



Baljuvon – Sari Khosor Road Project

Contract No. 2025.0150352025.015035



Critical Habitat Assessment and Priority Biodiversity Features June 2026



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Acronyms

Acronym	Definition
BMP	Biodiversity Management Plan
BSK	Baljuvon – Sari Khosor
CH	Critical Habitat
EBRD	European Bank for Reconstruction and Development
ESIA	Environmental and Social Impact Assessment
ESR	Environmental and Social Requirement (EBRD)
EU	European Union
CHA	Critical Habitat Assessment
CMS	Convention on Migratory Species
EAAA	Ecologically Appropriate Area of Analysis
IBAT	Integrated Biodiversity Assessment Tool
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
PBF	Priority Biodiversity Feature
PS 6	IFC Performance Standard 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources)
UNEP-WCMC	United Nations Environment Programme – World Conservation Monitoring Centre



1. Introduction

1.1. Purpose

This document presents the outcomes of an assessment for the presence of Critical Habitat (CH) and/or Priority Biodiversity Features (PBF) relating to the rehabilitation of an existing highway within Tajikistan.

The project is being considered by the European Bank for Reconstruction and Development (EBRD) and as such the banks environmental and social safeguards apply to the project planning and assessment.

For this CHA and PBF determination, the requirements of EBRD Environmental and Social Requirement (ESR) No. 6 (European Bank for Reconstruction and Development, 2024) and associated guidance (European Bank for Reconstruction and Development, 2025) have been addressed.

The report provides a summary of the project description, its location and the results of data collation, review and assessment against established EBRD criteria as set out by EBRD.

