



Biodiversity conservation

Humankind is on the brink of a major ecological crisis — the Sixth Extinction of Species — caused by human activity. Conserving and maintaining biodiversity is an essential component of the health and resilience of our planet's ecosystems.

The loss of biodiversity poses significant risks to human well-being, such as loss of genetic diversity and increased vulnerability to environmental disasters. The Kunming-Montreal Biodiversity Framework Programme, signed at the Conference of the Parties to the UN Convention on Biological Diversity (COP 15), has become the main program for biodiversity conservation.

With diverse operating assets and widespread across all regions of Kazakhstan, we recognize the significance of our impact on biodiversity.

Some companies of the Fund Group, such as JSC Kazakhtelecom and JSC NAC Kazatomprom, have approved guiding documents on biodiversity impact management. JSC NC Ka-

zmunayGas has developed a "Comprehensive Programme for Seal Habitat Conservation and Biodiversity Conservation" in 2023. [GRI 3-3](#)



Hamster
(*cricetus cricetus*)

on the verge of total extinction

Potential impact on areas of operation by type of activity [GRI 304-1, GRI 304-2](#)

Our portfolio companies are present in all regions of the Republic of Kazakhstan, especially companies with extensive linear infrastructure. Such companies include trunk oil and gas pipelines of KazTransOil JSC and NC QazaqGaz JSC, trunk overhead power transmission lines of KEGOC JSC, as well as overhead power transmission lines of electricity distribution companies Samruk-Energy JSC, railway tracks of JSC NC Kazakhstan Temir Zholy, and cable telecommunication networks of Kazakhtelecom JSC. This infrastructure covers diverse regions of Kazakhstan and affects different types of ecosystems, including forest-steppe, wetlands, steppe, semi-desert and desert ecosystems, which are found in various terrains, from shallow hills to hilly and flat terrain.

The main aspects of the negative impacts of portfolio companies with significant linear infrastructure on biodiversity are as follows:

- ⦿ obstruction of railway tracks, artificial fences, embankments, high-speed motorways to the migration routes of ungulate mammals;
- ⦿ deaths of animals on railway tracks and highways. [GRI 3-3](#)

Fund portfolio companies recognize the listed risks and implement measures to minimize them. [GRI 3-3](#)

JSC NAC KAZATOMPROM IN 2023 CONTINUES RESEARCH ON PROTECTING BIRDS FROM THE IMPACT OF POWER LINES.

The list of IUCN Red List species and the national list of protected species whose habitats are located in the area affected by the activities of the portfolio companies is included in Annex 4. [GRI 304-4](#)

Rail transportation

In 2022, the derailment of 18 freight wagons of JSC NC Kazakhstan Temir Zholy on the railway bridge of the Tausamaly—Kumystau crossing and the fall of 6 freight wagons with cargo caused environmental damage to the Irtys River. Measures to compensate for losses to the fishery will continue in 2024.

Temporary adverse impacts of this incident on the Ust-Kamenogorsk reservoir include the following:

- ⦿ death of benthos at the bottom of the reservoir as a result of ore settling and formation of high turbidity zones;
- ⦿ death of zooplankton or disruption of production processes in the zone of increased turbidity caused by the derailment of railway wagons into the reservoir;
- ⦿ disturbance of fish reproduction conditions, destruction of spawning substrates, death of fish eggs and larvae.

[GRI 304-2, GRI 3-3](#)

According to calculations, the total loss of fish products due to the death of food organisms was 2.6 thousand kg.

Electricity production and distribution

The main electricity production facilities are located in Pavlodar and Almaty oblasts, regions with a high level of industrial development and, consequently, subject to a high level of technogenic environmental pollution. The production facilities are located on industrial land where there are no red-listed, endangered or other species of animals and birds. The impact of the production activities of the Fund's enterprises on the environment is minimal and is constantly monitored.



The main aspects of the negative impact of hydroelectric and wind power plants on biodiversity are as follows:

- mortality of ichthyofauna (eggs), aquatic invertebrates, aquatic plants, some waterfowl and waterfowl birds during significant water level changes in rivers and/or other water bodies;
- bird mortality from collision with turbines of wind farms;
- bird mortality from electrocution on medium-power overhead lines and substation equipment under operating voltage. [GRI 3-3](#), [GRI 304-2](#)

According to the zoological survey in the 45 MW wind power plant construction area near Ereimentau, 2 bird species listed in the Red Book of Kazakhstan (Imperial Eagle, Steppe Eagle) were found in the mountains of Ereimentau. Bird aggregations were found in lowlands and forest plantations along motorways and railway tracks, which are located away from the installed wind turbines. The likelihood of collisions between these species and other birds was determined to be "minimal". No collisions of migratory birds with turbines have been recorded during the period of operation of the wind farm (a logbook is maintained).

