outside of protected territories, so that their management measures are not sufficient

Biodiversity monitoring

- Insufficient legislative base in the fields of biodiversity monitoring
- The function of biodiversity monitoring is not defined among different entities
- There is no unified methodology of biodiversity monitoring, often reason for inconsistency of existing data
- There is no unified system of biodiversity inventory, existing information has fragmented character
- No mechanism for information exchange between organizations responsible for biodiversity monitoring
- No user available computerized database
- Lack of modern monitoring methodology and techniques

Hunting and fishing

- Ineffective system of poaching control
- Absence and lack of experience in organizing the private hunting reserves
- Low awareness of hunters/fishers on appropriate regulations (target species, seasons, quotas)
- Lack of financial mechanisms for reproduction and conservation of fish stocks

**Environmental Education and Public Awareness**

- Low level of environmental education and awareness among general public
- Low participation of public in the decision making process
- Low competency of media in the environmental issues
- Lack of professionals in environmental legislation
- Low awareness of state, private and public organisations in environmental priorities

Financial-economical matters

- Absence of international environmental standards
- Lack of experience in environmental management
- Absence of environmental divisions in the companies/organizations
- No assessment of economical values of biodiversity and habitats, as well as ecosystem services, causing inadequate use of resources and in case of damage insufficient compensations

7. GEORGIAN BLACK SEA COASTAL WETLANDS VISION

The vision

Wetlands of Georgia is common National heritage, and at the same time integral part of Black Sea regional and Global network of wetland ecosystems, which has important environmental, socio-economical, cultural and aesthetical values that need to be preserved, sustained and where possible expanded through protection, restoration, education and wise use.

Recommended Priority actions for protection of Coastal Wetlands

In order to achieve the above vision, the following activities have been identified as of high priority:

- Survey and value of wetland sites of non-protected status for their suitability as Ramsar sites, considering landscape and biological diversity values and wetland functions or ecosystem-services.
- Make an assessment of the ecological impacts of the human activities on the wetlands system
- For identified areas provide mitigation measures to reduce the ecological impacts of human activities including appropriate restoration, regulation, management, education, inventory and monitoring activities.
- To identify and promote alternative and environmentally friendly means of income for local people.
- Ensure consideration of the wetlands eco-systems in the spatial-territorial planning and development projects on the coast
- Improve public awareness on ecological importance and ecological values and services of the coastal wetlands; improve educational facilities for local people
- Provide means to train students in modern environmental management and in land-use planning
- Develop a database for the synthesis and collation of biodiversity monitoring and inventory information
- Create modern eco-tourism facilities

8. LIST OF KEY ORGANIZATIONS INVOLVED IN WETLANDS CONSERVATION AND WISE USE

The coastal wetlands are subject of competence of wide variety of organizations ranging from coastal municipalities and regional government, through central government authorities and non-governmental institutions, to universities and scientific-research entities.

The key organizations involved in the Georgian Black Sea coastal wetlands conservation, study and wise use are identified as follows:

Name of the organization	Ministry of Environment and Natural Resources of Georgia
Type of the organization	Governmental organization
Core activities	Policy setting, decision making, enforcement, management
Post address	6 G. Gulua str ,
City + Postal code	Tbilisi 0114 Georgia
Telephone	(995 32) 27 57 00; (995 32) 27 57 20;
Web-site	www.moe.gov.ge

Name of the organization	Protected Areas Agency of Georgia
Type of the organization	Governmental organization, Legal entity of Public Law
Core activities	Policy setting, decision making, enforcement, management
Post address	6 G. Gulua str ,
City + Postal code	Tbilisi 0114 Georgia
Telephone	(995 32) 27 57 00; (995 32) 27 57 20;
Web-site	www.dpa.gov.ge