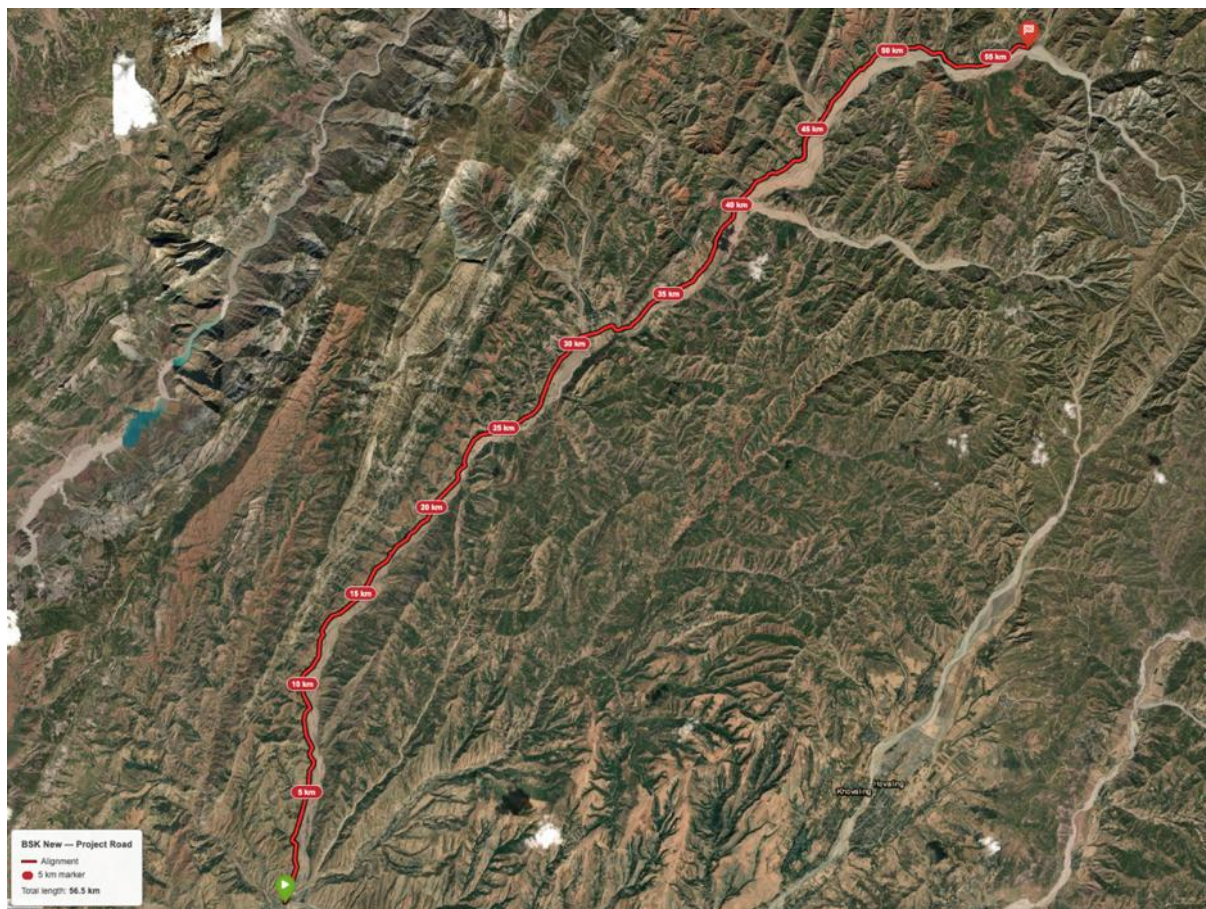
1.2. Project Components

The BSK Project involves upgrading approximately 56 km of existing unpaved road between Baljuvon and the Sari Khosor area, Baljuvon District, Khatlon Region. The EBRD has classified the project as Category A. The road alignment follows the Shurobdaryo valley through mountainous terrain at 930–2,000+ m elevation, within the South-Western Natural Province of Tajikistan.

Key components of the project are road rehabilitation to Category V standard; bridge replacement/repair; slope stabilisation; drainage works and related work areas, storage and laydown areas.

Much of the existing road has been lost due to erosion from rain run off and bank erosion along the river. The rehabilitated road will be developed along the existing alignment and require relatively minor new permanent land take. The project layout is presented in Figure 1.

Figure 1. Project Location



1.3. Regulatory Requirements

The project will be subject to all national legislation and regulatory requirements and EBRD Environmental and Social Policy requirements. As noted previously for the CHA and determination of the presence of PBFs, the primary EBRD requirements are set out in ESR 6 and the associated Guidance Note.

There is no direct national requirement to determine the presence of critical habitat, although Tajikistan national impact assessment requirements include biodiversity considerations and the need to protect species and habitats. These are based around ex-situ protection which is reliant on the Tajikistan Red Data Book; the latest version for which was produced in 2024 and released in 2025 and in-situ protection of species, habitats and ecosystems within designated protected areas.



2. Methodology and Regulatory Requirements

2.1. Preamble

The approach taken for this assessment follows that set out in EBRD's ESR 6 and its guidance note. Three main stages have been carried out for the current project:

- Baseline Establishment
- Critical Habitat and PBF Assessment
- Impact Assessment and Mitigation

This section sets out the approach taken for each of these stages.

2.2. Baseline Establishment

2.2.1 Defining The Study Area

Both the CH and PBF assessment relate to the risk of habitats, ecosystems and species with high value and need for protection being present within an area that may be affected by the project directly or indirectly. Potential project impacts are not the only factor defining the extent of area of search for such habitats and species and their ecosystems. As noted in EBRD ESR 6, "the study area should be large enough to encompass a project's direct and indirect impacts and to characterise the ecological patterns, processes and functions occurring in the project area".

This extended study area is referred to as the Ecologically Appropriate Area of Analysis (EAAA).

Where an IFC PS 6 Proximity Search has been conducted using the Integrated Biodiversity Assessment Tool (IBAT), an initial EAAA for this data is automatically defaulted to a radius of 50 km from the project. This 50 km extent is retained as the inclusive frame for the IBAT-based long-list screening described in Section 3. Where Sections 3 and 4 of this assessment refer to "the EAAA" without further qualification, this inclusive 50 km extent applies; species-specific or feature-specific tests are referred to their appropriate feature-group EAAA (A–F) as set out below.