Oil and gas production

Some oil and gas fields are located in the Caspian Sea and represent a particular group of risks for biodiversity.

The Northern Caspian is the most productive part of the Caspian Sea. The biological resources of this region have a significant scale. Among the most significant commercial objects of the ichthyofauna are 25 species, including sturgeons, which account for more than 70-80% of their world stock in this basin.

The eastern part of the water area of the Northern Caspian Sea, including the deltas of the Volga (within the Republic of Kazakhstan) and Ural rivers, is located in the state-protected area in the northern part of the Caspian Sea. The wetlands of the northern part of the Caspian Sea, especially the deltas of the Volga, Ural, and Emba rivers, as well as the coastal zones and the seawater area, are key areas on the continent, providing refuge for millions of waterfowl and waterbirds during nesting, molting, migration and wintering periods. One of the largest flyways in Eurasia, the Siberian-Black Sea-Mediterranean Flyway, passes through the Northern Caspian.

The main aspects of the negative impact of oil and gas production companies on biodiversity are as follows:

- a factor of concern for Caspian seals;
- pollution of bird and seal habitats with oil and oil products;
- harm to ichthyofauna and seals as a result of accidental/unauthorized releases of toxic substances into the Caspian Sea;
- toxic effect of oil hydrocarbons in open evaporation fields;
- deaths of waterfowl landing on vapour fields;
- deaths of birds from electric shock on overhead lines and substation equipment under operating voltage;
- disturbance from the development of new wells and associated infrastructure;
- degradation of vegetation communities as a result of the expansion of the road network. [GRI 3-3](#) [GRI 304-2](#)

JSC NC KazMunayGas performed works on compensation of damage to fish resources during construction and abandonment of well V-1 at the Zhenis site by releasing fish planting material (sterlet) into the Ural River (Atyrau region) in July 2023. [GRI 3-3](#)

Mining and Metallurgical Sector

The Fund's Group includes enterprises in the mining sector, including uranium exploration and mining and metallurgy enterprises.

Sources of direct mechanical impact on the vegetation cover are construction and installation, drilling and excavation works that disturb the integrity of soil horizons and natural dominant vegetation cover. In turn, construction and drilling work lead to an increase in the number of field roads concentrated around production sites, which will put additional pressure on soil and vegetation cover. Considerin' the area's sharp continental climatic conditions, aridity of the climate, salinity of soils, as well as the impact of the Aral Sea problem, it will take several years for the soil and vegetation cover to regenerate itself. Impacts may manifest themselves in the overgrowth of territories with weed vegetation species and displacement of dominant species. Indirect impacts may include dusting and releasing fuel combustion products from vehicles onto soil and vegetation. [GRI 3-3](#) However, due to the increased wind regime and high dispersion rate of nitrogen and sulfur compounds, 'he latter's impact will not affect the vital state of vegetation cover. [GRI 304-2](#)



The main type of impact is mechanical disturbance of the soil and vegetation cover within the mining allotment area, resulting in disturbance of animals, whereby reptiles, birds and mammals may be displaced for some distance during construction works, and fragmentary changes 'o animals' natural habitats occur. Once construction is complete, the impact on wildlife will be significantly reduced. Some species of large mammals and some bird species that were displaced from the area or changed their migration routes due to disturbance during the construction period may re-establish themselves in the area. Impacts may manifest themselves through the introduction of invasive animal species. [GRI 3-3](#) [GRI 304-2](#) These processes are not irreversible and will not affect the gene pool of animals in the area. The significance of this impact is low.

PORTFOLIO COMPANIES REGULARLY RESTORE DISTURBED LAND AS A RESULT OF THEIR ACTIVITIES.

JSC NAC Kazatomprom in 2023 carried out monitoring studies the state of biodiversity in the area where uranium mines are located, determining the composition of flora and fauna, taking into account rare and red-listed species. [GRI 3-3](#)

As work is completed at fields, construction sites and other works, phased reclamation works are carried out to restore the landscape and vegetation cover and return the land to economic turnover. [GRI 304-3](#)



List of affected areas significant for biodiversity conservation GRI 304-1

Important Bird Areas (IBA) affected or located near the territories of Portfolio Companies of the Fund⁵³

