



**REVIEW OF THE
ENVIRONMENTAL IMPACT ASSESSMENT
REPORT
SUBMITTED FOR
THE ILISU DAM AND HYDRO-ELECTRIC POWER
PROJECT**

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Cover photography: Pied kingfisher (*Ceryle rudis*) (Soner Bekir)

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1 SUMMARY

This report is a review of the Environmental Impact Assessment Report (EIAR) of the Ilisu Dam and Hydroelectric Power Plant Project (Ilisu Project) prepared by Doğa Derneği. The report indicates that:

1. The Ilisu project will have major environmental impacts resulting in irreversible conversion and degradation of critical natural habitats.
2. These impacts are not clearly documented in the EIAR and thus, mitigation measures and the Environmental Action Plan (EAP) of the project fall short of the relevant international requirements e.g. those given in World Bank Operational Policies, particularly, OP 4.01, Environmental Assessment and OP 4.04, Natural Habitats.

The Dicle River Valley represents the single remaining example of the riverine and canyon ecosystems in South-eastern Turkey after the depletion of similar ecosystems along the Fırat (Euphrates) River. The area's uniqueness and irreplaceability is largely reflected in rare, vulnerable, migratory and endangered bird species and other biodiversity confined to the river valley (Kılıç and Eken 2004; Welch 2004). Hence, Kılıç and Eken (2004) describe four Important Bird Areas (IBAs) (sites of international importance for conservation of birds) along the Dicle River in Turkey. In addition to IBAs, Welch (2004) describes five Priority Areas forming a single integral ecosystem along the Dicle Valley, which consist of natural sites of outstanding importance for birds, as well as for other biodiversity.



An example of natural riparian ecosystems that will be flooded by the Ilisu Project (Güçlükönak District).

Despite the fact that the project area comprises natural habitats and critical natural habitats, the EIAR itself clearly documents that it is not within the mandate of the Ilisu Engineering Group (IEG) to take into account the World Bank Operational Directive on Natural Habitats (OP 4.04) along with some other operational policies (page 1-11 of the EIAR). Thus, the current EIAR completely fails to comply with OP 4.04 being one of the main policy documents for the project due to the exceptionally high and clearly documented natural value of the impact zone.

Furthermore, the EIAR does not fully meet the requirements defined in the World Bank Operational Policy on Environmental Assessment (OP 4.01). Main aspects that fall short of these requirements include:

1. There are significant gaps in baseline information resulting in the underestimation or improper assessment of impacts. Thus, the mitigation measures proposed are not in a position to compensate the biodiversity loss resulting from the project.
2. The EIAR does not sufficiently offer other alternatives to the project.
3. The EAP has insufficient indication of (i) the level of capacity and commitment of the responsible stakeholders; and (ii) the actual organizational arrangements (coordination, role and responsibilities, including financial responsibilities, of the different parties involved in implementing the EAP), thus, it does not meet the requirements of the OP 4.01.
4. Public consultation and disclosure during and after the EIA process is not as comprehensive as required by the OP 4.01.

As clearly stated in Annex A of OP 4.04, flooding (e.g., by a reservoir) is considered as one of the causes of elimination or severe diminution of the integrity of a critical or other natural habitat. The proposed project will result in permanent loss of the natural riparian ecosystem and other associated habitats of a river course of over 170 km. Due to the extremely large magnitude of natural habitat conversion, ecologically viable populations of rare, vulnerable, migratory and endangered species will no longer exist in the impact zone of the project unless in-situ protection through full revision of the project is considered as an option.

Rare, vulnerable, migratory and endangered species threatened by the project are:

Bonelli's Eagle (*Hieraaetus fasciatus*)
Griffon Vulture (*Gyps fulvus*)
Egyptian Vulture (*Neophron percnopterus*)
Lesser Kestrel (*Falco naumanni*)
Collared Pratincole (*Glareola pratincola*)
Red-wattled Plover (*Vanellus indicus*)
Pied Kingfisher (*Ceryle rudis*)
Eurasian Roller (*Coracias garrulus*)
Little Swift (*Apus affinis*)
Striped Hyena (*Hyaena hyaena*)
Bat species
Euphrates Soft-shelled Turtle (*Rafetus euphraticus*)
Fish species



Key populations of these species will be adversely affected by the project and some are likely to permanently disappear due to the flooding of their nesting sites or due to changes in the water regime after the construction. Among these, Red-wattled Plover (*Vanellus indicus*) and Pied Kingfisher (*Ceryle rudis*) are of primary concern. Respectively, 100% and 20% of the entire European populations of these bird species will be negatively affected by the Ilisu Project.

2 INTRODUCTION

The Ilisu project has largely been debated because of its impact on the cultural heritage in the project area, while its environmental impacts have so far been greatly neglected. Because the project will affect four internationally recognized Important Bird Areas (IBAs) and significant populations of rare and threatened species, Doğa Derneği, BirdLife Turkey, has prepared this independent review of the EIAR of the project.

This document is divided in five main sections:

- 1- Requirements of the Environmental Impact Assessment (EIA) process and biodiversity of the project area (Sections 3 and 4)
- 2- Review of the content of the Environmental Impact Assessment Report (EIAR) (Sections 5 to 8)
- 3- Impacts of the project on natural habitats and biodiversity (Section 9)
- 4- Process of the development of the EIAR (public consultation and disclosure) (Section 10)
- 5- Conclusions (Section 11)

The English version of the EIAR on which this review is based was downloaded from the following website: www.ilisu-wasserkraftwerk.com.

3 REQUIREMENTS APPLICABLE TO THE ILISU PROJECT EIA PROCESS

International Finance Institutions might be involved in the Ilisu Dam and HEPP Project, including the Export Credit Agencies (ECAs) of Switzerland (ERG¹, Export Risk Guarantee), Germany (Euler Hermes) and Austria (OeKB², Oesterreichische Kontrollbank AG).

In its environmental and social guidelines, the Swiss ERG commits itself³ to comply with the Organisation for Economic Co-operation and Development (OECD) “Recommendation on Common Approaches on Environment and Officially Supported Export Credits, 2004”. This recommendation states that:

Quote

12.1 When undertaking environmental reviews, Members should benchmark projects against host country standards, against one or more relevant environmental standards and guidelines published by the World Bank Group, the European Bank for Reconstruction and Development, the Asian Development Bank, the African Development Bank and the Inter-American Development Bank and against the safeguard policies published by the World Bank Group. Members may also benchmark against any higher internationally recognized environmental standards, such as European Community standards.

12.2 Projects should, in all cases, comply with the standards of the host country and when the relevant international standards against which the project has been benchmarked are more stringent these standards would be applied.

12.3 If a Member finds it necessary to apply standards below the international standards against which the project has been benchmarked, it shall report and justify the standards applied on an annual ex- post basis in accordance with paragraph 19.

12.4 In the absence of a contrary decision by the ECG, the international environmental standards, guidelines and safeguard policies applied by the institutions referred to above are the ones applicable at the time of the adoption of the Recommendation.

Unquote

It is understood from the above that the potential involvement of the Swiss ERG triggers the application of World Bank Group policies⁴, including OP 4.01 (“Environmental Assessment”), OP 4.04 (“Natural Habitats”) and others. Application of OP 4.04 (“Natural Habitats”) is particularly relevant, as the project will involve significant conversion and degradation of critical natural habitats.

Furthermore, the more stringent European Commission legislation should also be taken into account (see 12.1. in the above-given OECD Recommendation) given that the project will cause irreversible loss in species’ populations and natural habitats of European Community (EC) importance (see Table 1 in Section 4). The main EC legislation that should be considered includes the Council Directive on the Conservation of Wild Birds (79/409/EEC)⁵ and Council Directive on the Conservation of Natural

¹www.swiss-erg.com

²www.oekb.at

³ERG guidelines for assessing environmental and social issues, available at:

<http://www.swiss-erg.com/downloads/merkblatt/e/leitlinienumwelt.pdf>

⁴<http://wbln0018.worldbank.org/institutional/manuals/opmanual.nsf/05TOCpages/The%20World%20Bank%20Operational%20Manual>

⁵http://europa.eu.int/comm/environment/nature/nature_conservation/eu_nature_legislation/birds_directive/index_en.htm

Habitats and of Wild Fauna and Flora (92/43/EEC)⁶. Particularly, possible involvement of two EU member states, namely Austria and Germany, in the Ilisu project triggers the requirement for consideration of these two directives. In fact, Germany is responsible to assist Turkey for harmonizing these directives with Turkish legislation and practices - as part of an EU funded twinning project.

In addition, the involvement of any of the private banks that have signed the Equator Principles⁷ in the Ilisu Project would also trigger the application of the above-mentioned World Bank Group operation directives.

As a result of the above-summarized requirements, the Ilisu Project is classified as a “Category A” project according to the classification presented in OP 4.01 as well as according to OECD’s and ERG’s categorization of projects.

⁶http://europa.eu.int/comm/environment/nature/nature_conservation/eu_nature_legislation/habitats_directive/index_en.htm

⁷<http://www.equator-principles.com/>

4 CRITICAL NATURAL HABITATS AND BIODIVERSITY IN THE DICLE VALLEY

The World Bank Operational Policy on Natural Habitats (OP 4.04) – Annex A gives the definitions of *natural habitats* and *critical natural habitats* as follow:

Quote

(a) *Natural habitats* are land and water areas where (i) the ecosystems' biological communities are formed largely by native plant and animal species, and (ii) human activity has not essentially modified the area's primary ecological functions.

All natural habitats have important biological, social, economic, and existence value. Important natural habitats may occur in tropical humid, dry, and cloud forests; temperate and boreal forests; mediterranean-type shrublands; natural arid and semi-arid lands; mangrove swamps, coastal marshes, and other wetlands; estuaries; seagrass beds; coral reefs; freshwater lakes and rivers; alpine and subalpine environments, including herbfields, grasslands, and paramos; and tropical and temperate grasslands.

(b) Critical natural habitats are:

- i) existing protected areas and areas officially proposed by governments as protected areas (e.g., reserves that meet the criteria of the World Conservation Union [IUCN] classifications), areas initially recognized as protected by traditional local communities (e.g., sacred groves), and sites that maintain conditions vital for the viability of these protected areas (as determined by the environmental assessment process); or
- ii) sites identified on supplementary lists prepared by the World Bank or an authoritative source determined by Regional Environment Division. Such sites may include areas recognized by traditional local communities (e.g., sacred groves); areas with known high suitability for biodiversity conservation; and sites that are critical for rare, vulnerable, migratory, or endangered species. Listings are based on systematic evaluations of such factors as species richness; the degree of endemism, rarity, and vulnerability of component species; representativeness; and integrity of ecosystem processes.

Unquote

Presence of irreplaceable *natural habitats* and *critical natural habitats* in the project's impact zone is clearly described in two main references: The Southeastern Anatolia Project (GAP) Biodiversity Research Project (2001-2003) Final Report prepared by DHKD (Turkish Society for the Protection of Nature) on behalf of the GAP Authority (Welch 2004) and the Important Bird Areas inventory of Turkey published by Doğa Derneği - BirdLife in Turkey (Kılıç and Eken 2004).

Kılıç and Eken (2004) describe four Important Bird Areas (IBAs) (sites of international importance for conservation of birds) along the Dicle River in Turkey [Bismil Plain (TR177), Dicle Valley (TR178), Küpeli Mountain (TR179) and the Silopi - Cizre Floodplain (TR180) – Figure 1]. Although these areas are not currently declared as protected areas, Important Bird Areas (IBAs) are widely known to form the basis of Special Protected Areas (SPAs) to be declared under the Council Directive on the Conservation of Wild Birds (79/409/EEC). The European Court of Justice has cited the first European IBA inventory published in 1989 as an example of the basis for designation of a network of Special Protection Areas (SPAs) (Heath and Evans 2000).