Name of the organization	Administration of Kolkheti National Park
Type of the organization	Governmental organization,
Core activities	Management, conservation, research, enforcement,
Post address	222 Guria Str
City + Postal code	Poti Georgia
Telephone	(995 393) 42301;
E-mail address	knp@knp.ge
Web-site	www.knp.ge

Name of the organization	Administration of Kobuleti Nature Park
Type of the organization	Governmental organization,
Core activities	Management, conservation, research, enforcement,
Post address	24 Rustaveli Str
City + Postal code	Kobuleti Georgia
Telephone	(995 99) 545426

E-mail address	knr@knr.ge
Web-site	www.knr.ge

Name of the organization	Environmental Association “PSOVI”
Type of the organization	NGO
Core activities	Eco-education, research, monitoring
Post address	2 str. P. Loria,
City + Postal code	Batumi 6010 (Georgia)
Telephone	+995 (95) 40 66 90
E-mail address	ea_psovi@yahoo.com

Name of the organization	Black Sea Eco-Academy
Type of the organization	NGO
Core activities	Eco-education, research
Post address	51 str. Rustaveli,
City + Postal code	Batumi 6010 (Georgia)
Telephone	+995 (77) 42 39 27 +995 (222) 7 45 81
E-mail address	bseage@online.ge

Name of the organization	Society for conservation of wild nature “Tchaobi
Type of the organization	NGO
Core activities	Education, research, monitoring
Post address	Vil.Ortabatumi, Khelvachayri Municipality
City + Postal code	Batumi 6010 (Gergia)
Telephone	+995 (93) 30 39 57
E-mail address	tchaobi@yahoo.com

Name of the organization	“Flora and Fauna”
Type of the organization	NGO
Core activities	scientific research, education, monitoring
Post address	11 str. Sh. Khimshiashvili.
City + Postal code	Batumi 6010 (Gergia)
Telephone	+995 (95) 77 74 44
E-mail address	guchmanidze@gmail.com

Name of the organization	Georgian Center For The Conservation Of Wildlife, GCCW
Type of the organization	NGO
Core activities	scientific research, management, consulting, education
Post address	7 th -building, I-quarter, 4 th -Nucubidze Plato
City + Postal code	Tbilisi 0160 PO Box 56 (Georgia),
Telephone	+995 (32) 32 64 96
E-mail address	office@gccw.org
Web-site	www.gccw.org

Name of the organization	NACRES
Type of the organization	NGO
Core activities	scientific research, consulting, education
Post address	12a-str. Abashidze,
City + Postal code	Tbilisi 0179 (Georgia)
Telephone	+995 (32) 23 37 06
E-mail address	public.relations@nacres.org
Web-site	www.nacres.org

Name of the organization	Caucasus Environmental NGO Network CENN
Type of the organization	NGO
Core activities	Research, networking, education, consulting
Post address	27 Bethlemi Str
City + Postal code	Tbilisi 0105 Georgia
Telephone	+995 32 751903
E-mail address	cenn@cenn.org
Web-site	www.cenn.org

Name of the organization	Association “Green Alternative”
Type of the organization	NGO
Core activities	Research, monitoring, education
Post address	62 Chavchavadze Str.
City + Postal code	Tbilisi 0162 Georgia
Telephone	+995 32 221604
E-mail address	greenalt@wanex.net
Web-site	www.greenalt.org

Name of the organization	WWF Caucasus Office
Type of the organization	NGO
Core activities	scientific research
Post address	11 str. M. Aleksidze
City + Postal code	Tbilisi
Telephone	+995 (32) 33 01 54 / 33 01 55
E-mail address	tgamkrelidze@wwfcaucasus.ge
Web-site	www.panda.org/caucasus/

Name of the organization	Vakhushti Bagrationi institute of Geography
Type of the organization	Scientific, Academic
Core activities	scientific research
Post address	1. M. Alexidze str,
City + Postal code	Tbilisi (Georgia)
Telephone	+995 (32) 33 74 94
E-mail address	geograf@gw.acnet.ge
Web-site	www.acnet.ge/geography.htm