N°	IBA	Name of the legal entity
1	KZ006	Intergas Central Asia JSC (JSC NC QazaqGaz)
2	KZ008	KazTransOil JSC (JSC NC KazMunayGas)
3	KZ009	KazTransOil JSC (JSC NC KazMunayGas)
4	KZ010	Intergas Central Asia JSC (JSC NC QazaqGaz)
5	KZ011	1. KazTransOil JSC (JSC NC KazMunayGas) 2. Isatai Operating Company LLP (JSC NC KazMunayGas)
6	KZ012	Aktau Sea Northern Terminal LLP (JSC NC Kazakhstan Temir Zholy)
7	KZ013	KazTransOil JSC (JSC NC KazMunayGas)
8	KZ016	KazTransOil JSC (JSC NC KazMunayGas)
9	KZ017	KazTransOil JSC (JSC NC KazMunayGas)
10	KZ018	Intergas Central Asia JSC (JSC NC QazaqGaz)
11	KZ049	First Wind Power Station (Samruk-Energy JSC)
12	KZ056	Ereymentay Wind Power LLP (Samruk-Energy JSC)
13	KZ063	Intergas Central Asia JSC (JSC NC QazaqGaz)
14	KZ065	Intergas Central Asia JSC (JSC NC QazaqGaz)
15	KZ066	Intergas Central Asia JSC (JSC NC QazaqGaz)
16	KZ068	1. Karatau LLP (JSC NAC Kazatomprom) 2. Uranenergo LLP (JSC NAC Kazatomprom)
17	KZ069	1. Kazatomprom-SaUran LLP (JSC NAC Kazatomprom) 2. LLP JV Akbastau (JSC NAC Kazatomprom) 3. Uranenergo LLP (JSC NAC Kazatomprom) 4. ShalkiyaZinc LTD JSC (JSC NMC Tau-Ken Samruk) 5. Intergas Central Asia JSC (JSC NC QazaqGaz)
18	KZ070	1. Kazatomprom-SaUran LLP (JSC NAC Kazatomprom) 2. LLP JV Akbastau (JSC NAC Kazatomprom) 3. Uranenergo LLP (JSC NAC Kazatomprom) 4. ShalkiyaZinc LTD JSC (JSC NMC Tau-Ken Samruk) 5. Intergas Central Asia JSC (JSC NC QazaqGaz)
19	KZ071	ShalkiyaZinc LTD JSC (JSC NMC Tau-Ken Samruk)
20	KZ072	1. LLP JV KATKO LLP (JSC NAC Kazatomprom) 2. ShalkiyaZinc LTD JSC (JSC NMC Tau-Ken Samruk)
21	KZ073	Intergas Central Asia JSC (JSC NC QazaqGaz)
22	KZ076	1. Shardara HPP JSC (Samruk-Energy JSC) 2. Intergas Central Asia JSC (JSC NC QazaqGaz)
23	KZ084	EWP LLP, FWPS LLP (Samruk-Energy JSC)
24	KZ103	U.D. Kantayev Moinak Hydroelectric Power Plant (Samruk-Energy JSC)
25	KZ105	Bogatyr Komir LLP (Samruk-Energy JSC)
26	KZ108	1. Shulba HPP JSC (Samruk-Energy JSC) 2. Kazzinc LLP (JSC NMC Tau-Ken Samruk)

⁵³<http://datazone.birdlife.org/site/mapsearch>

Key Biodiversity Areas (KBA) affected or located near the territories of Portfolio Companies of the Fund⁵⁴

N°	KBA	Name of the legal entity
1	19 944	Shardara HPP JSC (Samruk-Energy JSC)
2	19 955	1. LLP JV KATKO LLP (JSC NAC Kazatomprom) 2. ShalkiyaZinc LTD JSC (JSC NMC Tau-Ken Samruk)
3	20 601	U.D. Kantayev Moinak Hydroelectric Power Plant (Samruk-Energy JSC)
4	20 927	1. Ozenmunaigas JSC (JSC NC KazMunayGas) 2. Aktau Sea Northern Terminal LLP (JSC NC Kazakhstan Temir Zholy)
5	21 811	Ozenmunaigas JSC (JSC NC KazMunayGas)
6	21 947	ShalkiyaZinc LTD JSC (JSC NMC heat and electricity generation)
7	21 969	Samruk-Green Energy LLP (Samruk-Energy JSC)
8	21 980	Embamunaigas JSC (JSC NC KazMunayGas)
9	21 986	EWP LLP, FWPS LLP (Samruk-Energy JSC)
10	22 007	KMG-Karachaganak LLP (JSC NC KazMunayGas)
11	22 284	1. Kazatomprom-SaUran LLP (JSC NAC Kazatomprom) 2. ShalkiyaZinc LTD JSC (JSC NMC Tau-Ken Samruk)
12	46 725	U.D. Kantayev Moinak Hydroelectric Power Plant (Samruk-Energy JSC)

[The list of Specially Protected Species is listed in Annex 4.](#)

⁵⁴ <https://www.keybiodiversityareas.org/sites/search>