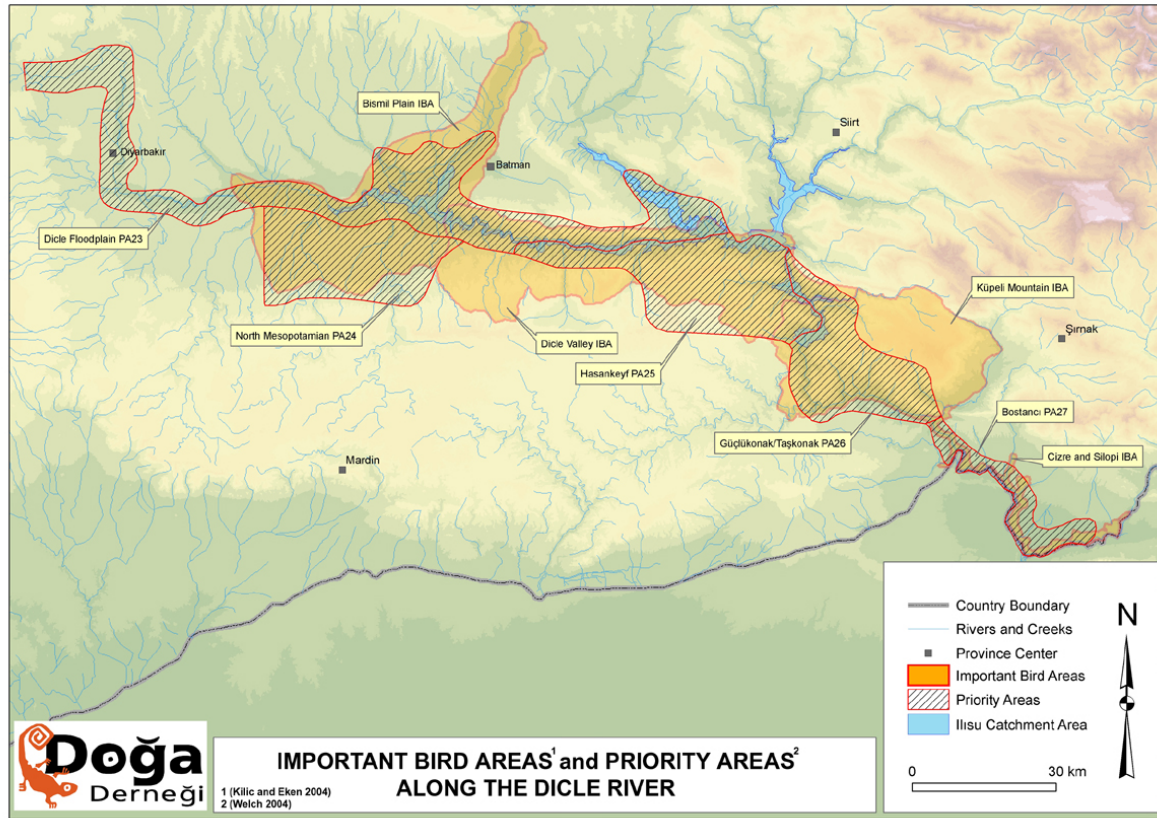


Figure 1: Important Bird Areas and Priority Areas along the Dicle River.

In addition to the information on IBAs, Welch (2004) defines the Priority Areas along the Dicle Valley which consist of natural sites of outstanding importance for birds, as well as for other biodiversity:

Quote Welch (2004)

Priority Areas 23-27 all lie along the Tigris River between the Devegeçidi river and the international frontier with Syria and Iraq. This is, as yet, an unaltered stretch of river and, despite dams further down- and upstream, it still has a full complement of riverine habitats and, all importantly, variable water levels and flows according to season. All this is threatened by the dams or other plans for management of river flows at Ilisu and Cizre.

Unquote

Welch (2004) describes five Priority Areas [Dicle Floodplain (PA 23), North Mesopotamian Steppes (PA 24), Hasankeyf (25), Güçlükönak – Taşkonak (PA 26), Bostancı (PA 27) - Figure 1] forming a single integral ecosystem:

Quote Welch (2004)

This stretch of river has been divided into five Priority Areas of different character and with different conservation priorities, but all function together as a whole and could thus justifiably be collected into one protected area for strategic conservation and river basin management.

Unquote

Following the depletion of the riverine and canyon ecosystems along the Firat (Euphrates) River, as a result of large dams over the last 20 years, the representation importance of the Dicle River for biodiversity has further increased. The Dicle River Valley represents the single remaining example of the riverine and canyon ecosystems in South-eastern Turkey. The area's uniqueness and irreplaceability are largely reflected in rare, vulnerable, migratory and endangered bird species and

other biodiversity confined to the river valley (Kılıç and Eken 2004; Welch 2004). These species are summarized in Table 1 below.

Key species	Key notes on population size and location	Global redlist category (1)	European Status (for birds only) (2)	EU Bird and Habitat Directives (3,4)
BIRDS				
Bonnelli's Eagle (<i>Hieraetus fasciatus</i>)	The species is known to breed in Hasankeyf and Güçlükönak (Welch 2004). The nest in Hasankeyf is at an altitude of 40-43 meters (Kılıç et al. 2003), while the pair near Güçlükönak breeds at a lower altitude ca. 30 meters from the river (M. Bozdoğan, pers. com).		SPEC 3	Annex 1
Griffon Vulture (<i>Gyps fulvus</i>)	The only known breeding colony of the species (25-30 pairs) is at the Dicle Valley near Güçlükönak. The Griffon Vulture colony and the Bonelli's Eagle nest are located at the same cliffs at an altitude of ca. 30 meters from the river (Kılıç and Eken 2004; Welch 2004).			Annex 1
Egyptian Vulture (<i>Neophron percnopterus</i>)	The species is known to breed in the cliffs along the valley in Dicle Floodplain (PA23); Hasankeyf (PA25); Güçlükönak/Taşkonak (PA26) (Welch 2004).		SPEC 3	Annex 1
Lesser Kestrel (<i>Falco naumanni</i>)	The species is known to breed in the Dicle Floodplain (PA23); North Mesopotamian Steppe (PA24); Hasankeyf (PA25); Güçlükönak/Taşkonak (PA26); Bostancı (PA27) (Welch 2004). 30-35 pairs nest in the canyons of Hasankeyf (M. Biricik, Dicle University, pers. com).	VU:A2b,c,e; A3b,c,e	SPEC 1	Annex 1
See-see Partridge (<i>Ammoperdix griseogularis</i>)	In Europe, the species breeds only in Turkey (except few pairs in Azerbaijan). Breeds in rocky slopes of the river valley. Distribution is scattered throughout the canyons and dry wadis of the river basin (Welch 2004).		SPEC 3	
Great Bustard (<i>Otis tarda</i>)	The Great Bustard population of 30-35 individuals is confined to the Bismil Plain IBA (Kilic and Eken 2004).	VU:A3c	SPEC 1	Annex 1
Collared Pratincole (<i>Glarola pratincola</i>)	The species' breeding population along the river is confined to the Bostancı area, in the Silopi - Dicle Floodplains IBA where its population is estimated at 100-200 pairs (Kılıç and Eken 2004).		SPEC 3	Annex 1
Red-wattled Plover (<i>Hoplopterus indicus</i>)	In Europe, the species breeds only in Turkey. Dicle River Valley is the sole breeding area of the species in Turkey and in Europe where 40 to 80 pairs are estimated to breed (BirdLife International 2004). The species is known to breed along the main river course in suitable riparian habitats and floodplains (Welch 2004).		SPEC 3	Annex 1 (candidate)
Pied Kingfisher (<i>Ceryle rudis</i>)	In Europe, the species breeds only in Turkey (except a single pair in Southern Europe). The riparian zone (sand banks) of the Dicle River is the last main breeding area of the species in Turkey and in Europe. The species is known to decrease in Turkey at a rate of more than 80% over the past 15 years (BirdLife International 2004). The Pied Kingfisher population along the Fırat (Euphrates) River is largely depleted due to large dam constructions and the respective loss of riparian habitats. Several breeding pairs are known from various localities of the Dicle River. The population within IBAs in the region is estimated at 16-26 pairs (Kilic and Eken 2004) while the entire breeding population is likely to be larger than this (Welch 2004).		SPEC 3	Annex 1 (candidate)
Eurasian Roller (<i>Coracias garrulus</i>)	The main breeding location for the species is the Hasankeyf area. The species is recently classified as globally Near Threatened (www.birdlife.org).	NT	SPEC 2	Annex 1
Little Swift (<i>Apus affinis</i>)	In Europe, the species breeds only in Turkey (except a single pair in Spain). The species' breeding population is confined to the cliffs of the main river course. Little Swifts nest in cliffs and caves in the canyons of the Dicle River (Welch 2004).		SPEC 3	Annex 1 (candidate)
Cinereous Bunting (<i>Emberiza cineracea</i>)	Breeds in rocky slopes of the river basin. The population within IBAs is estimated at 80-140 pairs (Kilic and Eken 2004) being one of the largest known populations in Europe.	NT	SPEC 1	Annex 1
MAMMALS				
Wild Goat (<i>Capra aegagrus</i>)	Welch (2004) reports its presence in the steep canyons and rocky habitats of Dicle Floodplain (PA23); Hasankeyf (PA25); Güçlükönak/Taşkonak (PA26); Bostancı (PA27).	VU A2cde		Annex 2
Striped Hyena (<i>Hyaena hyaena</i>)	Welch (2004) reports its presence open and rocky areas of North Mesopotamian Steppe (PA24); Hasankeyf (PA25); Güçlükönak/Taşkonak (PA26); Bostancı (PA27). The surroundings of Derik-Atalar and Dargeçit as well as the Hasankeyf area are of particular importance for the species (Welch 2004). The species is known to use cavities and caves in the lower parts of the slopes.			Annex 2 (candidate)
European Lynx (<i>Lynx lynx</i>)	Welch (2004) reports its presence in Güçlükönak/Taşkonak area.			Annex 2
REPTILES				
Euphrates Soft-shelled Turtle (<i>Rafetus euphraticus</i>)	This species occurs only in the Euphrates and Tigris rivers in the world, starting from south-eastern Turkey (Baran and Atatur 1998). This species is almost exclusively riverine, inhabiting preferably permanent and temporary tributaries and oxbow lakes as well as slow flowing sections of the main river channel (Gramentz 1991; Taskavak and Atatur 1998). Nests are placed in sandy riverbanks close to the waterline. The species is known to occur in Dicle Floodplain and Bostancı areas, in the Tigris river and its tributaries (Welch 2004).	EN A1ac+2c		Annex 2 (candidate)
Sources: (1) www.redlist.org; (2) BirdLife International (2004); (3) Annex 1 of EC Birds Directive and Annex 2 of EC Habitat Directive; (4) Candidate species of Turkey for Annex 1 (EC Birds Directive) and Annex 2 (EC Habitat Directive) according to preliminary results of the EU Twinning Project between Germany and Turkey on the transposition of these two directives.				

Table 1: Rare, vulnerable, migratory, endangered bird species and other biodiversity confined to Dicle River Valley.

5 GENERAL COMMENTS ON THE EIAR

The EIAR indicates in Section 1.3 (EIA Process) that “Among the World Bank guidelines, 3 emerge as particularly important to be complied with, considering the main issues raised by Ilisu, namely OP 4.01 (Environmental Assessment), OP 4.12 (Involuntary Resettlement) and OP 4.11 (Cultural Property), along with their annexes.” However, despite the fact that the project area comprises critical natural habitats (see Section 3 of this review) the EIAR itself clearly documents that it is not the within the mandate of the Ilisu Engineering Group (IEG) to take into account the World Bank Operational Directive on Natural Habitats (OP 4.04) along with some other operational policies (page 1-11 of the EIAR).

