BEYKÖY REGULATOR AND HEPP FACILITY BIODIVERSITY ACTION PLAN

1.1 Entrance

Beyköy Hydroelectric Power Plant (HES) is located on the Sakarya River in the Sarıcakaya district of Eskişehir. The power plant, owned by Zorlu Enerji, has an installed capacity of 16.80 MWe, making it the 622nd largest power plant in Turkey and the 6th largest in Eskişehir. The plant is also the 259th largest hydroelectric power plant in Turkey.

Beyköy HES generates an average of 48,441,458 kilowatt-hours of electricity, which can meet all the electricity needs (housing, industry, metro transportation, public offices, street lighting, etc.) of approximately 13,337 people in their daily lives. When considering only residential electricity consumption, Beyköy HES can produce enough electricity to meet the needs of 16,217 homes.

The project area is located approximately 1.9 km away from Laçin village in a straight line. Additionally, the site is about 1.2 km from Düköy village, 2.1 km from Yenice village, 4.4 km from Kuzucular village, 10.4 km from Osmanköy village, 12.8 km from Kavakköy village, 6.8 km from Alapınar village, 8.1 km from Çamalan village, 4.6 km from Tekirler village, 12 km from Dağküplü village, 4.7 km from Kapıkaya village, 7.9 km from Mayıslar village, 9.6 km from Iğdır village, 11.3 km from Sarıcakaya village, 16.3 km from Yukarıçaylı village, 17.1 km from Aşağıçaylı village, and 10.3 km from Beyyayla village (Figures 1 – 5).

There are significant wetland areas surrounding the project site. In addition to being located on the Sakarya River, the project site is approximately 3.1 km from Yenice Dam, 14.7 km from Gökçekaya Dam, 10.9 km from Çamalan Pond, and 11.4 km from Hamamboğazı Stream in a straight line. Additionally, there are numerous small ponds in the vicinity (Figures 6 – 8).

Shape one Project to the field belonging Satellite image

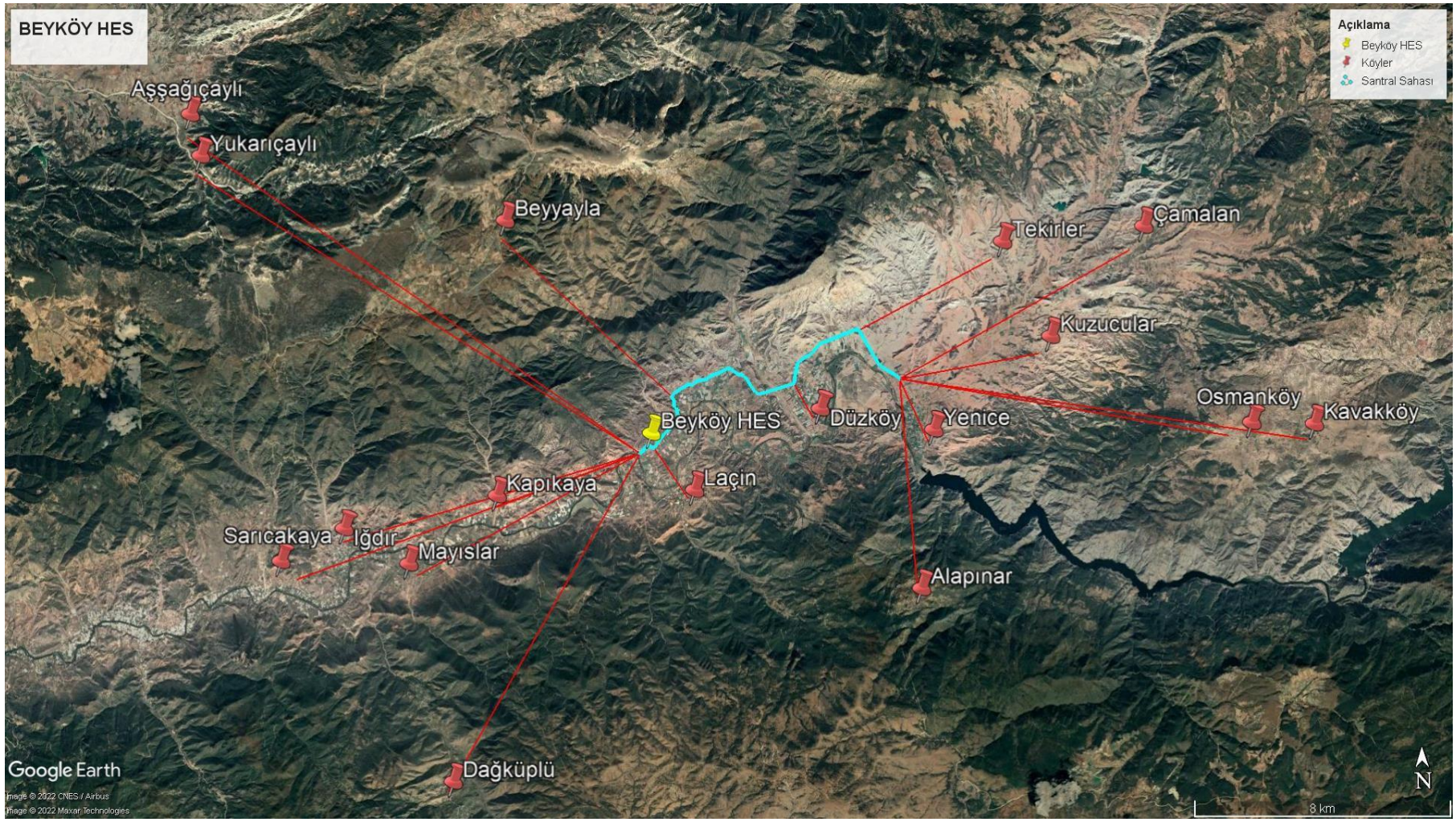

Figure 2: Settlements of Villages (Neighborhoods) in the Vicinity of the Project Area

Figure 3 Settlements of Villages (Neighborhoods) in the Vicinity of the Project Area

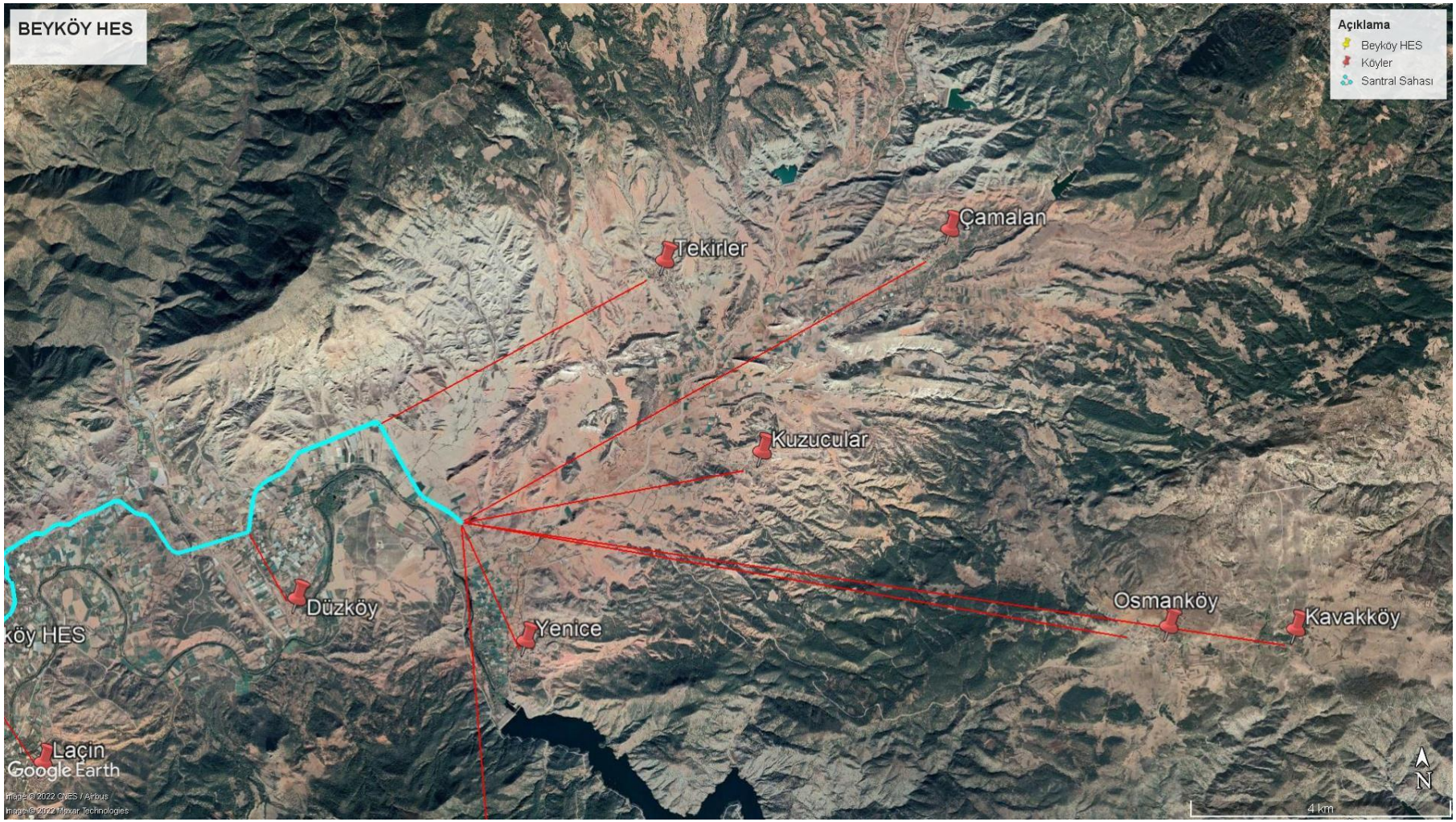

Figure 4: Village (Neighborhood) Settlements in the Vicinity of the Project Site.