Name of the organization	Institute of Zoology
Type of the organization	Academic, Scientific
Core activities	scientific research
Post address	31. Chavchavadze str,
City + Postal code	Tbilisi 0179 (Georgia)
Telephone	+995 (32) 22 33 53
E-mail address	izoo@caucasus.net
Web-site	www.zoo.caucasus.net

Name of the organization	Institute of Botany of Georgia
Type of the organization	Scientific, Academic
Core activities	scientific research
Post address	1 Kojori road
City + Postal code	Tbilisi
Telephone	+995 (32) 98 76 24
E-mail address	botanins@gw.acnet.ge
Web-site	www.acnet.ge/botany.htm

Name of the organization	Batumi Shota Rustaveli State University
Type of the organization	Academic
Core activities	Education, research
Post address	35 Ninoshvili Str
City + Postal code	Batumi 6010 Georgia
Telephone	+995 222 71780
E-mail address	info@bsu.edu.ge
Web-site	www.bsu.ge

Name of the organization	Ilia Chavchavadze State University
Type of the organization	Academic
Core activities	Education, Research
Post address	32 Chavchavadze Ave
City + Postal code	Tbilisi 0179 Georgia
Telephone	+995 32 294197
E-mail address	uni@iliauni.edu.ge
Web-site	www.iliauni.edu.ge

Name of the organization	Tbilisi Ivane Javakhishvili State University
Type of the organization	Academic
Core activities	Education, Research
Post address	1 Chavchavadze Ave
City + Postal code	Tbilisi 0128 Georgia
Telephone	+995 32 225107
E-mail address	rec@tsu.edu
Web-site	www.tsu.edu

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APPENDIX – Recent bird surveys along the Georgian coastline

Table A1: List of birds observed along the coast from Kulevi to the Tchuria River 21-22 April 2005 (Source: Georgian Centre for the Conservation of Wildlife)

Great Crested Grebe (<i>Podiceps cristatus</i>)	Sanderling (<i>Calidris alba</i>)
Horned Grebe (<i>Podiceps auritus</i>)	Black-winged Pratincole (<i>Glareola nordmanni</i>)
Yelkouan Shearwater (<i>Puffinus yelkouan</i>)	Arctic Skua (<i>Stercorarius parasiticus</i>)
Great Cormorant (<i>Phalacrocorax carbo</i>)	Common Black-headed Gull (<i>Larus ridibundus</i>)
Little Egret (<i>Egretta garzetta</i>)	Little Gull (<i>Larus minutus</i>)
Grey Heron (<i>Ardea cinerea</i>)	White-winged Tern (<i>Chlidonias leucopterus</i>)
Purple Heron (<i>Ardea purpurea</i>)	Common Swift (<i>Apus apus</i>)
Great White Egret (<i>Casmerodius albus</i>)	Eurasian Hoopoe (<i>Upupa epops</i>)
Glossy Ibis (<i>Plegadis falcinellus</i>)	Eurasian Skylark (<i>Alauda arvensis</i>)
Mallard (<i>Anas platyrhynchos</i>)	Barn Swallow (<i>Hirundo rustica</i>)
Northern Pintail (<i>Anas acuta</i>)	Northern House-martin (<i>Delichon urbica</i>)
Common Teal (<i>Anas crecca</i>)	White Wagtail (<i>Motacilla alba</i>)
Garganey (<i>Anas querquedula</i>)	Yellow Wagtail (<i>Motacilla flava</i>)
Tufted Duck (<i>Aythya fuligula</i>)	Eurasian Blackbird (<i>Turdus merula</i>)
Black Kite (<i>Milvus migrans</i>)	Northern Wheatear (<i>Oenanthe oenanthe</i>)
White-tailed Eagle (<i>Haliaeetus albicilla</i>)	Ortolan Bunting (<i>Emberiza hortulana</i>)
Marsh Harrier (<i>Circus aeruginosus</i>)	Corn Bunting (<i>Miliaria calandra</i>)
Montagu's Harrier (<i>Circus pygargus</i>)	European Greenfinch (<i>Carduelis chloris</i>)
Eurasian Sparrowhawk (<i>Accipiter nisus</i>)	Eurasian Siskin (<i>Carduelis spinus</i>)
Northern Goshawk (<i>Accipiter gentilis</i>)	European Goldfinch (<i>Carduelis carduelis</i>)
Common Buzzard (<i>Buteo buteo</i>)	House Sparrow (<i>Passer domesticus</i>)
Common Kestrel (<i>Falco tinnunculus</i>)	Common Starling (<i>Sturnus vulgaris</i>)
Red-footed Falcon (<i>Falco vespertinus</i>)	Eurasian Jay (<i>Garrulus glandarius</i>)
European Golden-plover (<i>Pluvialis apricaria</i>)	Rook (<i>Corvus frugilegus</i>)
Little Ringed Plover (<i>Charadrius dubius</i>)	Carrion Crow (<i>Corvus corone</i>)
Eurasian Curlew (<i>Numenius arquata</i>)	Common Raven (<i>Corvus corax</i>)