Furthermore, the EIAR makes only very brief reference to the World Bank Environmental Sourcebook (1999) (in section 1.3.5) given the relevance of this publication for preparing of an EIAR intended to comply with World Bank standards. In particular, chapters 8 and 10 of this sourcebook provide advice on “Dams and reservoirs” and “Hydroelectric projects”. The advice on ecological issues in chapter 2 of the World Bank Sourcebook, the Biodiversity and Environmental Assessment Sourcebook Update No. 20 (October 1997) and the Biodiversity and Environmental Assessment Toolkit (March 2000) are also not mentioned which is surprising given their relevance.

There seems to be some confusion in the EIAR as to the relationship between Turkish Environmental Assessment Regulation⁸ and World Bank standards (in section 1.3.1) where it is stated “*As requested by the [OECD] Recommendation, this EIAR should finally comply with the EIA guidelines of the host country, Turkey, even when those of the World Bank appear as more stringent*”. In fact, this is a misrepresentation of paragraph 12.2 of the Recommendation. Following this recommendation, the World Bank standards should have been applied where these were more stringent than the Turkish ones, not vice versa.

As the OECD Recommendation⁹ (in Annex II) states; “*An EIA’s scope and level of detail should be commensurate with the project’s potential impacts*”. From this it follows that as the Ilisu Dam and HEPP is a large and relatively complicated project, the EIAR should have a relatively broad scope and present a high level of detail. However, in many respects (discussed further below) the EIAR appears to be lacking in detail i.e. the level of detail required to inform a decision on a project of this nature.

The EIAR appears to try to justify this approach stating that “Many reviewers over the years, including decision-makers, stakeholders and professionals have complained that too many EIA reports over-emphasize the treatment of all potential impacts at the expense of a more in-depth assessment of the most significant issues” (page 1-2). While we would understand the approach of focusing an EIAR on key issues, this focusing should concentrate on all significant issues not just “the most significant issues”. Inevitably, the EIA process itself has to undertake sufficient assessment to determine whether an impact is significant, and to identify the most severe impacts; and so it is vital that the scope of the EIA is not be overly restricted at an early stage. In relation to this, the EIAR does not fully explain the prioritization process by which “The most important environmental issues of the Project” (namely, reservoir water quality, archeology and cultural heritage, and resettlement) were identified, or the stage at which these were identified as the key issues.

⁸ Turkish EIA Regulation, available in Turkish at: <http://www.cedgm.gov.tr/cedyonetmeligi.htm>

⁹ [http://webdomino1.oecd.org/olis/2005doc.nsf/Linkto/td-ecg\(2005\)3](http://webdomino1.oecd.org/olis/2005doc.nsf/Linkto/td-ecg(2005)3)

6 ENVIRONMENTAL ACTION PLAN

6.1 REQUIREMENTS

Annex A of OP 4.01 defines an Environmental Action Plan as follows:

Quote

3. *Environmental action plan: (EAP)* An instrument that details (a) the measures to be taken during the implementation and operation of a project to eliminate or offset adverse environmental impacts, or to reduce them to acceptable levels; and (b) the actions needed to implement these measures. The EAP is an integral part of Category A EAs (irrespective of other instruments used). EAs for Category B projects may also result in an EAP.

Unquote

Further, Annex C of OP 4.01 details the content of an Environmental Action Plan. It should include, amongst others (excerpts from OP 4.01, Annex C):

- the description with technical details of each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;
- an assessment of the existence, role, and capability of environmental units on site, and if necessary, recommendations about the establishment or expansion of such units, and the training of staff, to allow implementation of EA recommendations;
- a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions;
- an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and the capital and recurrent cost estimates and sources of funds for implementing the EMP.

Furthermore, projects with an impact on areas of high natural value should comply with the following recommendations of OP 4.04:

Quote

6. In deciding whether to support a project with potential adverse impacts on a natural habitat, the Bank takes into account the borrower's ability to implement the appropriate conservation and mitigation measures. If there are potential institutional capacity problems, the project includes components that develop the capacity of national and local institutions for effective environmental planning and management. The mitigation measures specified for the project may be used to enhance the practical field capacity of national and local institutions.

7. In projects with natural habitat components, project preparation, appraisal, and supervision arrangements include appropriate environmental expertise to ensure adequate design and implementation of mitigation measures.

Unquote

6.2 COMPLIANCE

The following table compares the requirements of OP 4.01 for the Environmental Action Plan and OP 4.04 with the contents of the actual Ilisu EIAR report:

OP 4.01 Requirement	Ilisu EIAR Report	Compliance
Description with technical details of each mitigation measure	Present in the report (tables in sections 9.2, to 9.7) but not at the level of detail required for a project of this magnitude	No
Assessment of existing capabilities and capacity building recommendations	Not present in the document	No
Specific description of monitoring measures with technical details	Present in the report (Chapter 8), but not at the level of detail required for a project of this magnitude (for example, frequencies of monitoring are not given)	No
Implementation schedule, and capital and recurrent cost estimates and sources of funds for implementing the EMP	Rough costing estimates are presented for each of the identified measures, but sources of funding are not always identified. No implementation schedule is provided.	No
OP 4.04 Requirement	Ilisu EIAR Report	Compliance
Components that develop the capacity of national and local institutions for effective environmental planning and management	While some organizations are mentioned the capacity of these are not discussed in sufficient detail.	No
Include appropriate environmental expertise to ensure adequate design and implementation of mitigation measures	While some organizations are mentioned the capacity of these are not discussed in sufficient detail.	No

Table 2: Comparison of OP 4.01 and OP 4.04 with the contents of the actual Ilisu EIAR.

6.3 INTEGRATION OF EAP WITH PROJECT

A number of institutions (as a minimum: the Consortium's sub-contractors, the General Directorate of State Hydraulic Works - DSI, the GAP Administration, some of the regional and local administrations in the Project area) plan to intervene in the implementation of the EAP and to fund some of the measures. There is, however, no sufficient indication of:

- The level of capacity and commitment of these parties;
- The actual organizational arrangements (coordination, role and responsibilities, including financial responsibilities, of the different parties involved in implementing the EAP).

7 DETAILED COMMENTS ON SPECIFIC SECTIONS OF THE EIAR

7.1 EXECUTIVE SUMMARY

Executive Summary: concisely discusses significant findings and recommended actions.¹⁰

The Executive Summary (ES) does not provide a very clear summary of the Ilisu Dam and HEPP project as the section headed “The GAP and the Ilisu Project” (page EXE-2) concentrates on outlining the GAP, rather than the particular project e.g. the dam, the proposed hydropower plant, and associated infrastructure such as access roads, power lines and waste water treatment plants (needed to ensure that the reservoir will not be seriously polluted). In the absence of such a clear description, it is very difficult to assess the information on proposed impacts provided later in the ES.

The “Overview of the Project area” section (starting on page EXE-2) is confusing in that this heading suggests that this section will provide a summary of the baseline conditions, whereas in fact some of the following sub-sections (e.g. the one on Wildlife) actually include both information about baseline conditions and statements about likely impacts. Therefore, this means that there is some overlap/confusion between these sub-sections and the ones in the following section “Impact assessment”. Further the intended relationship between the “Impact assessment” section and “The most important environmental issues of the Project” is not entirely clear. As a result, the ES does not provide a clear and concise summary of the significant findings.

In places, the (ES) uses technical language which will not be readily understandable to non-experts, who will therefore not be in a position to comment on the EIAR findings. For example, the geology sentence on page EXE-3 states “Most of the marginal folds consist of monoclinial anticlines and synclines.”

7.2 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

Policy, legal and administrative framework: discusses the policy, legal, and administrative framework within which the EIA is carried out.

The EIAR discusses the GAP Project as the key context for the project (section 2.1). However, this does not mention any environmental assessment of either the GAP Project as a whole (e.g. a form of regional environmental assessment) or of the water resource elements of the GAP Project for which DSI is responsible (e.g. a form of sectoral environmental assessment). Without some broader assessment of this kind (which is routinely required by funding agencies such as the World Bank when providing support to a sector) it is very difficult to adequately assess the cumulative impacts of the project in combination with related projects. Indeed, the assessment of cumulative effects in the EIAR is particularly weak.

¹⁰ For each section discussed, the relevant text from Annex II of the OECD’s Recommendation is included in a textbox for comparison.

7.3 PROJECT DESCRIPTION

Project description: describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g. dedicated pipelines, access roads, power plants, water supply, housing, and raw material and product storage facilities). Indicates the need for any resettlement or social development plan. Normally includes a map showing the project site and the project's area of influence.

The Project description in sections 2.4 and 2.5 concentrates on the construction of the dam and the operation of the HEPP. Insufficient information is provided about associated infrastructure such as access roads, power lines and wastewater treatment plants, plus relocation of existing infrastructure. As this information is needed to enable assessment of the impacts of this associated infrastructure, in its absence, the EIAR cannot provide an accurate assessment of the overall impacts of the Project and related investments – as recommended by the OECD Recommendation. Indeed, the section of Chapter 8 of the World Bank Sourcebook which discusses dams and reservoirs stresses the need to consider indirect effects such as those from access roads, construction camps and power transmission lines, noting that on occasion these can be worse than direct effects.

7.4 ALTERNATIVES

Analysis of alternatives: systematically compares feasible alternatives to the proposed project site, technology, design and operation-including the “without project” situation- in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

As the EIAR notes (page FOR-1) the “Final Design documents” for the Project were prepared in the early 1980s; and that the Project is exempt from EIA because it was planned before 1993. According to the Turkish EIA Regulation, projects adopted before 1993 do not require an EIA procedure. Therefore, any alternatives mentioned in the present EIAR will not actually affect the approved Final Design (page FOR-2) of the Project.

In this context, the scope for the EIA process to consider (and the EIAR to report on) alternatives is severely limited and as a result, although the EIAR attempts to discuss alternatives, it falls very short of above given standards.

Sections 2.2.6/2.2.7 of the EIAR provide some information on alternatives to the Project e.g. possible alternative sites, different dam heights, alternative development design along the section of the Bismil-Ilisu section of the river in section 2.2.6 and alternatives to hydropower (fossil fuels, solar, wind, nuclear energy, improvement of the transmission network) in section 2.2.7. However, the assessment of these alternatives falls short of the OECD's Recommendation that the environmental impacts of each alternative be compared. For example, the initial paragraphs of section 2.2.6 acknowledge that environmental factors were not considered when the comparison of site alternatives for a potential dam was undertaken, but that this decision was based on technical and economic considerations.

Further, the EIAR does not even fully consider the likely impacts of the “without project” option in a way that can be readily compared with the potential impacts of the Project.

7.5 BASELINE DATA

Baseline data: assesses the dimensions of the study area and describes relevant physical, biological, and socio-economic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigatory measures; the section indicates accuracy, reliability and sources of the data.

The EIAR provides very little information about trends in the current baseline situation e.g. changes which are already taking place and which may have the result that a particular receptor will be placed under further pressure by impacts from the Project. For example, if a population of a particular species is already showing a decline, then this needs to be reported in the baseline data as this negative trend, coupled with impacts from the Project, could result in the species disappearing from the area – a serious impact and a possibility which would not be immediately obvious if the impacts of the Project were considered in isolation.

For certain receptors, (e.g. biodiversity) the level of baseline data is not as detailed as would be expected in order to enable informed assessments of the likely significant of impacts – see comments in relation to birds/biodiversity below.

7.6 ENVIRONMENTAL IMPACTS

Environmental Impacts: predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental enhancement. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.

The discussion of impacts is in many places relatively general and reasons/supporting evidence for statements made are not provided. For example – see comments on potential biodiversity impacts below, similarly for potential positive economic spin-offs (section 4.3.6).