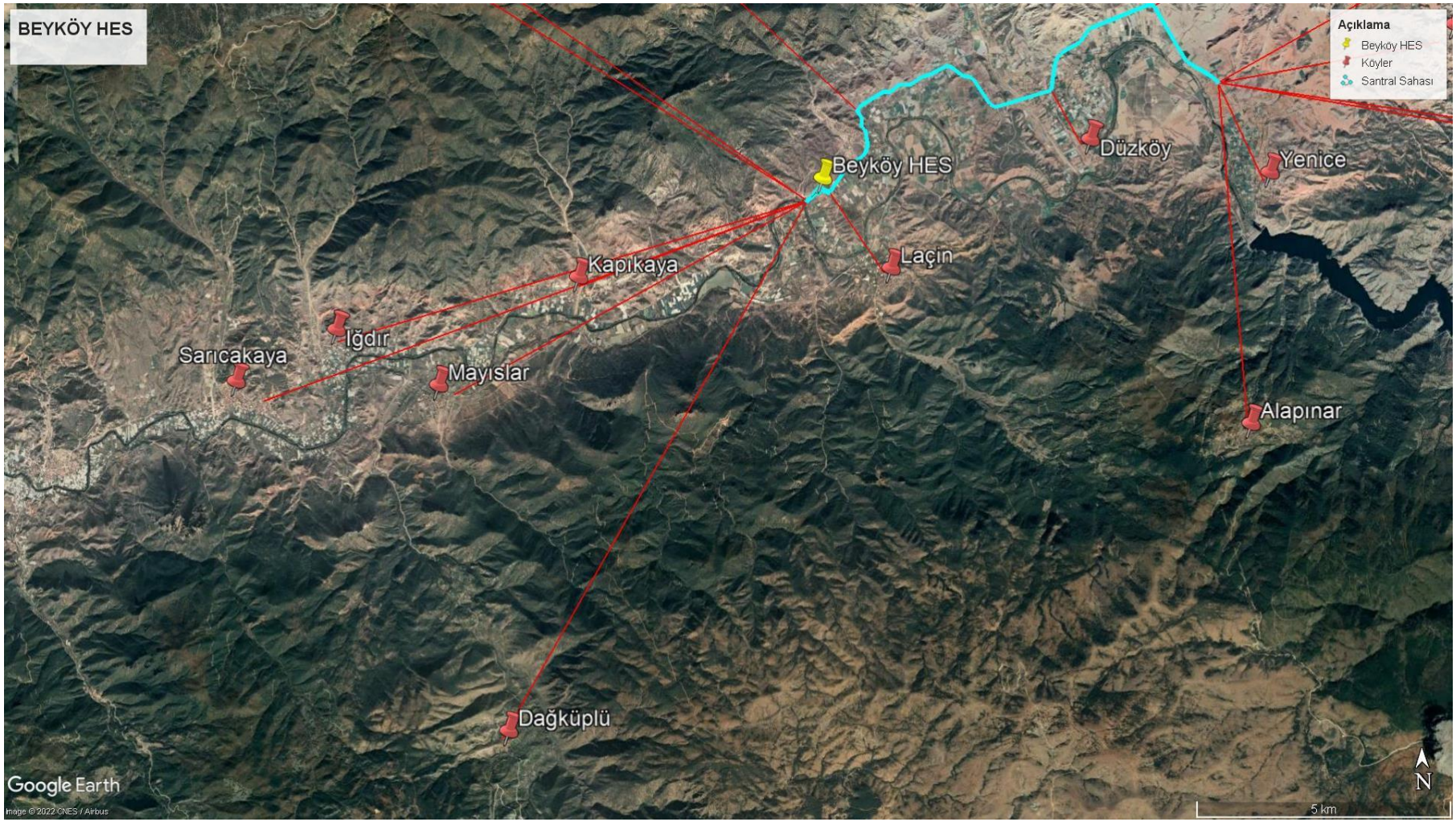

Figure 5: Village (Neighborhood) Settlements in the Vicinity of the Project Site

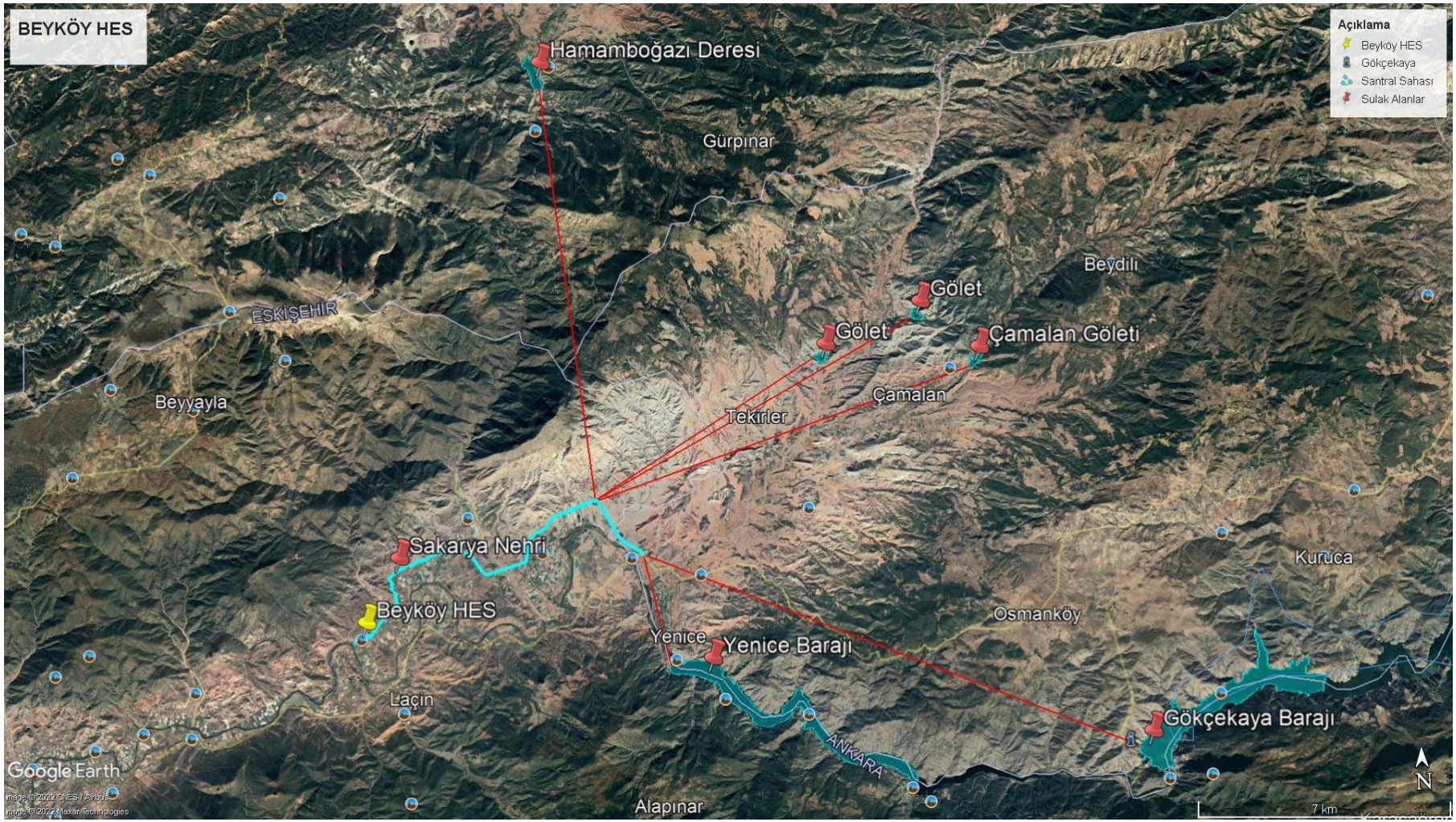

Figure 6: Significant Water Bodies Surrounding the Project Area

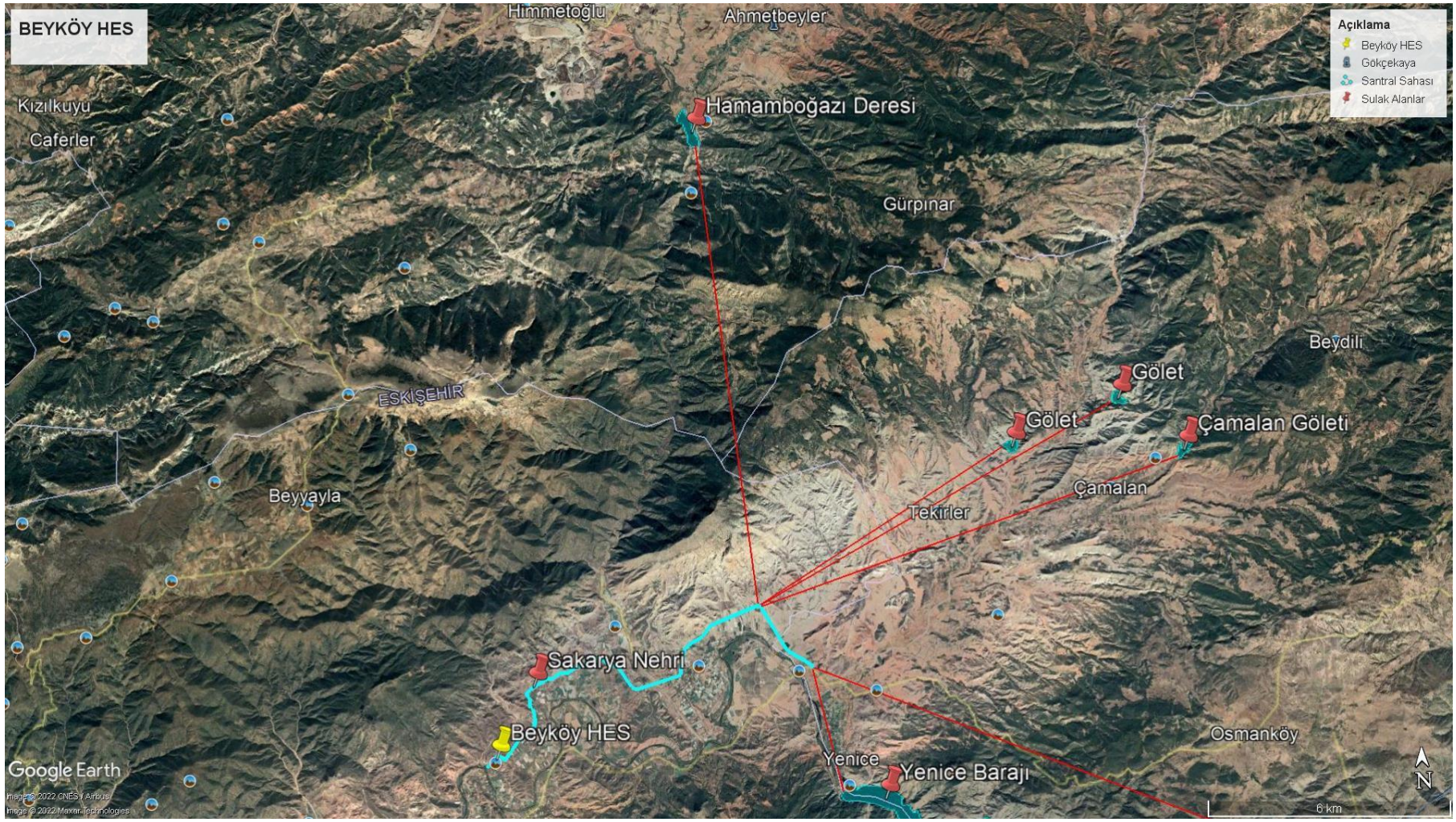

Figure 7: Significant Water Bodies Surrounding the Project Area

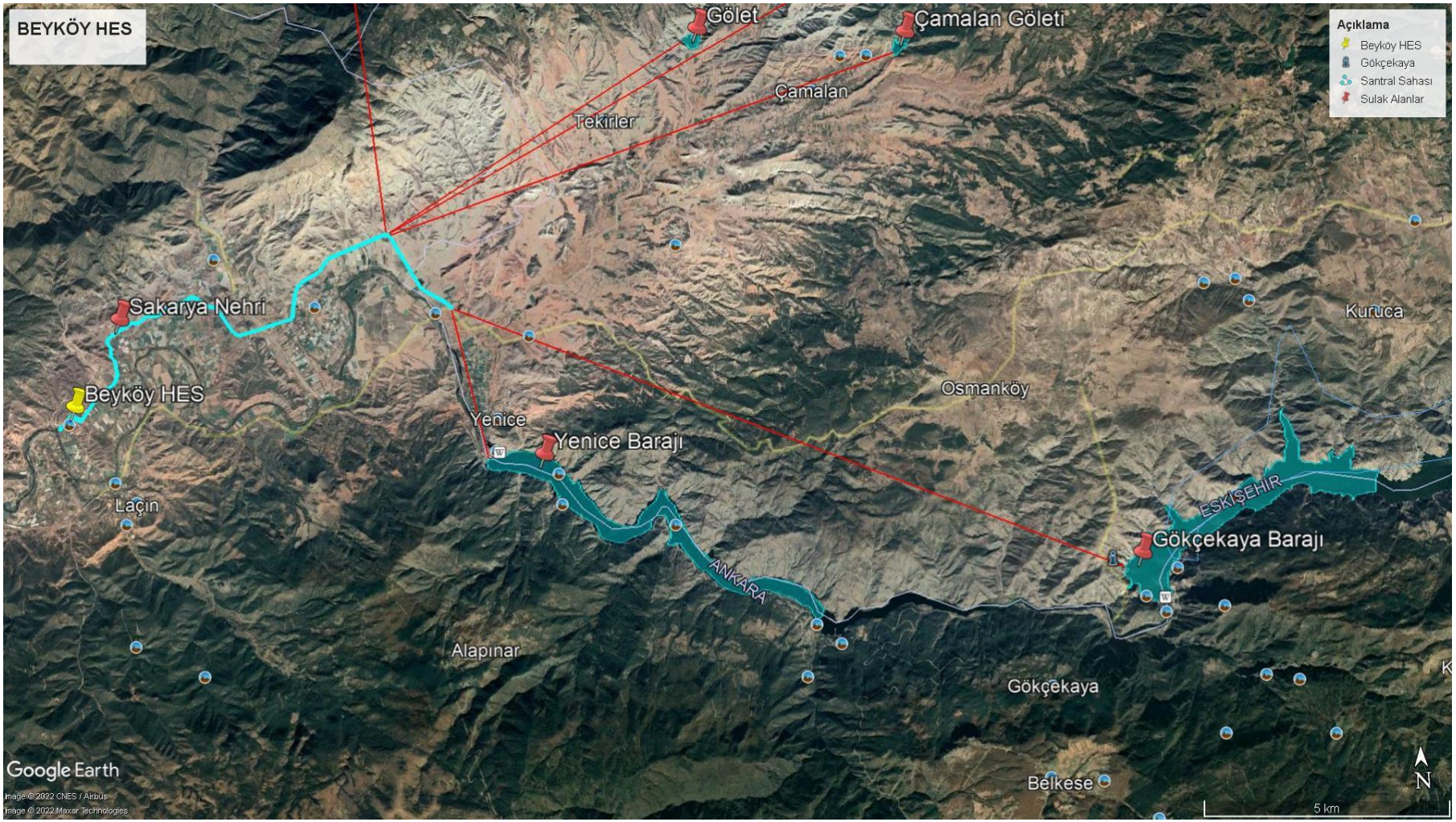

Figure 8: Significant Water Bodies Surrounding the Project Area

1.2 Relationship of the Area with Protected and Special Status Areas:

Considering the position of Beyköy HPP site in relation to the surrounding protected areas, there is an approximate 1.4 km distance between the Sundiken Mountains Key Biodiversity Area (KBA) boundary and the outer boundary of the plant site (Figure 9).