Feature-Group EAAA Framework

The EBRD PR6 Guidance Note (March 2023) and the IFC PS6 Guidance Note (GN6, 2019, paragraph GN36) both direct that the EAAA should be scaled to the ecological process or species being considered. A single uniform buffer is not adequate for a corridor that traverses ecosystem types ranging from valley-floor irrigated agriculture to mid-slope sparse woodland and upper-slope cliff-face habitats. Six feature-group EAAAs (A–F) are therefore defined for this assessment, each scaled to the ecological requirements of its target features and bounded by ridgelines, watersheds, protected-area boundaries, habitat-type edges or elevation bands rather than by metric distance from the alignment. Where features share ecological requirements and distributions, a common EAAA has been defined; where features operate at distinct ecological scales (sessile flora, cliff-nesting raptors, riparian species, wide-ranging mammals), separate EAAAs have been defined. Five of the six are delineated as mapped polygons; EAAA A (Wide-Ranging Mammal) is treated as a narrative landscape-scale context, for the reasons set out below.

The six EAAAs are set out in Table 1. Each is scaled to its target features and bounded by stated ecological landmarks rather than by distance from the alignment.

Table 1: Project EAAA's

EAAA	Name	Extent	Target features / species	Ecological rationale
A	Wide-ranging	Landscape-scale narrative context; no discrete mapped polygon (see	Snow Leopard; Bukhara Urial; Markhor; Brown Bear (<i>Ursus</i>	Scaled to the home-range and movement



EAAA	Name	Extent	Target features / species	Ecological rationale
	Mammal EAAA	treatment below). The relevant landscape is bounded to the north by the Dashti-Jum State Nature Reserve (approximately 30–40 km from the corridor, on the Darvaz / Hazrati Shoh ridge system) and to the south by the Dangara Massif KBA (approximately 50 km from the corridor), with the alignment crossing the intervening ridge-and-valley terrain. Intensively cultivated valley floors do not form part of the favourable habitat context. Connectivity is assessed qualitatively against the IBAT / WDPA-derived perimeters of these features rather than against a delineated EAAA polygon.	<i>arctos isabellinus</i> , EN nationally); Eurasian Lynx (EN nationally); Grey Wolf. Used for: landscape-connectivity assessment; Section 12(ii)b and Section 12(iii) PBF determinations; KBA and Dashti-Jum reserve overlap and connectivity tests.	ecology of wide-ranging carnivores and ungulates, which operate at a landscape scale spanning multiple watersheds. Because no Critical Habitat case is triggered and no corridor records were field-confirmed, the relevant landscape is described qualitatively against protected-area and KBA perimeters rather than delineated as a discrete polygon (see treatment below).
B	Cliff-Nesting Raptor EAAA	The cliff-face and rocky-outcrop nesting and foraging habitat of the Shurobdaryo valley and immediately adjoining side-valleys, within the documented foraging range of the confirmed cliff-face nests (Stage 1 and Stage 2 raptor surveys: Khursand & Nugzar / Talbonov, 2026; Ergashev, 2026). A 10 km foraging radius is applied at each confirmed nest as a parameter of this habitat-bounded area, not as its definition. Provisional treatment applies where occupancy is pending Stage 3 confirmation.	Egyptian Vulture (6 active nests confirmed by tabulated records, all re-occupied in Stage 2; 2 further nests at km 36 referenced in narrative only and deferred to Stage 3); Cinereous Vulture (1 active nest at km 2–4); Barbary Falcon (1 individual at cliff-face waypoint 38.55266 N / 69.88575 E, recorded in both Stage 1 and Stage 2); Bearded Vulture (pending Stage 3 occupancy). Used for: nest-disturbance assessment; Section 12(iii) PBF determination for Cinereous Vulture; foraging-range overlap analysis for Egyptian Vulture, Barbary Falcon and Bearded Vulture.	Scaled to cliff-nesting raptor foraging and disturbance ecology. The PR6 Guidance Note paragraph GN36 directs that raptor EAAs are bounded by confirmed nesting or roosting sites and their associated foraging habitat, not by generic distance from the project. Egyptian and Cinereous Vultures forage 5–15 km from active nest sites; 10 km is the operational radius applied at each confirmed nest as a parameter of the habitat-bounded area.
C	Riparian / Hydrological EAAA	Union of the HydroBASINS Level-12 sub-basins intersecting the 500 m study corridor, dissolved into a single polygon, plus a 200 m lateral floodplain buffer along the active channel (approximately 1,086 km ²). Bounded by the watershed divides of the Shurobdaryo sub-catchment.	Eurasian Otter; Amu darya trout (<i>Salmo trutta oxianus</i> , autumn spawning migration); Turkestan Barbel; gravel-bed PBFs (Bern Convention Resolution 4 habitat codes C3.55 sparsely-vegetated and C3.62 unvegetated gravels); bankside willow-poplar riparian community. Used for: Section 12(ii) PBF determinations; downstream cumulative-effect assessment;	Scaled to hydrological connectivity. The HydroBASINS Level-12 sub-basins follow the watershed divide rather than a metric buffer of the alignment. Sediment, water-quality and barrier-effect impacts propagate downstream within