As highlighted above, the treatment of cumulative effects in the EIAR (section 4.4) is very general and does not adequately assess the impacts of the Project in cumulation with other past, present and future projects e.g. the impacts of the other hydroelectric projects which are only mentioned very briefly in paragraph 3 of section 4.4.1.

The separation between chapter 4 (impacts), chapter 6 (mitigation) and chapter 7 (residual impacts) make it difficult to follow the reasoning for the assessments of impacts on specific receptors in Chapter 7 – in particular the reasoning behind the aggregated values of impacts on specific receptors. In this regard it would have been helpful to include a summary of the overall impacts prior to mitigation (as well as the residual impacts following mitigation) so it is clear the extent to which it has been possible to mitigate for potential impacts and also the “worse case” scenario should the mitigation not be successful. Such a summary could have been provided in chapter 4 or incorporated into Chapter 7. Chapter 6 also lacks information about the likely success/effectiveness of proposed mitigation measures.

8 REVIEW OF INFORMATION ON BIODIVERSITY AND BIRDS

8.1 GENERAL OVERVIEW

For a project with potentially high impacts on an area known to be exceptionally important for natural habitats and critical natural habitats, the application of OP 4.04 (“Natural Habitats”) is particularly important. For instance, the Baku-Tbilisi-Ceyhan (BTC) pipeline project provides a clear framework for the implementation of OP 4.04 (BTC 2003)¹¹. The current EIAR completely fails to comply with this operational policy due to the EIAR itself clearly documents that it is not within the mandate of the IEG to take into account the OP 4.04.

OP 4.04 recommends the following:

Quote

5. Wherever feasible, Bank-financed projects are sited on lands already converted (excluding any lands that in the Bank's opinion were converted in anticipation of the project). The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs. If the environmental assessment indicates that a project would significantly convert or degrade natural habitats, the project includes mitigation measures acceptable to the Bank. Such mitigation measures include, as appropriate, minimizing habitat loss (e.g., strategic habitat retention and post-development restoration) and establishing and maintaining an ecologically similar protected area. The Bank accepts other forms of mitigation measures only when they are technically justified.”

Unquote

Executive summary

The sections of the executive summary on biodiversity give the impression that there will be very few negative effects from the Project and that there is even potential for significant positive impacts such as attraction of wintering birds and establishment of Protected Areas. The summaries of the likely impacts are somewhat misleading, and they do not comply with OP 4.04, which essentially requires the mitigation measures to include, as appropriate, minimizing habitat loss (e.g., strategic habitat retention and post-development restoration) and establishing and maintaining an ecologically similar protected area. For a project of this type in an area with significant biodiversity value, the EIAR should have addressed all biodiversity related issues in more detail to comply with international standards.

“Wildlife” section on page EXE-4

This states that “Although there are endemic and endangered species, none is apparently threatened by the Project” without providing any indication why this is the case. In the absence of technical justifications, this statement does not comply with the paragraph 5 of OP 4.04.

The following paragraph in the same section states that “The Tigris floodplain between Bismil and the Batman confluence supports one of the highest diversity of birds in the GAP region”, but then does not comment on whether/the extent to which that these may be affected by the Project. Similarly, the final paragraph of this section notes that the critically endangered Euphrates soft-shelled turtle has been found in the area which will be affected by the Project, but does not provide any summary of potential impacts on the species and how significant these may be.

11 <http://www.caspianddevelopmentandexport.com/Files/BTC/English/SLIPs/Part%20A/Safeguard%20Policy%20Requirements/Content/Safeguard%20Policy%20Requirements.pdf>

“Wildlife habitat” section on page EXE-11/12

There are overlaps between this section and the section discussed immediately above, which are confusing. The second paragraph makes the assertion that “Displaced terrestrial species of birds and mammals should find sufficient replacement habitats around the reservoir or along the remaining tributaries”. Without some explanation, this very general statement is fairly meaningless, because the chances of birds/mammals finding sufficient replacement habitats will vary depending the particular species/habitat in question.

The final paragraph of this section refers to the lack of protected areas in the catchment area. In fact, as the EIAR reports in a subsequent section, there are a number of Important Bird Areas (IBAs) in the area. IBAs are sites of international importance for the conservation of birds identified based on solid criteria and they are the basis for identification of Special Protection Areas under the EU Birds Directive. These correspond to the definition of critical natural habitats in Annex A of OP 4.04 i.e. “1b (ii) ... areas with known high suitability for biodiversity conservation; and sites that are critical for rare, vulnerable, migratory or endangered species”. Therefore, the EIAR should have given particular emphasis to IBAs and their trigger species to comply with OP 4.04. This is one of the most significant examples of lack of sufficient details in the EIAR.

Baseline data

As noted above, the level of baseline data is not as detailed as would be expected in order to enable informed assessments of the likely impacts. For example, maps showing the location of key habitats/bird species/the IBAs and information about the population levels and trends for key species (e.g. the bird species for the IBAs) were identified are not included.

Environmental impacts

The discussion of many of the biodiversity impacts is general and facts and sources for statements made are not provided. Specific types of impacts such as habitat loss, changes in habitat quality, disturbance are not discussed nor are the impacts on particular species placed in the context of local, regional, national species populations. This level of detail would be particularly relevant for the bird species for which the IBAs have been identified given that by this identification these populations are acknowledged to be of European/international importance.

Chapter 5 discusses further studies required. While such studies are welcomed if they can provide additional information which can influence detailed implementation of the Project; they are not an acceptable alternative to collecting the information needed to compile an adequate EIAR in advance of the decision on whether to provide funding support for a project. If there are still key issues on which data is needed, then the data should be collected and added to the EIAR or a precautionary approach should be adopted.

Although the CV for the lead biologist is provided in the EIAR, it is not clear who else contributed to the bird/biodiversity components of the EIAR. For example, who has provided the data, identified potential impacts, suggested proposed mitigation and made the overall assessments of the significance of residual impacts? Given the high level of expert knowledge needed to undertake these tasks and the sensitive nature of this project, it would be helpful to have information about the relevant people/organizations.

8.2 GAPS IN INFORMATION AND INCONSISTENCIES BETWEEN SECTIONS

The assessment of impacts, mitigation and summaries of overall impacts are separated out into various chapters (4, 6 and 7), thus, it is difficult to follow the links between the impacts identified and the proposed mitigation and the overall impact summaries in chapter 7. Further, as the reasoning for the aggregate impact values set out in Table 7-1 is not provided, it is very difficult to understand how

these values have been allocated from the individual impacts discussed in chapter 4. The extent to which proposed mitigation measures would avoid/reduce/compensate for predicted impacts is also not clear.

Furthermore, no information is given on other freshwater taxons other than fish species – e.g. molluscs, crustaceans. Typically, large dam projects have large negative impacts on riverine molluscs and crustaceans. Key gaps in baseline information and inconsistencies between various sections for plant, reptile, bird and mammal species are defined below:

SECTION 3 of the EIAR - Description of the Existing Environment:

Plants

Insufficient locality information is given on threatened plant species. Among these, provision of extremely detailed distribution information is essential for *Trifolium batmanicum* (EN) of which the world distribution is confined to the surroundings of the catchment area of the proposed dam. The project may result in the loss of a large proportion of the global population of this plant species.

Reptiles

Habitat requirements of many reptile species that are nationally threatened are not provided, nor is population information given for the globally threatened Euphrates soft-shelled turtle (*Rafetus euphraticus*).

Birds

No detailed information is given on the population size and breeding grounds (i.e. distribution pattern) for those species that trigger the international Important Bird Area (IBA) criteria and other key species.

Mammals

Several bat species are listed in the EIAR, nevertheless no data has been collected regarding the globally threatened bat species and others which are protected under the Bern Convention and EU laws. Bats are typically confined to the cave ecosystem which is extremely rich and diverse along the Dicle River. The river valley is likely to host several caves that are of irreplaceable value for threatened bat species. Without having investigated the key roosting areas for bats, the impact of the dam can by no means be measured. Similarly, nationally and European wide threatened large mammal species are of primary conservation concern. The EIAR does not provide any information on the population size and distribution of these species. Striped hyena (*Hyaena hyaena*) is known to depend on cave ecosystems during their reproduction period. Thus, the canyons and stony slopes of the Dicle Valley play a crucial role for this species. Similar concerns are valid for other mammals with habitat requirements directly associated with the river ecosystem and the associated rocky areas. While the possible presence of several mammal species is clearly acknowledged by the EIAR, no information can be found on the distribution and habitat requirements of these species essential to make solid assessments of the proposed dam.

SECTION 4 of the EIAR – Environmental Impacts of the Project:

Plants

While a number of statements were made on the possible impacts on plant communities in general, no specific information is provided on the impact of the project on threatened plant species listed in Section 3 of the EIAR. There are several narrow range plant species in the area for which the impact of the project has to be determined clearly, among which *Trifolium batmanicum* is the highest priority.

Reptiles

No detailed information is given on impacts regarding reptiles. Further, the EIAR states that several species will find other suitable grounds to survive which is very unlikely because (i) most of these species depend on habitats associated with the river ecosystem and canyons (ii) even though there may be suitable habitats outside the catchment area of the dam, these habitats would be already occupied as territories of other populations of these species. Therefore, the impact has to be measured by using concrete information on population size and distribution of species which is not available in the EIAR.

Birds

The species that are going to be largely affected are those which are confined to the riparian ecosystem and rocky habitats (such as cliffs). The impact assessment for those species is not carried out in sufficient detail. For instance, no estimates are given to what extent the breeding population of the Pied Kingfisher (*Ceryle rudis*) will disappear. Furthermore, the conclusion in the EIAR which states that Lesser Kestrel (*Falco naumanni*) and Cinereous Bunting (*Emberizia cineracea*) are not going to be affected by the project is not sufficiently documented and justified. Similarly, all the other remarks that the other threatened species (Griffon Vulture, Bonelli's Eagle, and Great Bustard) in the project area will remain unimpacted by the project have to be underpinned by specific data and simulations. As documented in Section 9 of this review, these statements are not valid at least for Griffon Vulture and Bonelli's Eagle.

While some widespread species (such as gulls and ducks) are known to benefit from dam constructions, this situation cannot be considered as an environmental benefit of the Ilisu project specifically according to OP 4.04. The Dicle River's intact canyons and associated riparian habitats are already of global conservation importance and host irreplaceable populations of threatened species. The waterbird species that are likely to benefit from the dam construction are most of the time widespread and cosmopolitan species which are increasing around the world in any case. Therefore, the likelihood of appearance of some gull and tern colonies can by no means be regarded as compensating the threatened bird biodiversity of the Dicle River which will disappear following the construction of the dam - see section 9.2.

Mammals

It is a very superficial and highly unscientific remark that bat populations in the area will find new caves to survive. Caves are geographic formations that are typically associated with canyons and other rocky habitats abundant along the main river course. Therefore, any impact assessment on bat populations requires (i) identification of existing roost areas and the population sites in those caves and (ii) identification of other potential roost areas i.e. caves that are located outside the catchment area of the dam. Nevertheless, suitable and untouched caves would readily be used by other bat populations if any exist outside the catchment area of the dam. Similar concerns are valid for large and small mammal species in the area which have specific habitat requirements such as the striped hyena (*Hyaena hyaena*). Furthermore, the fragmentation of the populations of large mammals following the dam construction is not discussed at all in the impacts section. While the presence of several species of conservation concern is documented in the section 3, the impact of the project on these species is not sufficiently discussed and many conclusions which indicate that the project will not affect such species are very premature as they cannot be justified based on scientific methods.