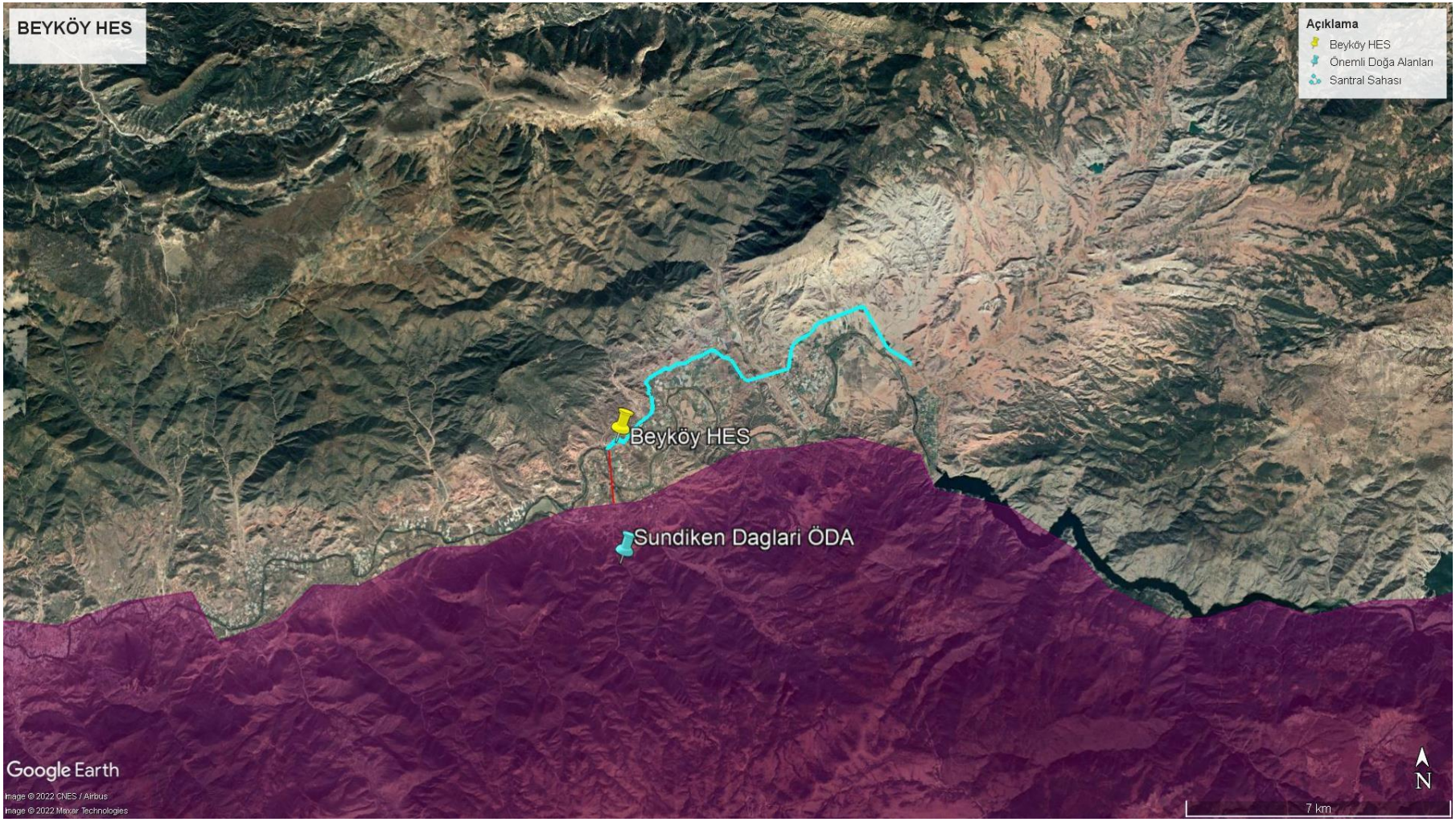

Figure 9: Satellite Image Showing the Relationship Between the Project Site and Protected Areas.

1.3 Identification and Classification of Habitats within the Impact Area of Beyköy Regulator and HPP Facility:

The “Beyköy Regulator and Hydroelectric Power Plant (HPP) project” is operated by Zorlu Doğal Elektrik Üretimi A.Ş., located on the Sakarya River in the Sarıcakaya district of Eskişehir.

There are 10 different habitat types within the project area. Of these habitats, 6 are natural, and the remaining 4 are modified habitats. The types of vegetation that develop in natural areas are characterized by their vegetation types according to Level 3 and Level 2 codes in the EUNIS Habitat Classification (Figure 10).

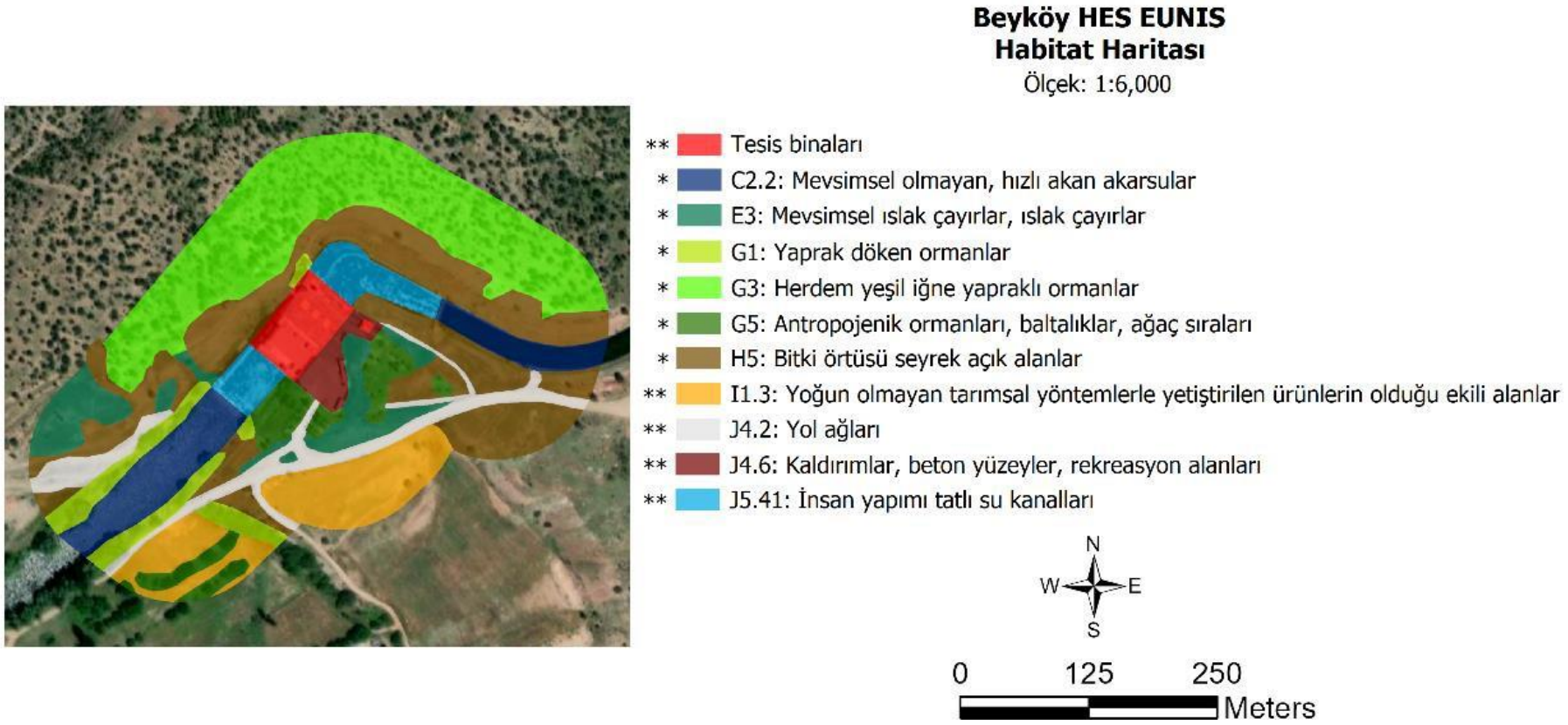

Figure 10: Beyköy HES EUNIS Habitat Map.

- **Natural habitats**

C2.2 Non-seasonal Fast-flowing Rivers

At an elevation of 220 meters near the facility, the subspecies Cirsium arvense vestitum is present in this habitat; observed species include Potentilla reptans, Sanguisorba minor subspecies lasiocarpa, Periploca graeca variety graeca, Convolvulus lineatus, Symphytum orientale, Scutellaria hastifolia, Lamium purpureum variety purpureum, Nepeta italica subspecies italica, Prunella vulgaris, Mentha aquatica, Mentha longifolia subspecies typhoides variety typhoides, Gonilimonium incanum, Salix alba, Galium rivale, Galium verum subspecies verum, and Hordeum geniculatum.

Photos 1: Non-seasonal Fast-flowing Rivers (EUNIS: J2.2)

E3 Seasonal Wet meadows, Wet streams

In this habitat observed at an elevation of 220 meters around the facility, the following plant taxa have been identified: Ranunculus constantinopolitanus, Sanguisorba minor subspecies lasiocarpa, Anthemis triumfettii, Tripleurospermum sevanense, Centaurea thirkei, Cichorium intybus, Scorzonera cana variety cana, Hieracium pannosum, Campanula olympica, Campanula rapunculus variety rapunculus, Cynoglossum montanum, Verbascum georgicum, Veronica gentianoides subspecies gentianoides, Veronica serpyllifolia, Teucrium orientale variety orientale, Nepeta nuda subspecies nuda, Prunella laciniata, Salvia virgata, Plantago maritima, Plantago lanceolata, Asparagus tenuifolius, Asphodeline damascena subspecies damescena, and Allium atroviolaceum.

G1 Deciduous Forests

Starting at an elevation of 250 meters, the plant taxa identified in this habitat include: Dorycnium graecum, Pyrus elaeagnifolia subspecies elaeagnifolia, Periploca graeca variety graeca, Veronica chamaedrys, Veronica officinalis, Prunella laciniata, Salvia sclarea, Aristolochia bodamae, Corylus colurna, Asperula involucrata, Galium odoratum, Carex distans, and Phleum pratense.

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Photos: 2 Deciduous Forests (EUNIS: G1)

G3 Evergreen Needle Leaf Forests

In this habitat, starting at an elevation of 220 meters, the following plant taxa have been identified: Pinus sylvestris, Pyrus elaeagnifolia subspecies elaeagnifolia, Salvia sclarea, Carex distans, Dorycnium graecum, Prunella laciniata, Lotus corniculatus variety alpinus, Helichrysum graveolens, Anthemis aciphylla variety aciphylla, Tanacetum poteriifolium, Carduus pycnocephalus subspecies albidus, Crupina crupinastrum, Crepis foetida subspecies commutata, Legousia speculum-veneris, Moneses uniflora, Pinus nigra.