Table A 2: Bird species recorded as vagrants in Choroki Delta from 1998 up till autumn 2005 (Records by: E. van Maanen, GCCW, I. Goradze and A. Abuladze).

Red-throated Diver (<i>Gavia stellata</i>)	Little Stint (<i>Calidris minuta</i>)
Black-throated Diver (<i>Gavia artica</i>)	Eurasian Curlew (<i>Numenius arquata</i>)
Great Crested Grebe (<i>Podiceps cristatus</i>)	Black-tailed Godwit (<i>Limosa limosa</i>)
Great White Egret (<i>Casmerodius albus</i>)	Ruff (<i>Philomachus pugnax</i>)
Mediterranean Shearwater (<i>Puffinus yelkouan</i>)	Common Redshank (<i>Tringa totanus</i>)
Purple Heron (<i>Ardea purpurea</i>)	Spotted Redshank (<i>Tringa erythropus</i>)
Grey Heron (<i>Ardea cinerea</i>)	Wood Sandpiper (<i>Tringa glareola</i>)
Squacco Heron (<i>Ardeola ralloides</i>)	Green Sandpiper (<i>Tringa ochropus</i>)
Glossy Ibis (<i>Plegadis falcinellus</i>)	Common Sandpiper (<i>Actitis hypoleucos</i>)
Spoonbill (<i>Platalea leucorodia</i>)	Common Greenshank (<i>Tringa nebularia</i>)
Black Stork (<i>Ciconia nigra</i>)	Little Ringed Plover (<i>Charadrius dubius</i>)
Mute Swan (<i>Cygnus olor</i>)	Common Snipe (<i>Gallinago gallinago</i>)
Red-breasted Goose (<i>Branta ruficollis</i>)	Northern Lapwing (<i>Vanellus vanellus</i>)
Garganey (<i>Anas querquedula</i>)	European Golden Plover (<i>Pluvialis apricaria</i>)
Common Shelduck (<i>Tadorna tadorna</i>)	Grey Plover (<i>Pluvialis squatarola</i>)
Ruddy Shelduck (<i>Tadorna ferruginea</i>)	Slender-billed Gull (<i>Larus genei</i>)
Gadwall (<i>Anas strepera</i>)	Little Gull (<i>Larus minutus</i>)
Ferruginous Duck (<i>Aythya nyroca</i>)	Gull-billed Tern (<i>Gelochelidon nilotica</i>)