SECTION 5 of the EIAR - Complimentary Investigations:

While the need for further investigations for plants, reptiles, birds and mammals has been broadly described in the EIAR, this cannot be regarded as complimentary investigations carried out as a parallel process to the construction. In this case, any investigation that should be carried out shall be

seen as a prerequisite to take the final decisions about the project and they should be completed before the decision of the project is taken. The investigations may well indicate the need for major revisions in the project. Thus, we would expect that many of the recommended investigations would be carried out as part of the EIA process. At this stage the EIA should be regarded as incomplete.

SECTION 6 - Mitigation Measures:

Plants

Despite the biological importance of the Dicle Valley (as highlighted in the previous sections of this report), no concrete mitigation measures have been proposed to minimize the negative impacts of the project on biodiversity (plants, reptile, birds, mammals) or no potential revisions of the project were considered. Therefore, the EIA should be regarded as incomplete.

9 IMPACTS OF THE PROJECT ON BIRDS AND BIODIVERSITY

As mentioned above, the environmental impacts of the project are underestimated to a large extent in the existing EIAR. In order to thoroughly assess and mitigate the actual impacts of the project the recommendations and definitions of OP 4.04 have to be taken in to account. Proper consideration of these recommendations and definitions essentially require a much more comprehensive EIAR than the existing report. These recommendations and definitions include the following:

Quote

3. The Bank promotes and supports natural habitat conservation and improved land use by financing projects designed to integrate into national and regional development the conservation of natural habitats and the maintenance of ecological functions. Furthermore, the Bank promotes the rehabilitation of degraded natural habitats.

4. The Bank does not support projects that, in the Bank's opinion, involve the significant conversion or degradation of critical natural habitats.

Unquote

Furthermore, following definitions are given in Annex A of OP 4.04:

Quote

(c) *Significant conversion* is the elimination or severe diminution of the integrity of a critical or other natural habitat caused by a major, long-term change in land or water use. Significant conversion may include, for example, land clearing; replacement of natural vegetation (e.g., by crops or tree plantations); permanent flooding (e.g., by a reservoir); drainage, dredging, filling, or channelization of wetlands; or surface mining. In both terrestrial and aquatic ecosystems, conversion of natural habitats can occur as the result of severe pollution. Conversion can result directly from the action of a project or through an indirect mechanism (e.g., through induced settlement along a road).

(d) *Degradation* is modification of a critical or other natural habitat that substantially reduces the habitat's ability to maintain viable populations of its native species.

(e) *Appropriate conservation and mitigation measures* remove or reduce adverse impacts on natural habitats or their functions, keeping such impacts within socially defined limits of acceptable environmental change. Specific measures depend on the ecological characteristics of the given site. They may include full site protection through project redesign; strategic habitat retention; restricted conversion or modification; reintroduction of species; mitigation measures to minimize the ecological damage; post-development restoration works; restoration of degraded habitats; and establishment and maintenance of an ecologically similar protected area of suitable size and contiguity. Such measures should always include provision for monitoring and evaluation to provide feedback on conservation outcomes and to provide guidance for developing or refining appropriate corrective actions.

Unquote

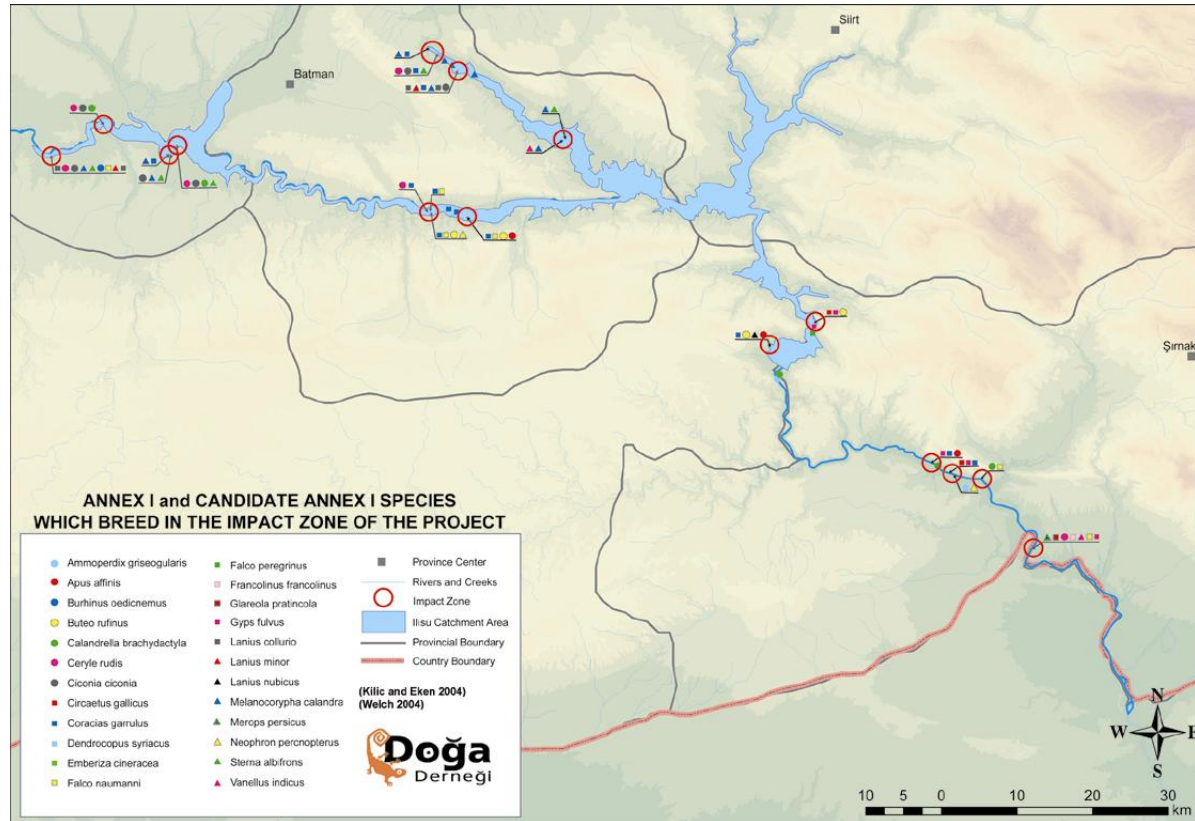
9.1. SIGNIFICANT CONVERSION OF HABITATS

As clearly stated in Annex A OP 4.04, flooding (e.g., by a reservoir) is considered one of the causes of elimination or severe diminution of the integrity of a critical or other natural habitat. The proposed dam will result in permanent loss of the natural riparian ecosystem and other associated habitats for a river course of over 170 km. Due to the extremely large magnitude of natural habitat conversion, ecologically viable populations of rare, vulnerable, migratory and endangered species will be very

significantly affected and some will no longer exist in the impact zone of the project unless in-situ protection through full revision of the project is considered as an option.

9.2. SIGNIFICANT DEGRADATION OF HABITATS AND SPECIES

The existing EIAR neither makes adequate use of literature information nor attempts collecting sufficient amount of new data to assess the impacts of a project of this magnitude. Available literature information on key rare, vulnerable, migratory and endangered species and the prime habitats for these species to maintain their viable populations is summarized in Table 1 forming the basis of the assessment provided below.



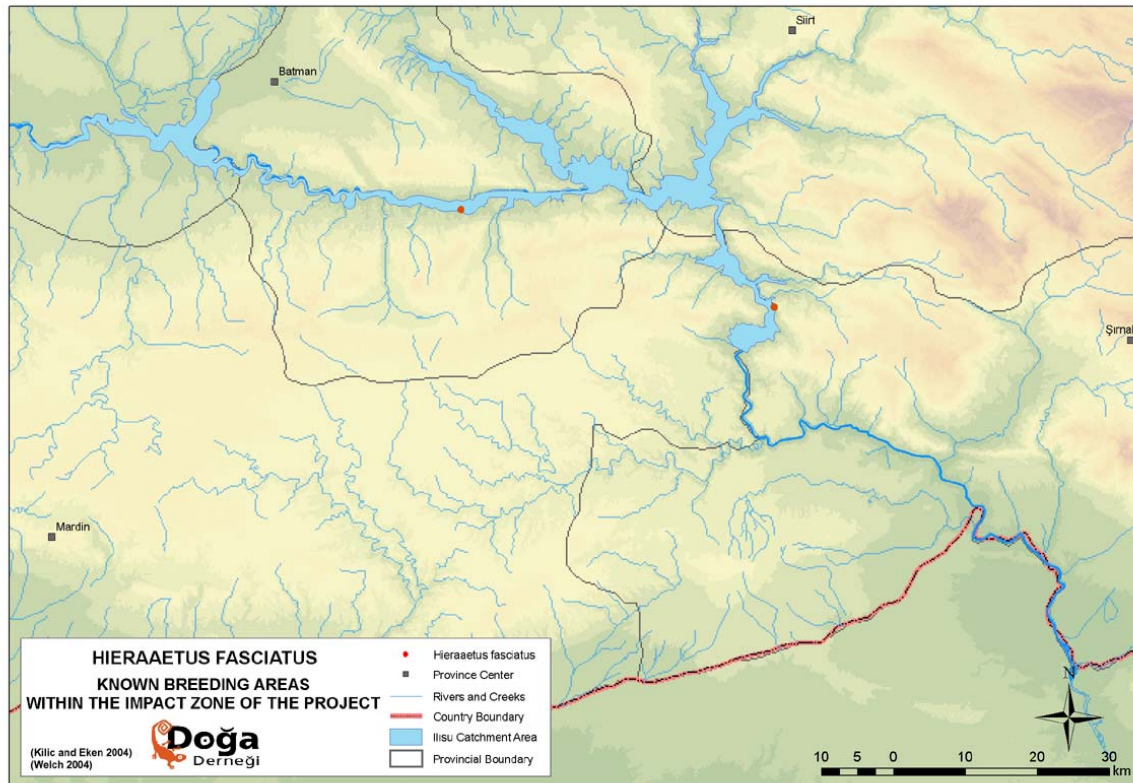
According to this assessment, ecologically viable populations of the following species will no longer exist in the impact zone of the project unless *in-situ* protection through revision of the project is considered as an option. Establishment and maintenance of an ecologically similar protected area of suitable size and contiguity is no longer an option for the Dicle River as all the other similar riverine ecosystems in Turkey are readily converted to large dams e.g. the dams along the Firat (Euphrates) River. Because this assessment is based on limited amount of information, the impacts described here indicate only the minimum amount of biodiversity loss resulting from the project. A more detailed survey on the fauna and flora of the project area would probably demonstrate even more severe effects of the project.

Detailed information on extent of potential degradation in populations of key species and their habitats is given below:

Bonnelli's Eagle (*Hieraaetus fasciatus*):

Status (Table 1): The species is known to breed in Hasankeyf and Güçlükonak (Welch 2004). The nest in Hasankeyf is at an altitude of 40-43 meters (Kılıç et al. 2003), while the pair near Güçlükonak breeds at a lower altitude ca. 30 meters from the river (M. Bozdoğan, pers. com).