Photos 3: Evergreen Needle Leaf Forests (EUNIS: G3)

G5 Anthropogenic Forests, Coppice Forests

This habitat, beginning at an elevation of 230 meters and spreading into G1 and G3 habitats, consists of a mixture of plant taxa found nearby the facility.

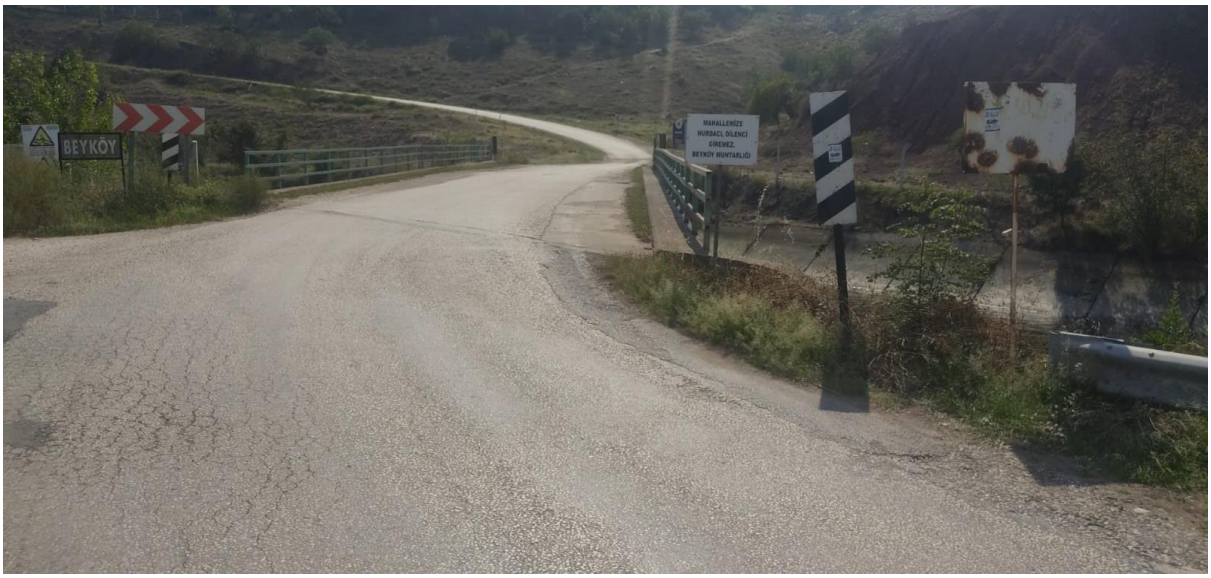
H5 Sparse Vegetation Clearings

At an elevation of 230 meters at the facility, the following plant taxa have been identified: Ranunculus isthmicus subspecies stepporum, Brassica elongata, Crambe tataria variety tataria, Isatis glauca subspecies glauca, Fumana aciphylla, Polygala pruinosa subspecies pruinosa, Silene dichotoma subspecies sibthorpiana, Echinophora tournefortii, Scandix australis subspecies grandiflora, Inula montbretiana, Anthemis tinctoria variety pallida, Achillea wilhelmsii, Gundelia tournefortii variety tournefortii, Onopordum turcicum, Centaurea coronopifolia, Centaurea pichleri subspecies pichleri, Crupina crupinastrum, Scorzonera laciniata subspecies laciniata, Crepis sancta, Phlomis pungens variety hirta, Sideritis montana subspecies montana.

➢ **Modified Habitats**

Areas with habitat codes J4.2, J42, J6.1 are characterized by concrete, chemical water, and asphalt and lack floral content. However, the cleaning of seeds germinating in cracks in these structures is important for the integrity of the system. In habitats coded J4.6 and I.1.3, care should be taken that the plants used for landscaping and food purposes are not invasive species.

Photos 4: Actively Used Industrial Structures in Rural Areas (EUNIS: J2.3)



Photos 5: Road Networks with Sidewalks and Recreational Areas (EUNIS: J4.2 and J4.6)

Photos 6: Man-made Freshwater Channels (EUNIS: J41)

Photos 7: Cultivated Fields with Crops Grown Using Low-Intensity Agricultural Methods (EUNIS: I1.3)

When examining the vegetation of the project site and its surroundings, a large part is comprised of natural deciduous, coniferous, or mixed forest areas that are susceptible to anthropogenic effects, along with human-shaped fruit orchards and streambed habitats.

➢ **Aquatic Habitats**

The degradation and reduction of habitats in aquatic ecosystems are increasing day by day due to anthropogenic activities and climate change. Interventions in the water regime, deterioration of water quality, illegal fishing, and uncontrolled activities are harming aquatic life and their surrounding habitats. Understanding and managing the impact of human activities on aquatic ecosystems is crucial. Having knowledge of the spatial distribution of habitats and mapping them is essential for effective management.

In the classification of aquatic habitats in the area, the most current version of the EUNIS Habitat Classification has been used, providing a method that allows a broader analysis of habitats in relation to ecological regions, climate, soil, and environmental pressures. This classification method not only facilitates data comparison with other countries but also organizes the system into 10 main categories and their subcategories according to a standardized terminology.

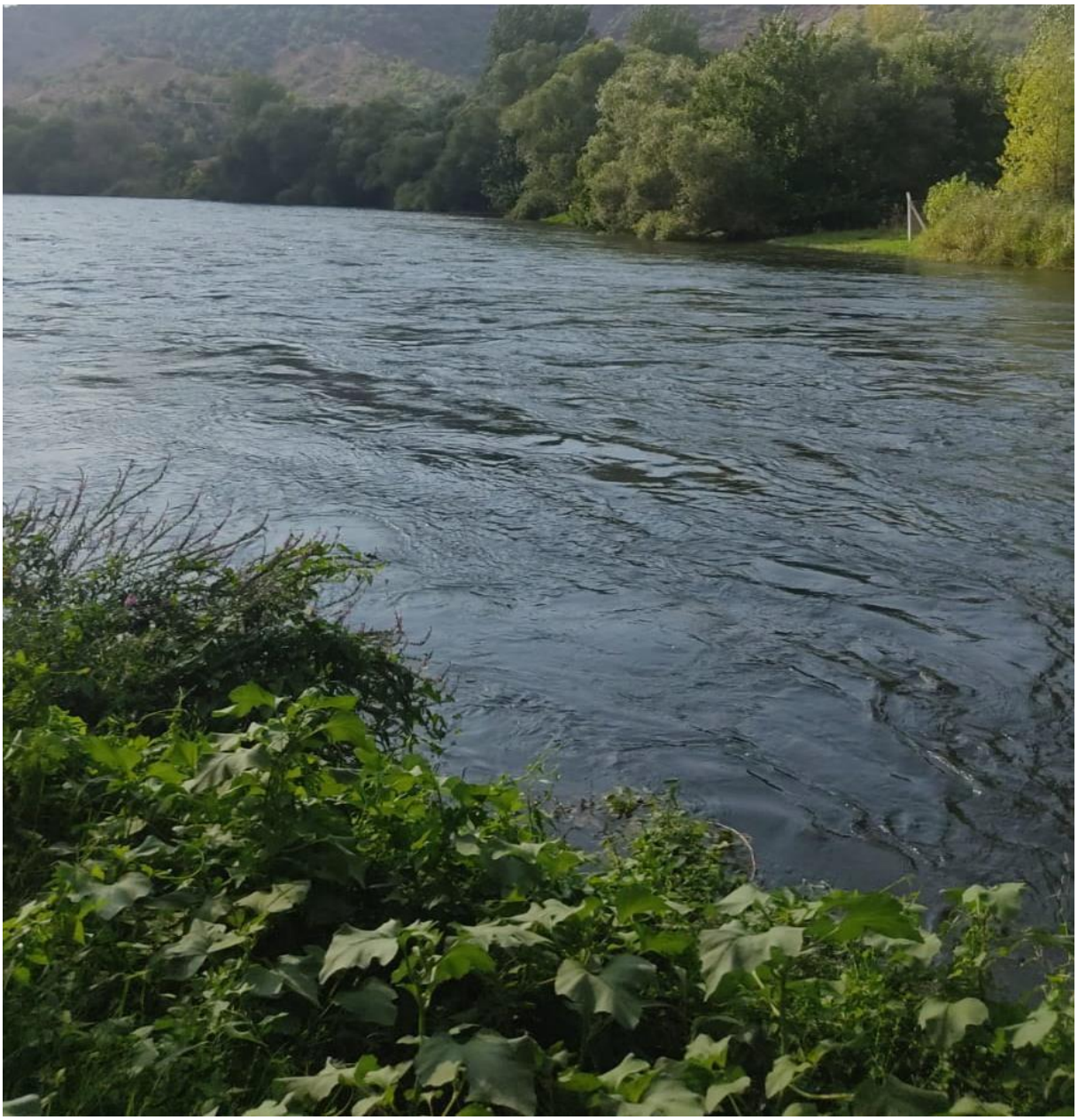
The investigations conducted in the Beyköy HES area have not identified any particular habitat type. Semi-natural habitats are noticeable in the regulator and power plant areas, while other sections follow the natural habitat structure along the streams. In the area, fishes that feed on algae, zooplankton, or benthic organisms are at the top of the aquatic food chain. Fish habitats observed in the Beyköy HES area are listed in Table 1.

Table1: Beyköy HEPP aquatic habitat And Features

EUNIS CODE	HABITAT NAME	FEATURES	RAID SPECIES
C2	surface streams	in the field Other Continuous Or Seasonal Streams, This Habitat They are representatives of their type in the field	Top Trout generation; *salmo macrostigma* , Lower Trout generation; Trout And Golyan (Pearl) snapper (*Alburnoides bipunctatus*) moustachioed Fish Generation: moustachioed fish (*Barbus lacerta*), woodfish (*Acanthobrama marmid*) and the hornbill (*Chondrostoma regium*), fresh water mullet (*Squalius cephalus*) type diversity more is too much.

The stream bed generally looks like a natural habitat (Photo 9). Degraded habitat structures around Beyköy HEPP have adapted to the natural environment since there has been no external influence so far.

Photos 8: Beykoy HEPP in the field Exit juice around Semi-Natural habitat Structure



Photos 9: Project Area Natural habitat Structure

1.2 Beyköy regulator And HEPP facility Effect in the field floristic biodiversity Definition

IFC PS-6 and Guidance in the facility area No plant taxon with CR and EN status that complies with Note 6 criteria was found. Therefore, there is no critical habitat supporting these taxa . Apart from the coppice tree communities whose cover has been broken by human influence, there are reeds, reeds and willows in non-seasonal, fast-flowing stream beds.

1.3 Beyköy regulator And HEPP facility Effect in the field faunistic biodiversity Definition

1.3.1 Amphibian

Project in the field generation in danger One amphibian There is no type .

Criterion 1: Refers to Critically Endangered (CR) and/or Endangered (EN) Species. There are no amphibian species in the CR and/or EN category in the project area **.**

Criterion 2: Refers to Endemic and/or Narrowly Ranged Species. There are no endemic and/or narrow-range **amphibian species in the project area.**

Criterion 3: Refers to Migratory and/or Community Concentrated Species. There is no amphibian species in the project area **that meets this criterion.**

Criterion 4: Refers to Highly Threatened and/or Uniquely Rare Ecosystems. Important habitats for amphibian species in the project area are aquatic habitats. The project has been operating in the area for many years. Life water is released into the stream bed. The river environment is largely composed of natural habitats. is formed. In the current situation, it is not possible to say that the river habitat and its immediate surroundings are under high threat.

1.3.2 Reptiles

There are no endemic reptile species in the project area. According to the IUCN lists, the only reptile species that is vulnerable to extinction **is the Tortoise (*Testudo graeca*)** and is listed in the VU category. Tortoise is also included in the BERN Convention ANNEX-II and CITES ANNEX-II lists.

Apart from this, there is no endangered or endemic reptile species in the project area .

are Natrix , which are partially or largely water-dependent reptile species. *tessellata* and *Natrix natrix* . The impact of these species may be due to the decrease in water in the stream bed due to not enough water being released into the stream bed. However, since the amount of lifewater released into the stream bed is at a very good level, no negative impact on these species has been observed in the current situation.