Tufted Duck (<i>Aythya fuligula</i>)	Sandwich Tern (<i>Sterna sandvicensis</i>)
Velvet Scoter (<i>Melanitta nigra</i>)	Common Tern (<i>Sterna hirundo</i>)
Common Goldeneye (<i>Bucephala clangula</i>)	Little Tern (<i>Sterna albifrons</i>)
Black Kite (<i>Milvus migrans</i>)	Black Tern (<i>Chlidonias niger</i>)
Merlin (<i>Falco columbarius</i>)	White-winged Black Tern (<i>Chlidonias leucopterus</i>)
Hobby (<i>Falco subbuteo</i>)	Black-winged Pratincole (<i>Glareola nordmanni</i>)
Red-footed Falcon (<i>Falco vespertinus</i>)	European Bee-eater (<i>Merops apiaster</i>)
Common Kestrel (<i>Falco tinnunculus</i>)	Hoopoe (<i>Upupa epops</i>)
Peregrine Falcon (<i>Falco peregrinus</i>)	Wryneck (<i>Jynx torquilla</i>)
Saker Falcon (<i>Falco cherrug</i>)	Skylark (<i>Alauda arvensis</i>)
Levant Sparrowhawk (<i>Accipiter brevipes</i>)	Wood Lark (<i>Lullula arborea</i>)
Eurasian Sparrowhawk (<i>Accipiter nisus</i>)	Crested Lark (<i>Galerida cristata</i>)
Steppe Buzzard (<i>Buteo buteo vulpinus</i>)	Meadow Pipit (<i>Anthus pratensis</i>)
Pallid Harrier (<i>Circus macrourus</i>)	Tawny Pipit (<i>Anthus campestris</i>)
Montagu's Harrier (<i>Circus pygargus</i>)	Pied Wagtail (<i>Motacilla alba</i>)
Marsh Harrier (<i>Circus aeruginosus</i>)	Yellow Wagtail (<i>Motacilla flava</i>)
Lesser-spotted Eagle (<i>Aquila pomarina</i>)	Grey Wagtail (<i>Motacilla cinerea</i>)
Corncrake (<i>Crex crex</i>)	Citrine Wagtail (<i>Motacilla citreola</i>)
Purple Swamp-hen (<i>Porpyrio porphyrio</i>)	Izabelline Wheatear (<i>Oenanthe isabellina</i>)
Common Crane (<i>Grus grus</i>)	Red-backed Shrike (<i>Lanius collurio</i>)
Black-winged Stilt (<i>Himantopus himantopus</i>)	Lesser Grey Shrike (<i>Lanius minor</i>)
Avocet (<i>Recurvirostra avosetta</i>)	Rosy Starling (<i>Sturnus roseus</i>)
Dunlin (<i>Calidris alpina</i>)	Rook (<i>Corvus frugilegus</i>)

Table A 3

Results of mid-winter waterbird counts of Lake Maltakva, 15 February 1998 (Gavashelishvili et al. 1998).

Species	Number
Great Crested Grebe (<i>Podiceps cristatus</i>)	15
Little Grebe (<i>Tachybaptus ruficollis</i>)	3
Mallard (<i>Anas platyrhynchos</i>)	40
Tufted duck (<i>Aythya fuligula</i>)	19
Pochard (<i>Aythya ferina</i>)	14
Coot (<i>Fulica atra</i>)	19

Table A 4

Results of mid-winter waterbird counts of the northern part of the Rioni Delta, 15 February 1998 (Gavashelishvili et al. 1998)

Species	Number
Great Crested Grebe (<i>Podiceps cristatus</i>)	100
Black-necked grebe (<i>P. nigricollis</i>)	6
Grey Heron (<i>Ardea cinerea</i>)	3
Greater white-fronted goose (<i>Anser albifrons</i>)	110
Mallard (<i>Anas platyrhynchos</i>)	400
Teal (<i>A. crecca</i>)	600
Red-crested pochard (<i>Netta rufina</i>)	1
Grey plover (<i>Pluvialis squatarola</i>)	30
Dunlin (<i>Calidris alpina</i>)	40