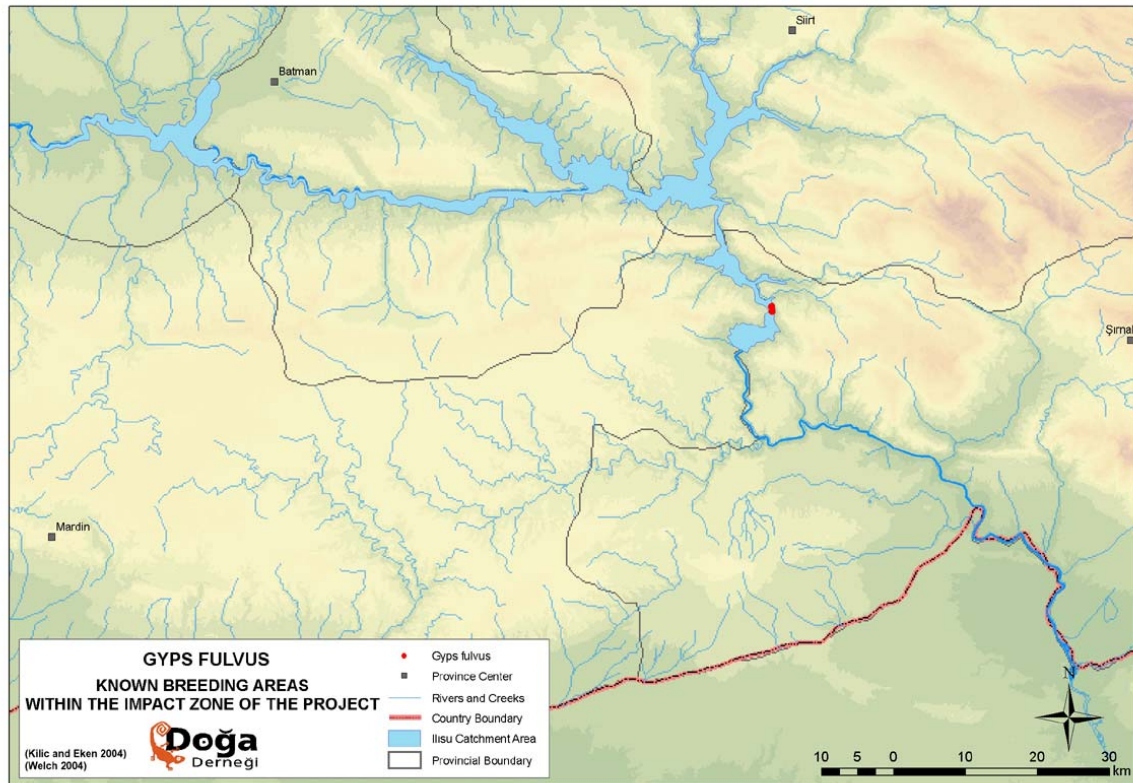
Impact: The two known breeding pairs at the cliffs of the Dicle River (the entire population in the region and 6% of the Turkish population) will be lost permanently due to the flooding of their nesting sites – see map below. No mitigation measures can be identified for the species unless the project is revised.



Griffon Vulture (*Gyps fulvus*):

Status: The only known breeding colony of the species (25-30 pairs) is at the Dicle Valley near Güçlükönak. The Griffon Vulture colony and the Bonelli's Eagle nest are located at the same cliffs at an altitude of ca. 30 meters from the river (Kılıç and Eken 2004; Welch 2004).

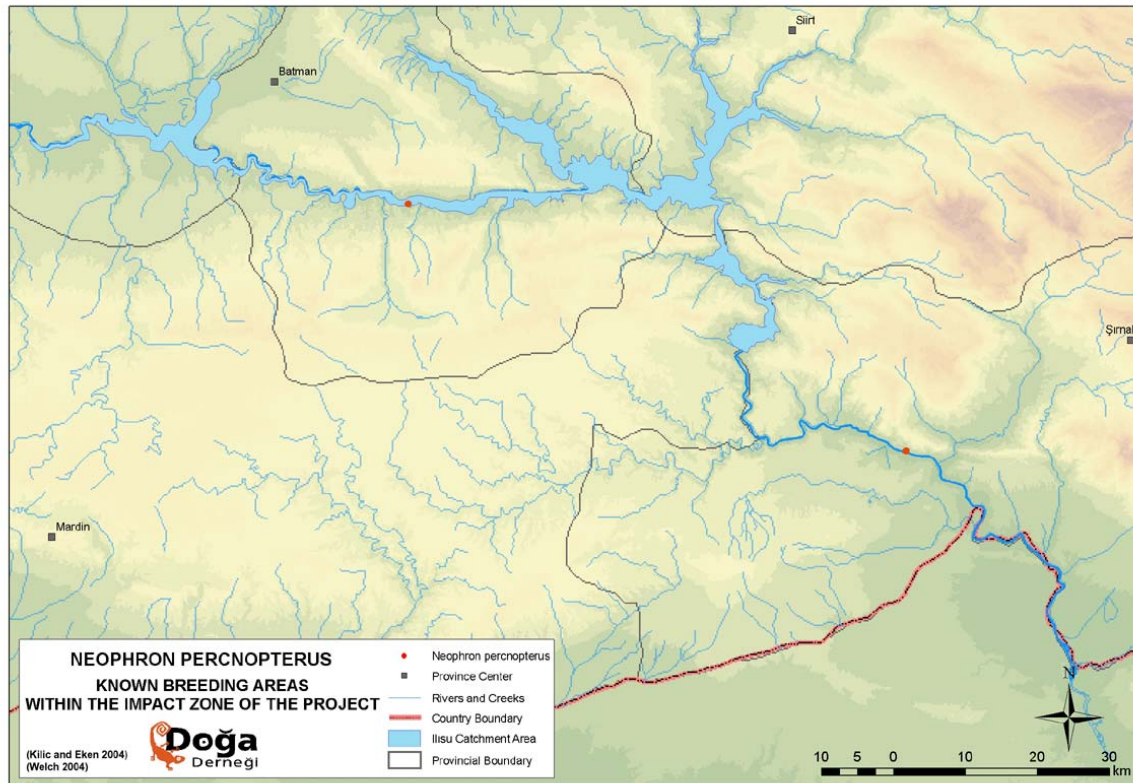
Impact: Contrarily to the information given in EIAR, the colony near Güçlükönak will be lost permanently due to the flooding of the nesting sites. This colony is the only known breeding site of the species in the region while it constitutes nearly 10% of the entire Turkey population – see map below. No mitigation measures can be identified for the species unless the project is revised.



Egyptian Vulture (*Neophron percnopterus*):

Status: The species is known to breed in the cliffs along the valley in Dicle Floodplain (PA23); Hasankeyf (PA25); Güçlükonak/Taşkonak (PA26) (Welch 2004).

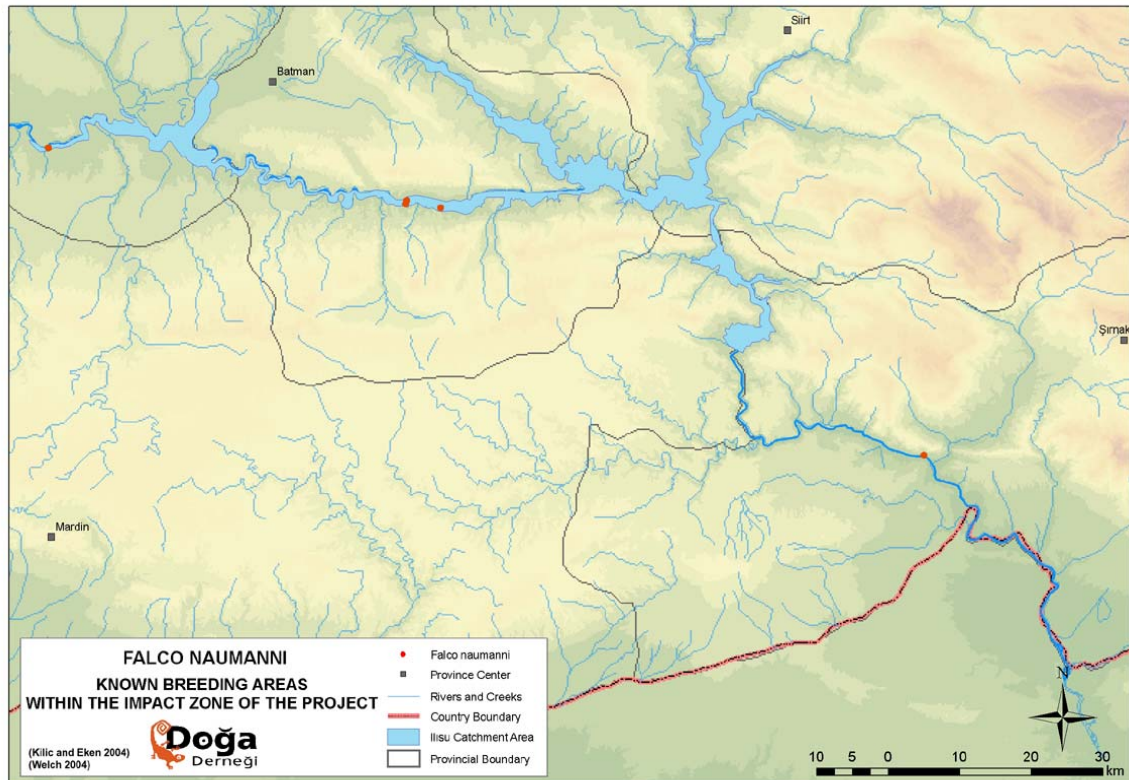
Impact: While the two known nests near Hasankeyf will disappear due to the flooding of their nesting sites, it is difficult to assess the full impact of the project on the population of this species because the full distribution of the species in the region is not adequately surveyed. Nonetheless, similar to other cliff nesting birds, no mitigation measures can be identified for the species unless the project is revised.



Lesser Kestrel (*Falco naumanni*):

Status: The species is known to breed in the Dicle Floodplain (PA23); North Mesopotamian Steppe (PA24); Hasankeyf (PA25); Güçlükonak/Taşkonak (PA26); Bostancı (PA27) (Welch 2004). 30-35 pairs nest in the canyons of Hasankeyf (M. Biricik, Dicle University, pers. com).

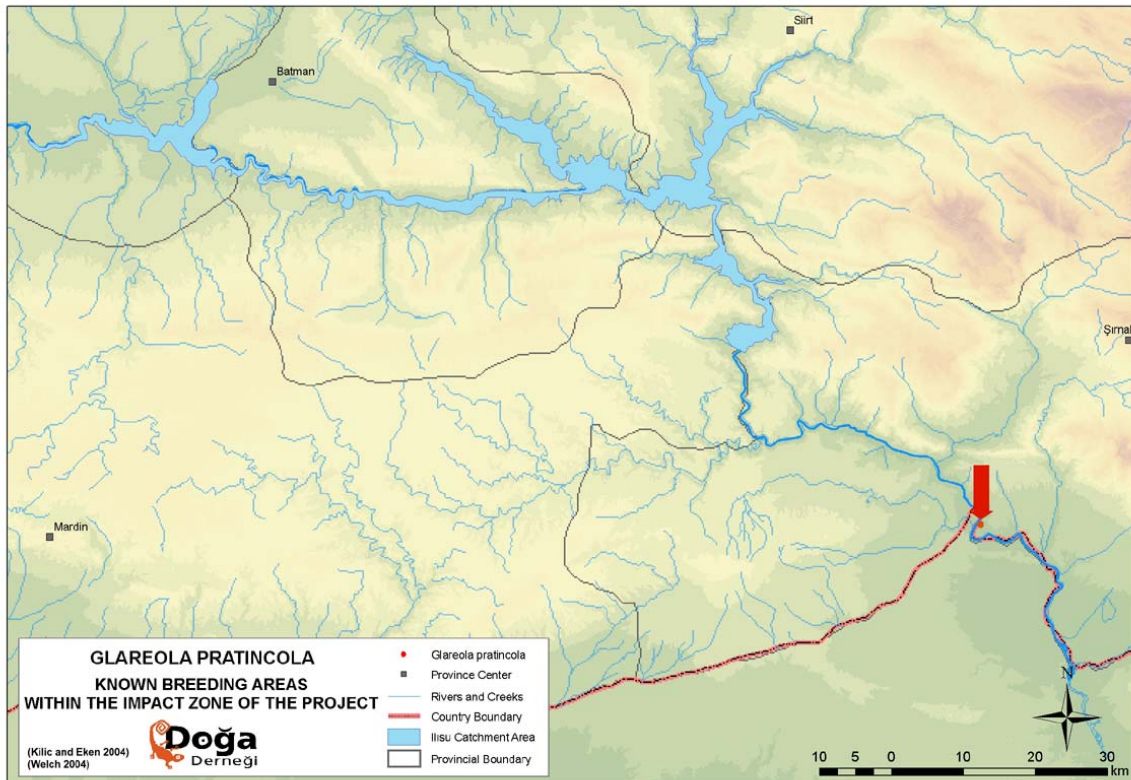
Impact: At least the colony in Hasankeyf and almost certainly some other populations listed above (collectively corresponding to 50% of the local breeding population) will be lost permanently due to the flooding of their nesting sites. No mitigation measures can be identified for the species unless the project is revised.