In this context, if we make a critical habitat assessment of the project area in line with faunistic data;

Criterion 1: Refers to Critically Endangered (CR) and/or Endangered (EN) Species. **There are no** reptile species in the CR and/or EN category in the project area .

Criterion 2: Refers to Endemic and/or Narrowly Ranged Species. **There is no** endemic or narrow-ranging reptile species in the project area .

Criterion 3: Refers to Migratory and/or Community Concentrated Species. **There is no** reptile species in the project area that meets this criterion .

Criterion 4: Refers to Highly Threatened and/or Uniquely Rare Ecosystems. The important habitat types for reptile species in the project area are the natural habitats in the region. The project has been operating in the area for many years. Natural habitats in the project area have not been negatively affected by the project. Since the project has been in operation for many years, the negative effects that occurred during the construction phase seem to have largely returned to normal. Currently, no adverse effects **have been observed on the reptile species widespread in the region** .

1.3.3 Mammals

(*Lynx) is one* of the species likely to be distributed in the region. ***lynx*** **) is listed in the EN category according to** the IUCN Mediterranean assessment. However, the project area remains outside the IUCN Mediterranean evaluation area, the Mediterranean area is generally It covers the Aegean, Marmara and Mediterranean regions. This species is not listed as endangered in the global assessment. Despite this, in this report, this species is considered to be a Critical species and an evaluation has been made here. Although not endangered, an important mammal species for the project area is **the Otter (*Lutra lutra*)** . Power plant employees confirmed the presence of the Otter in the area. The IUCN criterion for the species is NT and the Bern Convention criterion is Annex II . In other words, it is a fauna species that must be protected.

Criterion 1: Refers to Critically Endangered (CR) and/or Endangered (EN) Species. **There are no** mammal species in the CR and/or EN category in the project area .

Criterion 2: Refers to Endemic and/or Narrowly Ranged Species. There are no endemic and/or narrow-range **mammal species in the project area.**

Criterion 3: Refers to Migratory and/or Community Concentrated Species. **There is no** mammal species in the project area that meets this criterion .

Criterion 4: Refers to Highly Threatened and/or Uniquely Rare Ecosystems. The important habitat types for mammal species in the project area are the natural habitats and stream beds in the region. The project has been operating in the area for many years. Natural habitats in the region have not been negatively affected by the project. Since the project has been in operation for many years, the negative effects that occurred during the construction phase seem to have largely returned to normal. Currently, no adverse effects **have been observed on mammal species distributed in the region** .

Criterion 5: Topography, geology, soil, temperature, vegetation, and combinations of these factors One of the region structural features regional species to take shape And ecological features It can affect the evolutionary processes that lead to In some cases, distinctive spatial features form populations or subpopulations of genetically unique plant and animal species. associated with their populations. Physical or spatial features have been identified as spatial catalysts for evolutionary and ecological processes, and such features are often associated with species diversity. Species (or subpopulations of species) that emerge due to the maintenance of basic evolutionary processes inherent in an area have become the main focus in recent years, along with the conservation of biodiversity , especially the process of preserving genetic diversity. By maintaining species diversity in an area, the genetic diversity within species as well as the processes that drive speciation ensure evolutionary resilience in a system, which is especially important in rapidly changing climate conditions.

For illustrative purposes, here are some potential examples of areal features associated with evolutionary processes,

Regions with high spatial heterogeneity are a positive force for speciation , as species are naturally selected for their ability to adapt and diversify .

gradients , also known as ecotones , produce transitional habitat that is associated with the process of speciation and high species and genetic diversity.

edaphic interfaces are areas of soil types (e.g. serpentine outcrops, limestone) that lead to the formation of unique plant communities characterized by both rarity and endemism . and gypsum sediments) are special sequences.

Connection between habitats (e.g. biological corridors), especially fragmented It is important in the maintenance of habitats and metapopulations and ensures species migration and gene flow. This connection also extends across elevation and climate gradients and across crest-to- coast to coast)" also includes biological corridors.

Areas with proven importance for adaptation to climate change for both species and ecosystems are also included in this criterion.

The importance of structural features in an area that can influence evolutionary processes will be determined on a case-by-case basis, and the determination of critical habitat will be largely based on scientific knowledge. In many cases, this criterion will apply in areas that have been previously investigated and are known or suspected to be associated with unique evolutionary processes. Although systematic methods exist to measure and prioritize evolutionary processes in a field , these methods are beyond the reasonable conditions of evaluations typically conducted by the private sector.

Criterion 5 was evaluated together for Amphibians, Reptiles and Mammals. Criterion 5 involves evaluating whether the region generally contains significant evolutionary processes. Beykoy The area where the HEPP is located does not show a special evolutionary process. The region does not have a special geological structure or a special history and therefore does not contain a large number of critical and/or endemic species. In this regard, the area **does not meet** Criterion 5 .

1.3.4 Ornithology

As a result of the studies, a total of 134 bird species were identified in the project area and its immediate surroundings. The list of these species, their global Red List status, and the species' status in BERN, CITES and 2022 MAK decisions are given in Table 2 below.

A total of 4 globally endangered bird species have been identified around the facility. These species are assessed as “EN”, that is, endangered. Little Vulture (*Neophron percnopterus*) and “VU”, which means Vulnerable, the Imperial Eagle (*Aquila heliaca*), stepmother (*Streptopelia turtur*) and Elmabaş Patka (*Aythya ferina*) species. Of the identified species, 94 are listed in BERN Agreement Annex-2, 31 are listed in BERN Agreement Annex-1, 3 are listed in CITES Annex-1 and 14 are listed in CITES Annex-2.

In this context, if we make a critical habitat assessment of the project area in line with faunistic data;

Criterion 1: Habitats Important to Critically Endangered (CR) or Endangered (EN) Species

Little Vulture (*Neophron percnopterus*) has a global Red List status of "EN" endangered. The species is expected to be seen in the project area during migration and in the spring and summer months corresponding to the breeding season (Kirwan et al., 2008). In order for this criterion to be evaluated properly, very detailed scientific studies aimed at making population size estimates are required in the region (see Biodiversity Action Plan).

Criterion 2: endemic And Narrow widespread Species For Important Habitats

Facility birds around This criterion It does not trigger.

Criterion 3: Habitats Hosting Globally Significant Numbers of Migratory and Foraging Species

It has been determined that there are migratory birds among the listed species in and around the facility area. Considering the topographic location of the facility, the project is not expected to cause a serious problem for migratory bird populations.

Criterion 4: High at level Threatening under And/Or Unique Rare Ecosystems

None of the habitats around the site are listed as high level or unique ecosystems on the IUCN Red List of Ecosystems and therefore this criterion will not be triggered.

Criterion 5: Important Evolutionary Processes With identified habitats

Beyköy Weir and HEPP facility, elevation, moisture gradients or any other site that indicates that the region is vital to sustaining unique or distinctive evolutionary processes. is not significantly different from the surrounding region in terms of a geological, ecological or evolutionary factor. This for this reason facility around from habitats none, Criterion 5th It does not trigger.

Table 2: Project in the field Found and Finding Likely Bird Types

Type Scientific First Name	English Name	endemism	IUCN (Spherical)	bern	MAKK	CITES
Accipiter nisus	Eurasian Sparrowhawk	Not endemic	LC	Annex 2	KD	Annex 2
Acrocephalus scirpaceus	Eurasian Reed Warbler	Not endemic	LC	KD	KD	KD
Aegithalos caudatus	Long-tailed Tit	Not endemic	LC	Annex 3	KD	KD
Aegypius monachus	Cinereous Vulture	Not endemic	LC	Annex 2	KD	KD
Alauda arvensis	Eurasian Skylark	Not endemic	LC	Annex 3	Annex 1	KD
Alectoris chukar	Chukar Partridge	Not endemic	LC	Annex 3	Annex 2	KD
Anas platyrhynchos	Mallard	Not endemic	LC	Annex 3	Annex 2	KD
Anthus spinoletta	Water Pipit	Not endemic	LC	Annex 2	KD	KD
Apus apus	Common Swift	Not endemic	LC	Annex 3	KD	KD
Aquila chrysaetos	Golden Eagle	Not endemic	LC	Annex 2	KD	Annex 2
Aquila heliaca	Eastern Imperial Eagle	Not endemic	VU	Annex 2	KD	Annex 1
Ardea alba	Great White Egret	Not endemic	LC	Annex 2	KD	KD
Ardea cinerea	Grey Heron	Not endemic	LC	Annex 3	Annex 1	KD
Ardea purpurea	Purple Heron	Not endemic	LC	Annex 2	KD	KD
Athene noctua	Little Owl	Not endemic	LC	Annex 2	KD	Annex 2
Buteo buteo	Common Buzzard	Not endemic	LC	Annex 2	KD	Annex 2
Buteo rufinus	Long-legged Buzzard	Not endemic	LC	Annex 2	KD	Annex 2
Caprimulgus europaeus	European Nightjar	Not endemic	LC	Annex 2	KD	KD
Carduelis carduelis	European Goldfinch	Not endemic	LC	Annex 2	KD	KD
Cecropis daurica	Red-rumped Swallow	Not endemic	LC	Annex 2	KD	KD
Cettia cetti	Cetti's Warbler	Not endemic	LC	Annex 2	KD	KD
Chloris chloris	European Greenfinch	Not endemic	LC	Annex 2	KD	KD
Ciconia ciconia	White Stork	Not endemic	LC	Annex 2	KD	KD

Type Scientific First Name	English Name	endemism	IUCN (Spherical)	bern	MAKK	CITES
Ciconia nigra	Black Stork	Not endemic	LC	Annex 2	KD	Annex 2
Circaetus gallicus	Short-toed Snake Eagle	Not endemic	LC	Annex 2	KD	Annex 2
Coccothraustes coccothraustes	Hawfinch	Not endemic	LC	Annex 2	KD	KD
Columba livia	Rock Pigeon	Not endemic	LC	Annex 3	Annex 2	KD
Columba oenas	Stock Dove	Not endemic	LC	Annex 3	Annex 1	KD
Columba palumbus	Common Wood Pigeon	Not endemic	LC	KD	Annex 2	KD
Corvus corax	Common Raven	Not endemic	LC	Annex 3	Annex 1	KD
Corvus cornix	Hooded Crow	Not endemic	LC	KD	Annex 2	KD
Corvus frugilegus	Rook	Not endemic	LC	KD	Annex 2	KD
Corvus monedula	Jackdaw	Not endemic	LC	KD	Annex 2	KD
Cuculus canorus	Common Cuckoo	Not endemic	LC	Annex 3	KD	KD
Curruca communis	Lesser Whitethroat	Not endemic	LC	Annex 2	KD	KD
Curruca crassirostris	Marmora's Warbler	Not endemic	LC	Annex 2	KD	KD
Curruca curruca	Lesser Whitethroat	Not endemic	LC	Annex 2	KD	KD
Curruca melanocephala	Sardinian Warbler	Not endemic	LC	Annex 2	KD	KD
Cyanistes caeruleus	Blue Tit	Not endemic	LC	Annex 2	KD	KD
Delichon urbicum	Common House Martin	Not endemic	LC	Annex 2	KD	KD
Dendrocopos major	Great Spotted Woodpecker	Not endemic	LC	Annex 2	KD	KD
Dendrocoptes medius	Middle Spotted Woodpecker	Not endemic	LC	Annex 2	KD	KD
Dryobates minor	Lesser Spotted Woodpecker	Not endemic	LC	Annex 2	KD	KD
Egretta garzetta	Little Egret	Not endemic	LC	Annex 2	KD	KD
Emberiza calandra	Corn Bunting	Not endemic	LC	Annex 3	Annex 1	KD
Emberiza cia	Rock Bunting	Not endemic	LC	Annex 2	KD	KD
Emberiza cirlus	Cirl Bunting	Not endemic	LC	Annex 2	KD	KD

Type Scientific First Name	English Name	endemism	IUCN (Spherical)	bern	MAKK	CITES
Emberiza citrinella	Yellowhammer	Not endemic	LC	Annex 2	KD	KD
Emberiza hortulana	Ortolan Bunting	Not endemic	LC	Annex 3	Annex 1	KD
Emberiza melanocephala	Black-headed Bunting	Not endemic	LC	Annex 2	KD	KD
Erithacus rubecula	European Robin	Not endemic	LC	Annex 2	KD	KD
Falco peregrinus	Peregrine Falcon	Not endemic	LC	Annex 2	KD	Annex 1
Falco subbuteo	Eurasian Hobby	Not endemic	LC	Annex 2	KD	Annex 2
Falco tinnunculus	Common Kestrel	Not endemic	LC	Annex 2	KD	Annex 2
Falco vespertinus	Red-footed Falcon	Not endemic	VU	Annex 2	KD	Annex 2
Ficedula albicollis	Collared Flycatcher	Not endemic	LC	Annex 2	KD	KD
Fringilla coelebs	Chaffinch	Not endemic	LC	Annex 3	Annex 1	KD
Fringilla montifringilla	Brambling	Not endemic	LC	Annex 3	Annex 1	KD
Fulica atra	Common Coot	Not endemic	LC	Annex 3	Annex 2	KD
Galerida cristata	Crested Lark	Not endemic	LC	Annex 3	Annex 1	KD
Gallinula chloropus	Common Moorhen	Not endemic	LC	Annex 3	Annex 1	KD
Garrulus glandarius	Eurasian Jay	Not endemic	LC	KD	Annex 2	KD
Gypaetus barbatus	Bearded Vulture	Not endemic	NT	KD	KD	Annex 2
Haliaeetus albicilla	White-tailed Eagle	Not endemic	LC	Annex 2	KD	Annex 1
Hirundo rustica	Barn Swallow	Not endemic	LC	Annex 2	KD	KD
Iduna pallida	Eastern Olivaceous Warbler	Not endemic	LC	Annex 2	KD	KD
Irania gutturalis	White-throated Robin	Not endemic	LC	Annex 2	KD	KD
Lanius collurio	Red-backed Shrike	Not endemic	LC	Annex 2	Annex 1	KD
Lanius minor	Lesser Grey Shrike	Not endemic	LC	Annex 2	KD	KD
Lanius nubicus	Masked Shrike	Not endemic	LC	Annex 2	KD	KD
Lanius senator	Woodchat Shrike	Not endemic	LC	Annex 2	KD	KD

Type Scientific First Name	English Name	endemism	IUCN (Spherical)	bern	MAKK	CITES
Linaria cannabina	Common Linnet	Not endemic	LC	Annex 2	KD	KD
Loxia curvirostra	Red Crossbill	Not endemic	LC	Annex 2	KD	KD
Lullula arborea	Wood Lark	Not endemic	LC	Annex 3	Annex 1	KD
Luscinia megarhynchos	Common Nightingale	Not endemic	LC	Annex 2	KD	KD
Mareca penelope	Eurasian Wigeon	Not endemic	LC	Annex 3	Annex 2	KD
Melanocorypha bimaculata	Two-spotted Lark	Not endemic	LC	Annex 2	KD	KD
Melanocorypha calandra	Calandra Lark	Not endemic	LC	Annex 2	KD	KD
Merops apiaster	European Bee-eater	Not endemic	LC	Annex 2	KD	KD
Monticola saxatilis	Rock Thrush	Not endemic	LC	Annex 2	KD	KD
Monticola solitarius	Blue Rock Thrush	Not endemic	LC	Annex 2	KD	KD
Motacilla alba	White Wagtail	Not endemic	LC	Annex 2	KD	KD
Motacilla cinerea	Grey Wagtail	Not endemic	LC	Annex 2	KD	KD
Motacilla flava	Yellow Wagtail	Not endemic	LC	Annex 2	KD	KD
Muscicapa striata	Spotted Flycatcher	Not endemic	LC	Annex 2	KD	KD
Neophron percnopterus	Egyptian Vulture	Not endemic	MOST	Annex 2	KD	Annex 2
Nycticorax nycticorax	Black-crowned Night Heron	Not endemic	LC	Annex 2	KD	KD
Oenanthe isabellina	Isabelline Wheatear	Not endemic	LC	Annex 2	Annex 1	KD
Oenanthe melanoleuca	Black-eared Wheatear	Not endemic	LC	Annex 2	KD	KD
Oenanthe oenanthe	Northern Wheatear	Not endemic	LC	Annex 2	Annex 1	KD
Oriolus oriolus	Golden Oriole	Not endemic	LC	Annex 2	KD	KD
Pandion haliaetus	Osprey	Not endemic	LC	Annex 2	KD	Annex 2
Parus major	Great Tit	Not endemic	LC	Annex 2	KD	KD
Passer domesticus	House Sparrow	Not endemic	LC	KD	Annex 2	KD
Passer hispaniolensis	Spanish Sparrow	Not endemic	LC	Annex 3	Annex 1	KD

Type Scientific First Name	English Name	endemism	IUCN (Spherical)	bern	MAKK	CITES
Passer montanus	Eurasian Tree Sparrow	Not endemic	LC	Annex 3	Annex 1	KD
Perdix perdix	Grey Partridge	Not endemic	LC	KD	Annex 2	KD
Periparus ater	Coal Tit	Not endemic	LC	Annex 2	KD	KD
Pernis apivorus	European Honey Buzzard	Not endemic	LC	Annex 2	KD	Annex 2
Petronia petronia	Rock Sparrow	Not endemic	LC	Annex 2	KD	KD
Phalacrocorax carbo	Great Cormorant	Not endemic	LC	Annex 3	Annex 1	KD
Phoenicurus ochruros	Black Redstart	Not endemic	LC	Annex 2	KD	KD
Phoenicurus phoenicurus	Common Redstart	Not endemic	LC	Annex 2	KD	KD
Phylloscopus collybita	Common Chiffchaff	Not endemic	LC	Annex 2	KD	KD
Phylloscopus trochilus	Willow Warbler	Not endemic	LC	Annex 2	KD	KD
Pica pica	Magpie	Not endemic	LC	KD	Annex 2	KD
Picus viridis	European Green Woodpecker	Not endemic	LC	Annex 2	KD	KD
Podiceps cristatus	Great Crested Grebe	Not endemic	LC	Annex 3	KD	KD
Poecile lugubris	Sombre Tit	Not endemic	LC	Annex 2	KD	KD
Ptyonoprogne rupestris	Rock Martin	Not endemic	LC	Annex 2	KD	KD
Regulus ignicapillus	Firecrest	Not endemic	LC	Annex 2	KD	KD
Regulus regulus	Goldcrest	Not endemic	LC	Annex 2	KD	KD
Saxicola rubicola	European Stonechat	Not endemic	LC	Annex 2	KD	KD
Serinus serinus	European Serin	Not endemic	LC	Annex 2	KD	KD
Sitta europaea	Eurasian Nuthatch	Not endemic	LC	Annex 2	KD	KD
Sitta krueperi	Krüper's Nuthatch	Not endemic	NT	Annex 2	KD	KD
Sitta neumayer	Western Rock Nuthatch	Not endemic	LC	Annex 2	KD	KD
Spinus spinus	Eurasian Siskin	Not endemic	LC	Annex 2	KD	KD
Sterna hirundo	Common Tern	Not endemic	LC	Annex 2	KD	KD

Type Scientific First Name	English Name	endemism	IUCN (Spherical)	bern	MAKK	CITES
Streptopelia decaocto	Eurasian Collared Dove	Not endemic	LC	Annex 3	Annex 1	KD
Streptopelia senegalensis	Laughing Dove	Not endemic	LC	Annex 3	Annex 1	KD
Streptopelia turtur	European Turtle Dove	Not endemic	VU	Annex 3	Annex 2	KD
Sturnus vulgaris	Common Starling	Not endemic	LC	KD	Annex 1	KD
Sylvia atricapilla	Blackcap	Not endemic	LC	Annex 2	KD	KD
Tachybaptus ruficollis	Little Grebe	Not endemic	LC	Annex 2	KD	KD
Tadorna ferruginea	Ruddy Shelduck	Not endemic	LC	Annex 2	KD	KD
Troglodytes troglodytes	Wren	Not endemic	LC	Annex 2	KD	KD
Turdus iliacus	Redwing	Not endemic	NT	Annex 3	Annex 1	KD
Turdus merula	Common Blackbird	Not endemic	LC	Annex 3	Annex 2	KD
Turdus philomelos	Song Thrush	Not endemic	LC	Annex 3	Annex 2	KD
Turdus pilaris	Fieldfare	Not endemic	LC	Annex 3	Annex 1	KD
Turdus torquatus	Ring Ouzel	Not endemic	LC	Annex 2	KD	KD
Turdus viscivorus	Mistle Thrush	Not endemic	LC	Annex 3	Annex 1	KD
Upupa epops	Hoopoe	Not endemic	LC	Annex 2	KD	KD

1.1 Identification of Hydrobiological Biodiversity in the Impact Area of Beyköy Regulator and HEPP Facility

taxa (species and subspecies) belonging to 4 different algae classes have been identified in and around the project area . Especially the Bacillariophyta (diatom) group of algae has become the richest class in terms of diversity. 52 taxa belonging to this class, 12 belonging to Chlorophyta , 11 belonging to Cyanophyta and 1 taxon belonging to Euglenophyta were found.

Bacillariophyta (Diatom) in all of the sampling stations . The second dominant group in terms of species diversity of the region is Chlorophyta and Cyanophyta . These taxa have been reported from many localities in Turkey and have a wide distribution. Among the species belonging to Chlorophyta , Spirogyra sp. type comes to the fore. The most dominant species of the class Cyanophyta Oscillatoria sp. has happened. This to the genus connected species very wide One distribution profiles has. Dinophyta and Euglenophta classes were found in very few numbers in terms of species number and density .

In general, all identified freshwater algae species are cosmopolitan and there are no endemic, rare or endangered species specific to the region.

During the examinations carried out in and around the project area, a total of 13 taxa belonging to Rotifera and Copepoda, which are groups that constitute zooplanktonic organisms, were identified. The most dominant group of these is the Rotifera group. Rotifera While there are 12 taxa belonging to the phylum Brachionus calyciflorus and Keratella cochlearis species are dominant. One taxon has been identified from Copepoda , Cyclops sp. was found to be important in this group. The main factors affecting the distribution of zooplankton in freshwater systems can be classified as food, competition, mechanical relations with other living things, predation and parasitism, as well as the physical and chemical properties of the water. Changes in environmental factors depending on temperature affect the distribution of zooplanktonic organisms (Wetzel, 1983, Herzig , 1984). zooplankton Another important factor affecting community structure is predation . Many invertebrates and fish feed on Rotifera at least during a certain period of their lives (Herzig , 1980). In addition, current is a disadvantage in the distribution of zooplanktonic organisms.

A total of 17 benthic invertebrate species belonging to four major groups were identified based on sampling at 4 different stations in and around the project area . Of these, 2 belong to Gastropoda , 1 to Crusteceae , 1 to Crustaceae , and 13 to Insecta .

In aquatic ecosystems, benthic organisms have a significant proportion of indicator species. These creatures are also an indicator group of communities that are polluted or under stress, especially as a result of anthropogenic effects. According to the sampling results, no species that could be described as a pollution indicator was found. In addition, in high mountain waters and Crustacea, which is considered a clean water indicator. boundGammarus The taxon is known as a clean water indicator. In particular, this taxon is the dominant group in both stations and are biological indicators that indicate that the area has clean water quality.

8 fish species belonging to 3 different families have been identified in the project area and its surroundings . The Cyprinidae family is represented by the highest number of species (6 species).

Among the most important species of the study area *is Oncorynchus,* belonging to the Salmonidae family. *mykiss* (Rainbow Trout) species. *oncorynchus mykiss* It is a cultured species and not a natural fish of these waters. Individuals escaping from the surrounding fish farms have adapted to these environments. The distribution of these species in Turkey is in the river basins of Anatolia and they are not narrowly distributed endemic species.