Collared Pratincole (*Glareola pratincola*):

Status: The species' breeding population along the river is confined to the Bostancı area, in the Silopi - Dicle Floodplains IBA where its population is estimated at 100-200 pairs (Kılıç and Eken 2004).

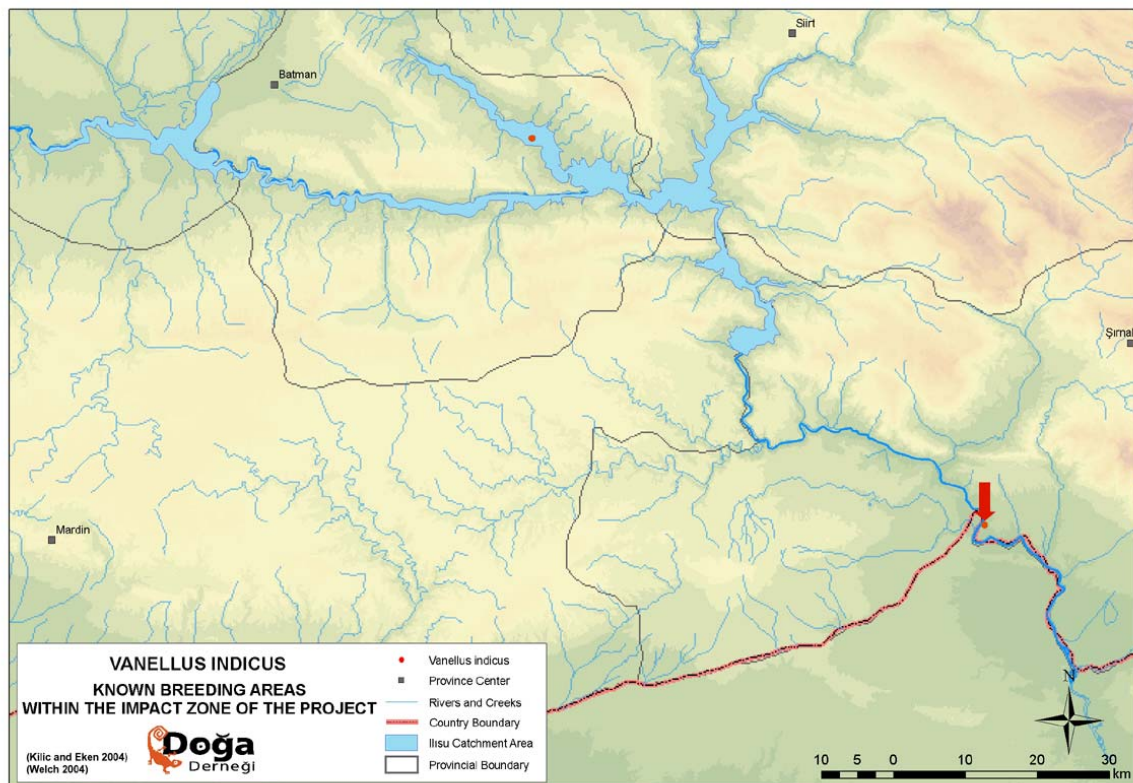
Impact: 100-200 pairs of the species breed in shingle islands in the downstream of the proposed dam – in Bostancı area (Cizre ve Silopi IBA). This corresponds to the 100% of the known breeding population along the Dicle River, at least 3% of the national population and 1% of the entire European population. The islands where the species breed will no longer be a suitable nesting ground for the species as the Dicle River will be artificially controlled associated with rapid fluctuations in the water regime, if and when the dam becomes operational. Several of such islands along the Euphrates have lost their value for breeding birds after the construction of the Birecik Dam, due to similar reasons. No mitigation measures can be identified for the species unless the project is revised.



Red-wattled Plover (*Vanellus indicus*):

Status: In Europe, the species breeds only in Turkey. Dicle River Valley is the sole breeding area of the species in Turkey and in Europe where 40 to 80 pairs are estimated to breed (BirdLife International 2004). The species is known to breed along the main river course in suitable riparian habitats and floodplains (Welch 2004).

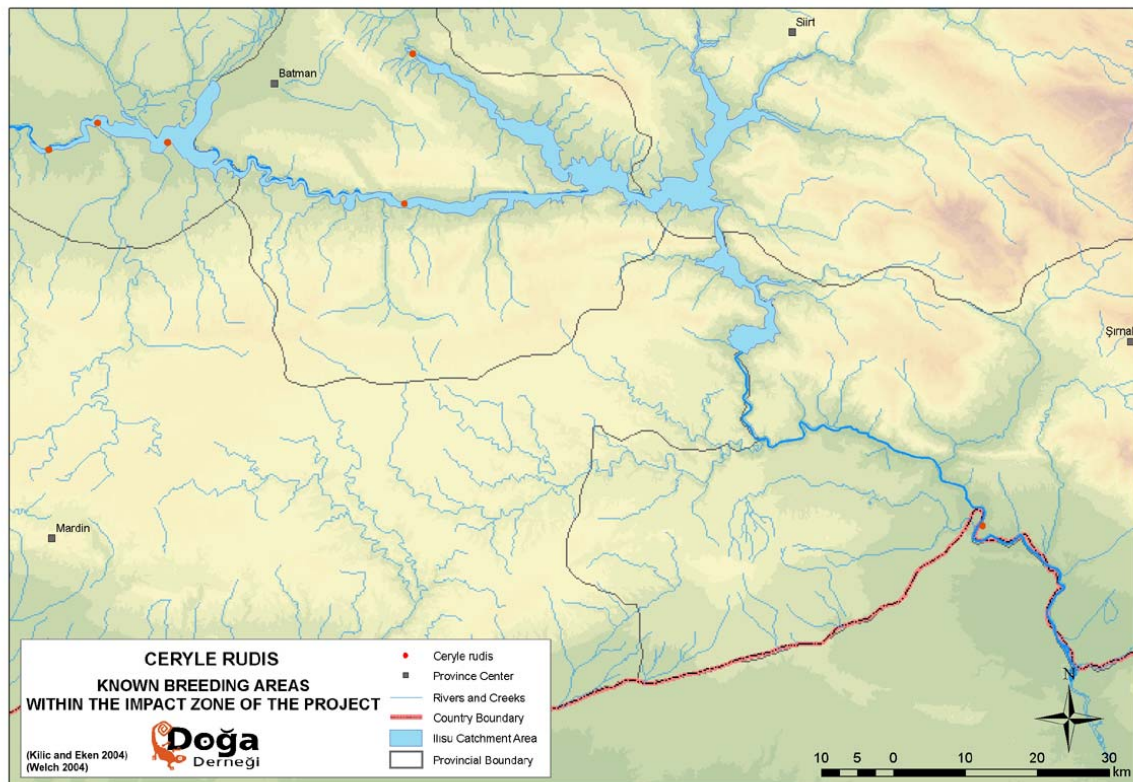
Impact: The species uses the same habitat as Collared Pratincole. The northern populations will be directly affected by the project, due to flooding of suitable nesting grounds, while the birds in Bostancı will be lost because of rapid fluctuations in the water regime (effects of the dam in the down-stream). BirdLife International (2004) predicts large future decline owing to habitat loss resulting from dam construction. If the project comes into force, virtually the entire Turkish and European population will be lost permanently. No mitigation measures can be identified for the species unless the project is revised.



Pied Kingfisher (*Ceryle rudis*):

Status: In Europe, the species breeds only in Turkey (except a single pair in Southern Europe). The riparian zone (sand banks) of the Dicle River is the last main breeding area of the species in Turkey and in Europe. The species is known to decrease in Turkey at a rate of more than 80% over the past 15 years (BirdLife International 2004). The Pied Kingfisher population along the Fırat (Euphrates) River is largely depleted due to large dam constructions and the respective loss of riparian habitats. Several breeding pairs are known from various localities of the Dicle River. The population within IBAs in the region is estimated at 16-26 pairs (Kılıç and Eken 2004) while the entire breeding population is likely to be larger than this (Welch 2004).

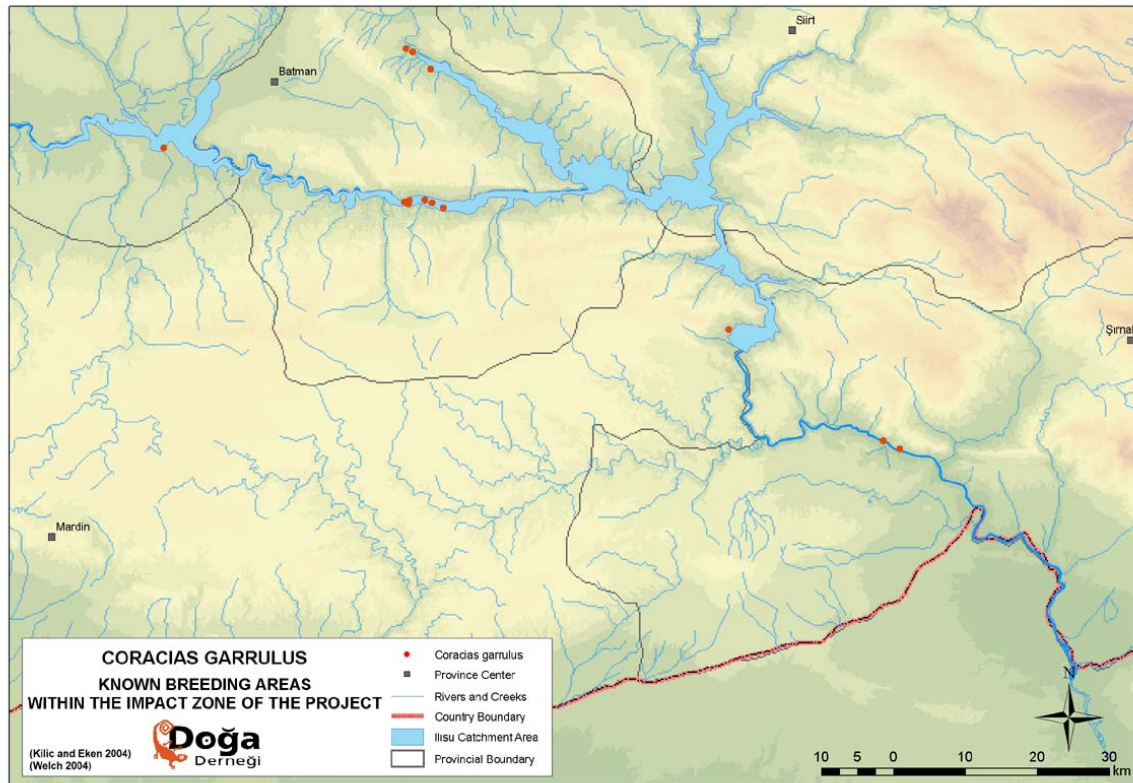
Impact: As indicated above, the species is strictly associated with riparian habitats i.e. sand-banks. The species is known to decrease in Turkey at a rate of more than 80% over the past 15 years (BirdLife International 2004). The Pied Kingfisher population along the Fırat (Euphrates) River is largely depleted due to large dam constructions and the respective loss of riparian habitats. The Dicle River is one of the last main breeding areas of the species in Turkey and in Europe and it hosts approximately 20% of the species' remaining European population. If the Ilisu Dam is constructed, one of the last core breeding grounds of the species in Turkey and Europe will be lost permanently. No mitigation measures can be identified for the species unless the project is revised.