Table 3 Project Area And Around belonging Alga Types

BACILLARIOPHYTA	*Melosira varians*	**CYANOPHYTA**
cyclotella menenghiana	*meridion circulare*	*Chroococcus limneticus*
cyclotella ocellata	*Navicula arenaria*	*gomphosphaeria aponina*
Melosira varians	*N. bacillum*	*lyngbya aerugineo - caerulea*
Achnanthes minutissima	*N. cryptocephala*	*nostoc commune*
amphora ovalis	*N. cryptocephala there is. intermedia*	*Oscillatoria amphibia*
A. ovalis there is. pediculus	*N. cryptocephala there is. Veneta*	*HE. curviceps*
anomoeoneis sphaerophora	*N. radiosa*	*HE. limnetica*
aulacoseria granulate	*N. rhynchocephala*	*HE. limosa*
caloneis permagna	*Nitzschia constricta*	*HE. subbrevis*
ceratoneis arcus	*Nitzschia hungarica*	*HE. tenuis*
C. arcus there is. amphioxys	*Nitzschia palea*	*spirulina major*
cocconeis placenta	*Nitzschia sigmoidae*	**EUGLENOPHYTA**
cyclotella meneghiniana	*Rhopalodia gibba*	*Euglena oxyuris*
Cymatopleura solea	*surirella angustate*	
Cymbella affinis	*S. linearis*	
Cymbella cistula	*S. ovalis*	
C. amphicephala	*S. robusta*	
C. cymbiformis	*S. robusta there is. splendida*	
C. prostrata	**CHLOROPHYTA**	
C. sinuata	*Chlamydomonas sp.*	
C. tumidula	*Scenedesmus sp.*	
diatom vulgare there is. brevis	*ulothrix variabilis*	
didymosphenia geminata	*oedogonium sp.*	
Epithemia Argus	*Closterium aciculare*	
Epithemia sorex	*Closterium littoral*	
Fragilaria construens	*C. lunula*	
F. crotonensis	*C. parvulum*	
Fragilaria dilatata	*cosmarium botrytis*	
Fragilaria ulna	*C. laeve*	
gyrosigma acuminatum	*C. vexatum*	
gomphonema constriction	*Spirogyra sp.*	
G. olivaceum		
hantzschia amphioxys		

Table 4 Project Area And Around belonging zooplanktonic Types

ROTIFERA
Ascomorpha reign
brachionus quadridentatus
brachionus calyciflorus
cephalodella gibba
Euchlanis dilatata
filinia longiseta
keratella cochlearis
keratella quadrata
Lecane luna
Mytilina ventralis

notholca acuminata
polyarthra dolichoptera

IN COPEPO
cyclops sp.

Table 5 Project Area And Around belonging benthic organisms

Branch: MOLLUSIAN
Class: GASTROPODA
Set: PROSOBRAHCHIATA
Family: Valvatidae
Valvata piscinalis Müller
Set: PULMONATA
Family: Ancylidae
Ancylus fluviatilis Müller
Branch: ANNELIDA
Class: CLITELLATA
Set: HIRUDINEA
Family: Erpobdellidae
Erpobdella octoculata L.
Branch: ARTHROPODA
Class: CRUSTACEA
Set: AMPHIPODA
Family: Gammaridae
gammarus pulex L.
Class: INSECTA
Set: EPHEMEROPTERA
Family: Baetidae
Baetis rhodani Pict .
Family: heptageniidae
heptagenia sp.
Family: Ephemerellidae
ephemerella ignita poda
Set: PLECOPTERA
Family: perlidae
perla marginate Sun .
Set: COLEOPTERA
Family: Noteridae
noterus clavicornis (Deg .)
Family: Elmidae
Elmis sp.
Set: TRICHOPTERA
Family: Rhyacophilidae
rhyacophila sp.
Family: Hydropsychidae
hydropsyche sp.
Set: DIPTERA
Family: Blephariceridae
liponeura sp.
Family: Limoniidae
Eriocera sp.
Family: Simuliidae
Simulium sp.
Family: Athericidae

Atherix ibis F.
Family: chironomidae
Chrinomus sp.

Table 6 Project in the field Detection made Fish Types And Protection Status

Family	Type And subspecies	Turkish First Name	endemism	BERN	IUCN	CITES	natural kind	exotic species
Salmonidae	*oncorhynchus mykiss*	Rainbow trout	-	-	WHAT	-	X	-
Cyprinidae	*alburnoides bipunctatus*	Dotted Pearl snapper	-	-	LC	-	X	-
	barbus escherichii	moustachioed Fish	-		VU	-	X	-
	Capoeta sieboldii	Fringed Syraz	-	-	WHAT	-	X	-
	cyprinus carpio	Carp	-	-	LC	-	X	-
	Squalius pursakensis	Freshwater mullet	-	-	LC	-	X	-
	chondrostoma angorense	Karaburun	-	-	LC	-	X	-
Siluridae	*Silurus glanis*	Broadcasting fish	-	-	LC	-	X	-

1.4 biodiversity Risk Evaluation

1.4.1 Flora

IFC PS-6 and Guidance in the facility area No plant taxon with CR and EN status that complies with Note 6 criteria was found. Therefore, there is no critical habitat supporting these taxa . Apart from the coppice tree communities whose cover has been broken by human influence, there are reeds, reeds and willows in non-seasonal, fast-flowing stream beds.

- **Invasive Species**

Alien invasive species, either accidentally or intentionally, move beyond their natural geographic range and become problematic. They often arise due to the globalization of the economy through the movement of people and goods, such as ship transportation, shipments of wood products, consignments carrying insects, or transportation of ornamental plants to new regions. The EU developed ***Regulation (EU) 1143/2014*** to actively deal with alien invasive species .

Alien invasive species (IAS) can cause serious ecological impacts on invaded environments. They may lack natural predators in their new environment, allowing them to increase their abundance and spread rapidly. They can carry diseases, compete with or prey on native species, alter food chains, and even alter ecosystems, for example by altering soil composition or creating habitats that encourage wildfires. These impacts can lead to local or global extinction of native species and ultimately ecological destruction.

IAS can also have significant socio -economic impacts. The European Union (EU) faces losses worth EUR 12 billion annually due to the effects of IAS on human health, infrastructure damage and agricultural damage.

There are more than 12,000 alien species in Europe, 15% of which are invasive. IAS, European threat It is the third most serious threat to the species below. According to a report published in 2015, 354 endangered species (229 animals, 124 plants and 1 fungus) are among all threatened species in Europe. It is clearly affected by IAS, accounting for 19% of the species under it . The newly adopted EU Biodiversity Strategy highlights the importance of tackling this threat by proposing to manage established alien invasive species and reduce the number of Red List species they threaten by 50% by 2030.

In 2013, the European Commission (EC) put forward a proposed law within the framework of an EU Directive on IAS, providing for prevention of their introduction, early warning/rapid response and effective and coordinated management. topics forward It lasted. IUCN, WHITE with made One soap opera service contract And In collaboration with the IUCN Invasive Species Expert Group (ITUG), it has been providing technical and scientific support to the implementation of the EU IAS Regulation since 2016.

Invasive flora species have been detected in the impact area of the project (*Ailanthus altissima* Table 7). The Biodiversity Action Plan must be followed.

Energy investment areas are areas shaped by human influence. Construction activities arising from the nature of the investment in these areas have been tried to be rehabilitated through landscape planning around the roads and buildings . The ability of some plant species used here to survive and spread in the area causes them to be called invasive species. Apart from rehabilitation studies, species carried by floods or faunistic sources may also have the same nature. For these reasons, in order to preserve the existence of the natural areas within the energy investment area, the individuals and diaspores (reproductive units) of these plants must be cleared from the area.

Timing: Controlling invasive plant species should be done before the plant goes to seed. If the plant is known for its above-ground parts before flowering, the removal is done in the spring; otherwise, it is removed immediately after flowering.

Table 7 Project in the field Found And Finding Likely Invader Species

acer negundo (Ash-leaved maple) Areas open to andropogenic influence	
agropyron repens (Separate herb) Field, open area	
ailanthus altissima (Kokarağaç) Areas open to andropogenic effects	
amaranthus retroflexus (Fox dry) Field, open area	

Boreava orientalis (Sariot) Field, roadside	
chenopodium album (While crying) Flood, flood bearings	
Cirsium arvense (Köygöçüren) Flood, flood bearings	
conyza canadensis (cypress) andropogenic to the effect open spaces	

conyza bonariensis (Coyote) andropogenic to the effect open spaces	
conyza albida (Maplewort) andropogenic to the effect open spaces	
Cuscuta campestris (Turkish) meadow-pasture habitats	

Lepidium draba (Diğnik) andropogenic to the effect open fields	
nasturtium officinale (Suteresi) Stream edge	
Reseda lutea (Love flower) Path edge, field	
rumex acetocella (Sorrel) Roadside, fields and barren places	

Senecio vernalis (Canary herb) Path edge And Areas shaped by human influence	
Sicyos angulatus (Itdolanbacı) Damp fields	
Solanum americanum (Push grape) This edge And moist shady places	
portulaca oleracea (Purslane) Field, open area	
phytolacca americana (Confectioner dye) Stream bearings and moist habitats	

paspalum distichum (This discrete) This communities inside on channels	
Robinia pseudoacacia (White flowered false acacia) Roadsides	
xanthium strumarium (Big Pıtrak) Flood, flood bearings	
xanthium spinosum (Yellow Pıtrak) Flood, flood bearings	

Viscum album (Lime herb) to the trees interference	

1.4.2 Fauna

IFC PS-6 and Guidance Considering the Note 6 criteria, the "critical species" evaluation and "critical habitat" evaluation were made in section 5, and there is no Critical species in terms of fauna (Amphibia, Reptile, Mammal) in the region, and accordingly, there is no critical habitat.

Tortoise (*Testudo graeca*): This species has been seen around the area. Its presence in the region has been assessed sparsely. Since it is not a water-dependent species, it has been evaluated that the facility does not have a negative impact on this species. However, it would be useful to raise awareness about the species and take some precautions to prevent harm to the species, especially in human-tortoise encounters. These issues are detailed in the Biodiversity Action Plan.

Lynx Risk assessment for *lynx)* : The habitat of the project area and its surroundings seems suitable for this species and it has a general distribution in the region. It is difficult to be seen by humans because it prefers to stay away from humans and is very well camouflaged. It seems unlikely that the animal will be negatively affected by a HEPP facility due to its lifestyle. Although it has moved away from the area to some extent due to human activity and noise only during the construction period, it is highly likely that it will continue to use the area during the current operation phase. However, it would be useful to raise awareness about the species and take some precautions to prevent harm to the species, especially in possible human-lynx encounters. These issues are detailed in the Biodiversity Action Plan.

Risk assessment for otter (*Lutra lutra)* : Its presence in the project area is highly likely. There is no direct threat to the species. The species will continue to exist as long as there is sufficient life water in the stream beds .

1.4.3 Ornithology

IFC PS-6 and Guidance Taking into account the Note 6 criteria, the "critical species" assessment and "critical habitat" assessment were made in chapter 4, and Critical There are species. This type Small Vulture (*Neophron percnopterus*) . Attention should be paid to the actions provided in the Biodiversity Action Plan for the species in question.

According to the field studies and literature compilation, there are many structures around the Beyköy HEPP facility and dam. floating bird Type And active migration movements detection has been made. Detection made migration Storks in groups (*Ciconia ciconia*) And Black stork (*Ciconia nigra*) like species is has been observed. It has been determined in past studies that storks collide with transmission lines (Garrido and Fernández-Cruz , 2003). In addition, the endangered soaring predators of the Royal Eagle (*Aquila) around the facility. heliaca*) and Little vulture (*Neophron percnopterus*) species have also been detected, and these species, like other soaring predators, are at risk of colliding with transmission lines. Making the necessary determinations on this issue and taking precautions, if necessary, according to the results. must be taken (see Biodiversity Action Plan). Apart from this, the facility does not have a direct negative impact on bird diversity and populations .

1.4.4 hydrobiology

There are no intensive fishing activities in the region. However, cage type fishing activities are carried out to a small extent.

Rivers are complex and dynamic ecosystems. By changing these areas, lotic species will be affected and reduced by the loss of breeding grounds along with significant environmental change. River species normally live and spawn in shallow places and look for such habitats after the formation of the dam lake. If they cannot find it, they face losing competition with other lentic species due to the difference in their ecological niches. After the formation of such areas in HEPP-like applications, areas where some species can live should also be protected. Aquatic species; It adapts to the living conditions in a particular river section and creates characteristic biocoenoses shaped by the change of abiotic factors along the stream (Vannote et al. 1980).

Algae, zooplankton and benthic organisms living in the stream environment can also create new communities within this biocenosis and create significant changes, especially in the food pyramid. More productive stagnant water environments can constitute important food areas for all aquatic creatures.

invasive algae, zooplankton , benthic organisms or fish species were found in Beyköy HEPP and surrounding areas. Social responsibility projects and biodiversity action plans are important at this point.

1.4.5 Environmental Risk Analysis

The project is not likely to adversely affect human health or the environment, directly or indirectly. Environmental Risk It is called. Estimating the magnitude of risk in all its activities and Deciding whether the risk can be tolerated is called **Risk Assessment** .

Environmental Risk Assessment, Appropriate methods are used to identify environmental hazards in the working environment, reveal risks and control risks through systematic methods. qualitative and/or It is a set of studies conducted using quantitative methods.

In order to determine the environmental impacts that are likely to occur in the periods determined within the scope of the environmental management and monitoring plan and to minimize the impacts of the project by collecting the relevant data and comparing the compliance of the studies carried out with the legislation ;

- of the business management,
- wastes,
- air emissions,
- noisy,
- wastewater ,

like effects will be monitored.

A Waste Management Plan must be prepared for the wastes generated and likely to be generated within the scope of the project, and it is necessary to continue to act in accordance with the issues specified in the waste plan and the applicable legislation at all stages of the project. Waste Management that should be implemented within the scope of the project is given in Table 8 .

Table 8 Implementation Required Waste Management

STAGE	SUBJECT		PRECAUTION
BUILDING AND BUSINESS PHASE	**Noisy And Vibration**		During the operation phase of the project, noise generation will arise from vehicles. However, still operating owner by activity any One negative of the effect absence for the purpose of All necessary security measures must be taken and any complaints or suggestions from nearby settlements must be taken into consideration and necessary action must be taken by the activity owner.
	Weather emissions	**Vehicle Welding**	The vehicles used in the project area were published in the Official Gazette dated 11.03.2017 and numbered 30004. into force entering "Exhaust gas emission Control Regulation with Gasoline And Diesel quality "Regulation" to the provisions to be complied with is required.
	Waste Management	**domestic Qualified Thick Wastes**	Project in the scope of formed domestic qualified thick wastes smell, insect And negative to the effects It must be collected in sealed containers.
		PACKAGING waste	domestic qualified thick of waste management for 02.04.2015 history And 29314 numbered Official Newspaper' It is necessary to comply with the provisions of the "Waste Management Regulation", which was published and entered into force . Back gain possible non- organic origin domestic qualified thick wastes whereas mouth It should be collected in closed domestic waste bins and delivered to the relevant Municipality. Recyclable wastes (glass, paper/cardboard, metal, etc.) must be collected separately from other wastes, deposited in containers, and recycled by companies licensed by the Ministry of Environment, Urbanization and Climate Change. Regarding the issue dated 26.06.2021 and 31523 numbered Official Newspaper' also by publishing into force entering PACKAGING of waste The provisions of the Control Regulation must be complied with. of waste is accumulated containers continually aspect closed by keeping rodent animal And Pest prevention must be ensured .
		domestic Qualified Waste water	Business in the phase formed wastewater in the scope of 31.12.2004 History And 25687 Numbered In the Official Gazette by publishing into force entering "This pollution Control "Regulation" provisions must be complied with. Business during This pollution Control Regulation, Drinking-Use juice The provisions of the Regulation on the Protection of Basins must be complied with. of the project all in stages 23.12.1960 date and 10688 numbered Official Newspaper' also published "Law on Groundwater No. 167" and "On the Protection of Groundwater Against Pollution and Deterioration" published in the Official Gazette No. 28257 dated 07.04.2012 Regulation" to the provisions respect to be is required.

STAGE	SUBJECT		PRECAUTION
		Waste Battery And Accumulators	process in the scope of formed waste battery And accumulators in the scope of, Waste Battery And In accordance with Article 13 of the Accumulator Control Regulation; By collecting waste batteries separately from household waste, businesses that distribute and sell battery products or by municipalities will be created collection to the points waste batteries delivery After becoming waste, the resulting cells, accumulators and/or accumulators used in transformers should not be kept on a sealed surface within the site for more than ninety days until they are delivered to the manufacturer. 31.08.2004 history And 25569 numbered Official in the newspaper by publishing into force entering "Waste Battery It is necessary to ensure that waste is disposed of in accordance with the provisions of the "Regulation on the Control of Batteries and Accumulators".
		Medical Wastes	For medical waste generated within the scope of the activity; waste at the source -most member will download system establishment of waste separate collection, moving And temporary storage with One accident instantly Preparing and complying with an in-unit industrial waste management plan that includes the measures to be taken. Collecting medical, hazardous and domestic wastes and packaging waste separately at the source without mixing with each other, Medical wastes with cutting-piercing waste while collecting technical features In the regulation using specified bags and containers, Separate collected medical And domestic qualified waste Only This work for allocation has been Vehicles with separate transported separately waste temporary to store for the purpose of temporary waste warehouse construction will be or It is required to have a container, Legislation to the provisions to be complied with is required.
		Waste Electronic Things	It is possible that electronic waste will be generated during the process. The electronic waste generated is temporary waste storage on the forehead by accumulating licensed disposal/return earnings to the company must be given. Compliance with the provisions of the Regulation on the Control of Waste Electrical and Electronic Equipment, which came into force after being published in the Official Gazette dated 22.02012 and numbered 28300.to be is required.
		Waste oils	Within the scope of waste oils generated at all stages of the project, the "Waste Oils Management Regulation", which came into force after being published in the Official Gazette dated 21.12.2019 and numbered 30985, and the "Waste Management Regulation", which came into force after being published in the Official Gazette dated 02.04.2015 and numbered 29314. "Regulation" to the provisions respect to be is required. Formed waste oils Temporary

STAGE	SUBJECT		PRECAUTION
			It is stored in the Waste Storage Area and collected by the Ministry of Environment, Urbanization and Climate Change. licence given by companies back gain and/or disposal ensuring is required
		Waste Vegetable Waste oils	of the project vegetable waste oil formation in case 06.06.2015 history And 29378 numbered Official It is necessary to comply with the relevant provisions of the "Regulation on the Control of Waste Vegetable Oils", which came into force after being published in the Gazette .
		of your life Completed Tires	Any One for this reason promise subject of waste welding in case your life expired tires, dated 211.2006 and numbered 26357 "Control of End-of-Life Tires" Regulation") to the provisions respect to be is required.
		Dangerous Wastes	In case of fluorescent lamps used in lighting, printing toners from printers used in the administrative building, contaminated waste and other hazardous wastes at any stage of the process, they will be stored in the Temporary Waste Storage Area in accordance with waste codes. Environment urbanism And Climate change ministry by licence given by companies back gain and/or disposal ensuring is required
		Oily Mud mud	of the process any One in the phase or equipment care from his work caused Oily sludges must be sent to licensed companies and disposed of.

The relevant applications within the scope of the Regulation on Amendments to the Zero Waste Regulation of the facility have been completed and it has a zero waste certificate. Waste Management Regulation of the Facility in the scope of prepared Industrial Waste Management plan is available is, It has been determined that it has been approved by the Provincial Directorate of Environment, Urbanization and Climate Change. It has been determined that the packaging waste generated in the facility is separated on site in accordance with its codes and is regularly stored in the Temporary Waste Storage Area. The stored waste is recycled through licensed companies.

It has been determined that waste scrap materials are stored on soil ground in some areas of the facility, and care should be taken to store scrap materials on concrete floors.

Domestic wastewater generated within the scope of the project It is collected in the septic tank and it has been determined that it is disposed of by using a sewer truck service.

However, it was observed that the project was outside the scope of the Environmental Permit and License Regulation. However, it has been determined that no application has been made under the Environmental Permit and License Regulation. Applications must be made urgently for the facility in question within the scope of the Environmental Permit and License Regulation.

1.5 biodiversity Action plan

Beykoy regulator And HEPP facility biodiversity Action plan							
Action Code	**Habitat Class**	**Action Subject**	**Action Zone**	**Action Rationale**	**Action/Application Details**	**Action Period**	**Action Duration**
BK1	All Habitats	Critical Conservation of Fauna Species	General Area	Endangered Fauna types His research particularly focused on the Lesser Vulture (*Neophron Percnopterus*) Species Project Area and Around It should be investigated	Population by Expert Biologists Level Monitoring	During Operation	2 Year Duration: March-November Between
BK2	Business	Fauna Conservation of Species	Project Area And surroundings	Tortoise (*Testudo* Facility Employees Should Be Provided Training About *Graeca) Species.* "Attention Tortoise" at Certain Points of the Project Area "It may come out." signs It must be placed.	Biologists who are experts on the subject Training Should Be Provided by	During Operation	April-May 2024 one Times
BK3	All Habitats	Fauna Conservation of Species	Project Area And surroundings	Otter (*Lutra Lutra*) Species in the Project Area and Surroundings It Should Be Researched And Training Should Be Provided.	Population by Expert Biologists Level Monitoring	During Operation	2024 Year Septemb er Bear 1 Time
BK4	Business	Fauna Conservation of Species	Project Area And surroundings	Lynx (*lynx lynx*) Type About Facility Employees Should Be Provided Training	subject professional biologists Training Should Be Provided by	During Operation	April-May 2024

BK5	Business	Fauna Conservation of Species	Project Area And surroundings	Pet Cats Should Never Be Keeped in the Facility. Although it is recommended not to have a pet dog, Even Especially Night Free They Should Not Be Allowed To Roam	Company By	During Operation	April-May 2024

Beykoy regulator And HEPP facility biodiversity Action plan							
Action Code	**Habitat Class**	**Action Subject**	**Action Zone**	**Action Rationale**	**Action/Application Details**	**Action Period**	**Action Duration**
BK6	Business	Fauna Conservation of Species	Project Area And surroundings	tortoises and other animals from being crushed by vehicles while crossing the roads, vehicle speeds should be limited to 30 km/h within the facility. With Limitation, Transition your priority Each Time to animals It must be given .	Company By	During Operation	Continually
BK7	Business	Man And All Fauna Species Conservation	Project Area And surroundings	The Water Transmission Channel of the Project is Largely in the Form of an Open Channel. Some parts of this canal are surrounded by fences, but it has been observed that some parts are not fenced . Animal to the Channel And Person Fencing the Entire Channel to Prevent Falling It is recommended.	Company By	During Operation	2022 November
BK8	All Habitats	Invader Blocking Species	Project Area And surroundings	Invasive Species Found in and Around the Project Area Should be Investigated Area And Surroundings by watching dismantling of your plan Must be prepared	Population by Expert Biologists Level Monitoring	During Operation	one Year Duration in July and August

Beykoy regulator And HEPP facility biodiversity Action plan							
Action Code	**Habitat Class**	**Action Subject**	**Action Zone**	**Action Rationale**	**Action/Application Details**	**Action Period**	**Action Duration**
BK9	Business	Prevention of Environmental Pollution	Project Area	Licensed in accordance with the Waste Codes for Hazardous Wastes Generated within the Business Companies Delivery to Recycling / Disposal Facilities by It should be done.	Company By	During Operation	6 on the moon one
BK10	Business	Prevention of Environmental Pollution	Project Area	Licensed in accordance with the Waste Codes for Non-Hazardous Wastes Generated within the Business Companies Delivery to Recycling / Disposal Facilities by It should be done.	Company By	During Operation	per year one
BK11	Business	Prevention of Environmental Pollution	Project Area	domestic wastewater Towing with a Sewage Truck	Company by	During Operation	septic tank 80% When You Reach Your Level
BK12	Business	Regulatory Compliance	Project Area	Obtaining Environmental Permit Exemption It is necessary.	Company by	During Operation	2022 December

PROJECT TEAM

Name- Surname /Title	In Report/Study Department He is Assigned to	Sign ature
Specialist Biologist Tariq BATUHAN	Project And Report Coordination Ecological Assessment	
Prof. Dr. Mustafa SÖZEN	Fauna Evaluation	
Prof. Dr. Tahir SHOOTER	hydrobiological Evaluation	
Dr. Lecturer . Member of Karim SOUTH	Flora And Vegetation Evaluation	
Kaan ÖZGENCİL	Ornithological Evaluation And GIS Studies	
Biologist Mehmet Ali YUKSEL	Ecological Studies And Land Coordination	
Experienced Bird Observer Ayhan BATUHAN	Bird observation	