Eurasian Roller (*Coracias garrulus*):

Status: The main breeding location for the species is the Hasankeyf area. The species is recently classified as globally Near Threatened (www.birdlife.org).

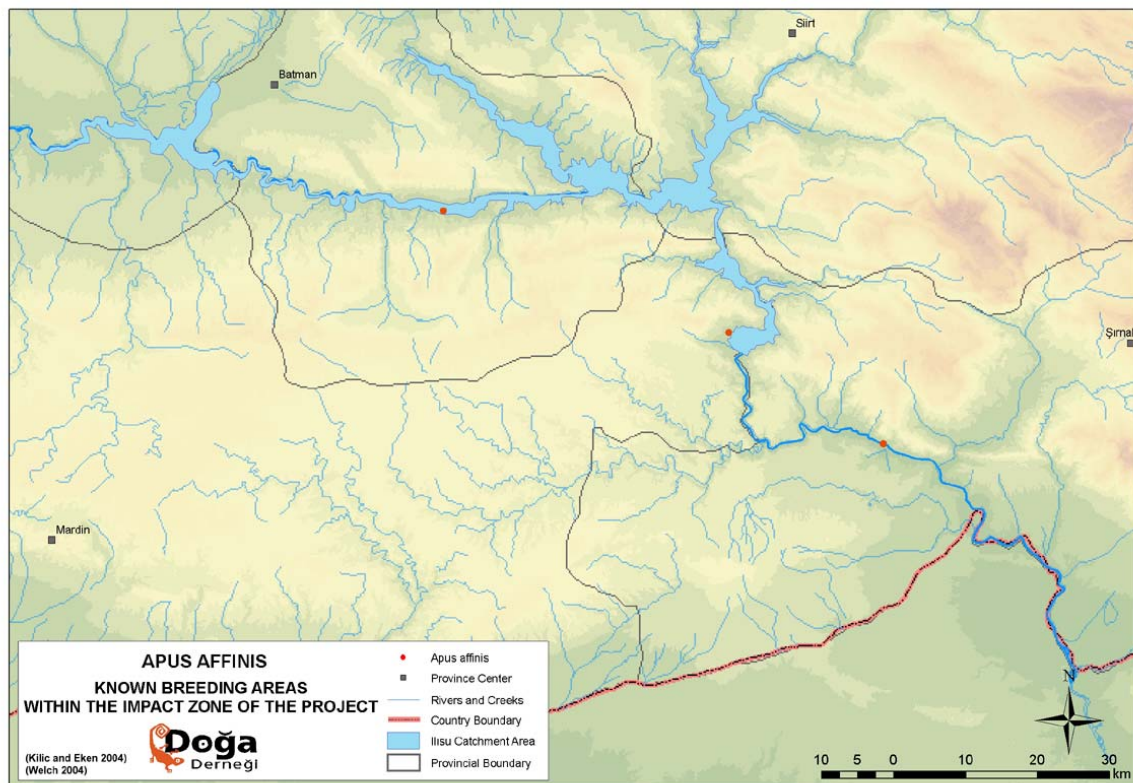
Impact: While the known core population in Hasankeyf will disappear due to the flooding of their nesting sites; it is difficult to assess the full impact of the project on the population of this species because the full distribution of the species in the region has not been thoroughly surveyed.



Little Swift (*Apus affinis*):

Status: In Europe, the species breeds only in Turkey (except a single pair in Spain). The species' breeding population is confined to the cliffs of the main river course. Little Swifts nest in cliffs and caves in the canyons of the Dicle River (Welch 2004).

Impact: While the known nesting areas in Hasankeyf will disappear due to the flooding of their nesting sites; it is difficult to assess the full impact of the project on the population of this species because the full distribution of the species in the region is not adequately surveyed. Nonetheless, similar to other cliff nesting birds, no mitigation measures can be identified for the species unless the project is revised. The population that will be affected by the project corresponds to at least 10% of the species Turkish and European populations. No mitigation measures can be identified for the species unless the project is revised.



Striped Hyena (*Hyaena hyaena*):

Status: Welch (2004) reports its presence open and rocky areas of North Mesopotamian Steppe (PA24); Hasankeyf (PA25); Güçlükönak/Taşkonak (PA26); Bostancı (PA27). The surroundings of Derik-Atalar and Dargeçit as well as the Hasankeyf area are of particular importance for the species (Welch 2004). The species is known to use cavities and caves in the lower parts of the slopes.

Impact: Not only the barrier effect of the dam, but also the habitat loss in cavities and caves in the lower parts of the slopes over large distances might jeopardize the hyena population in the region, since this species is already endangered and lives in very low population densities. This species has to be examined in more detail.

Bats: Since the geology of the area contains calcareous rocks, several caves are present along the main river course suitable for bats. Caves with an appropriate microclimate can shelter large bat colonies containing several thousands of bats in different species. Such roosts are mostly unique and therefore irreplaceable, not only due to the climatic conditions and their association with the main river course but also due to the traditional behavior of the bat colonies. Therefore, bat colonies along the river will be lost permanently by the project. No mitigation measures can be identified for the species unless the project is revised.

Euphrates Soft-shelled Turtle (*Rafetus euphraticus*):

Status: This species occurs only in the Euphrates and Tigris rivers in the world, starting from south-eastern Turkey (Baran and Atatur 1998). This species is almost exclusively riverine, inhabiting preferably permanent and temporary tributaries and oxbow lakes as well as slow flowing sections of the main river channel (Gramentz 1991; Taskavak and Atatur 1998). Nests are placed in sandy riverbanks close to the waterline. The species is known to occur in Dicle Floodplain and Bostancı areas, in the Tigris river and its tributaries (Welch 2004).

Impact: Major dams cause fundamental changes to water quality and the flow regime downstream, making it impossible for the species to survive in long downstream riverine stretches. The loss of sandbank nesting habitat through flooding and sand mining is also a serious threat (Gramentz 1991, 1993; Taskavak and Atatur 1998). This globally threatened species is declining in Turkey because of dams. The species is known to occur in the Dicle Floodplain and Bostancı areas, in the Tigris River and its tributaries (Welch 2004) and it will largely decrease if the dam is built causing further deterioration of the global conservation status of the species.

Fish: Kuru (1994, 1996) clearly indicates that large dams negatively affect several freshwater taxons in Dicle and Fırat rivers. Among these, *Glyptothorax* species are likely to decline overwhelmingly if they do not go extinct as a whole as a result of the dam construction (Kuru 1996). Several other fish species confined to the Dicle and Fırat river systems will not be able to survive in the dam due to the lack of suitable places for laying eggs and growth of young fish; increase in depth necessarily associated with decrease in water temperature; and fragmentation of migratory corridors (Kuru 1996). Fish that are suitable for fishery in lakes are rarely present in the natural river ecosystems. Therefore, these species have to be introduced in the lake as proposed in the EIAR (p. 73). Not only the construction of the dam will result in habitat loss, but also the introduction of exotic fish species itself is known to be a major reason for loss of natural fish species (Kuru 1996).

10 PUBLIC CONSULTATION AND DISCLOSURE

10.1 REQUIREMENTS

10.1.1 Requirements Pertaining to Public Consultation

OP 4.01¹² states that:

Quote from the IFC version

12. For all Category A projects and as appropriate for Category B projects during the EA process, the project sponsor consults project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and takes their views into account. The project sponsor initiates such consultations as early as possible. For Category A projects, the project sponsor consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference for the EA are finalized, and (b) once a draft EA report is prepared. In addition, the project sponsor consults with such groups throughout project implementation, as necessary to address EA related issues that affect them.

Unquote

10.1.2 Requirements Pertaining to Disclosure

OP 4.01 states that:

Quote from the IFC version

14. For meaningful consultations between the project sponsor and project-affected groups and local NGOs on all Category A and as appropriate for Category B projects, the project sponsor provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.

15. For a Category A project, the project sponsor provides for the initial consultation a summary of the proposed project's objectives, description, and potential impacts; for consultation after the draft EA report is prepared, the project sponsor provides a summary of the EA's conclusions. In addition, for a Category A project, the project sponsor makes the draft EA report available at a public place accessible to project-affected groups and local NGOs.

Unquote

10.2 COMPLIANCE

The following table compares the requirements of OP 4.01 with the implementation of the actual Ilisu EIAR process:

¹² www.ifc.org/enviro

OP 4.01 Requirement		Ilisu EIAR Process	Compliance
CONSULTATION	1 st stage of consultation of the interested parties before the terms of reference for the EA are finalized	Such consultation is not documented in the report that was disclosed, and there is no evidence that it ever took place. The Project sponsor had a Public Information Centre operational in Batman for about 4 months, but the feedback from people consulted in this centre is not reflected in the report.	No
	2 nd stage of consultation of the interested parties once a draft EA report is prepared	Such consultation is not documented in the report. The Consortium organized a number of public meetings in the Project-affected area in December 2005. The feedback from these meetings is not reflected in the report that was disclosed.	No
PUBLIC DISCLOSURE	The project sponsor provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.	Apart from the leaflet mentioned below, none of the environmental documents is available in Turkish to the public. Only the summary of the EIA is available in Turkish.	No
	The project sponsor provides for the initial consultation a summary of the proposed project's objectives, description, and potential impacts	A leaflet in Turkish was produced by DSI and ENCON in the framework of the studies for the RAP and widely circulated to interested parties in the Project area. It includes a presentation of the proposed project's objectives, description and potential displacement impacts. Although this is a positive effort, it does not meet the requirements as it addresses only resettlement, and does not address environmental impacts at all.	No
	For consultation after the draft EA report is prepared, the project sponsor provides a summary of the EA's conclusions	The summary of the EIAR conclusions is available to interested parties only from the Internet.	Partial
	For a Category A project, the project sponsor makes the draft EA report available at a public place accessible to project-affected groups and local NGOs.	The public information centre that was operated in Batman for a while during the studies is now closed. The EIAR is not known to be available in an accessible format in the Project area.	No
Table 3: Comparison of the requirements of OP 4.01 with the implementation of the actual Ilisu EIAR process.			

11 CONCLUSIONS

The EIAR submitted by the consortium of the Ilisu Dam and HEPP Project is not in line with the requirements of the two safeguard policies published by the World Bank Group – namely, OP 4.01 and OP 4.04.

Despite the fact that the project area comprises natural habitats and critical natural habitats, the EIAR itself clearly documents that it is not within the mandate of the Ilisu Engineering Group (IEG) to take into account the World Bank Operational Policy on Natural Habitats (OP 4.04) along with some other operational policies (page 1-11 of the EIAR). Thus, the current EIAR completely fails to comply with OP 4.04 being one of the main policy documents for the project due to the exceptionally high and clearly documented natural value of the impact zone.

The main requirements of OP 4.01 which have not been met by the EIAR relate to:

- Comprehensive and ecologically meaningful mitigation measures underpinned by solid and detailed baseline information.
- The development of the Environmental Action Plan.
- Public consultation and disclosure during and after the EIA process.

In Annex A of OP 4.04, flooding (e.g., by a reservoir) is considered as one of the causes of elimination or severe diminution of the integrity of a critical or other natural habitats. The proposed project will result in permanent loss of a river course of over 170 km, the single remaining example of the similar habitats in South-eastern Turkey. Owing the extremely large magnitude of natural habitat conversion, ecologically viable populations of rare, vulnerable, migratory and endangered species will no longer exist in the impact zone of the project unless in-situ protection through full revision of the project is considered as an option.

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