EAAA	Name	Extent	Target features / species	Ecological rationale
			gravel-bed habitat-extent assessment.	the catchment; the upstream extent captures source areas for fish and otter movement, and the lateral floodplain buffer captures the riparian-dependent terrestrial community.
D	Sessile-Species EAAA (per species)	Per-species suitable-habitat hull: the intersection of the indicative suitable-habitat envelope (elevation 1,150–1,750 m, west- to south-west-facing aspect, slope $\geq 3^\circ$, ESA WorldCover tree/shrub cover) with the qualifying sub-basin(s) of each confirmed record, dissolved per species. A 500 m study corridor is shown as the analysis buffer, not the area of impact. Centred on the GPS coordinates from the Muhammadsoleh (2026) corridor survey.	<i>Pyrus tadshikistanica</i> (6 individuals across 5 localities; km 11, 15, 29, 34, 48); <i>P. korshinskyi</i> (16 individuals across 4 localities; km 16, 37, 43, 47); <i>Malus sieversii</i> (2 sites; km 9, 12). Used for: Section 14(ii)c CH determination context; per-species mitigation-hierarchy application; offset accounting.	Scaled to the grain at which Boboev (2022) maps populations of <i>Pyrus</i> and other wild fruit trees in the analogue Dashtijum study area. The per-species habitat hull captures the suitable-habitat patch and its qualifying sub-basin context within which each confirmed individual sits, without diluting the corridor population signal against the wider national reference population. Per-species delineation reflects the heterogeneous distribution of confirmed individuals along the corridor.
E	Herbaceous Red Book Species EAAA	Polygon delineated by intersection of: (a) elevation band 800–2,000 m asl; (b) slope $> 5^\circ$ (excluding valley-floor agricultural land); and (c) absence of intensive land-use signature (excluding orchards and cultivated areas), within the wider 50 km screening frame.	<i>Allium suworowii</i> (national RDB; one population confirmed at km 33–34, Muhammadsoleh 2026); <i>Eremurus</i> spp. recorded along the corridor (<i>E. comosus</i> , <i>E. olgae</i> , <i>E. stenophyllus</i>); <i>Juno bucharica</i> . Wild tulips observed but not georeferenced or identified to species; RDB <i>Tulipa</i> recorded regionally (Latifi) and treated precautionarily pending confirmation. Used for: Section 14(ii)c CH context where applicable; PBF assessment for nationally listed flora.	Scaled to the habitat-and-elevation envelope within which the herbaceous Red Book species occur. The polygon is bounded by elevation, slope and land-use class rather than by distance from the alignment, which more accurately captures the habitat envelope of these species than a metric buffer of the corridor.
F	Tugai / Riparian-Woodland	Union of the mapped tugai vegetation polygons themselves (a habitat-level EAAA where the polygon is the feature).	Tugai vegetation fragments dominated by <i>Elaeagnus angustifolia</i> , <i>Tamarix ramosissima</i> and <i>Salix excelsa</i> .	Bern Resolution 4 habitat types are assessed at the habitat-extent level



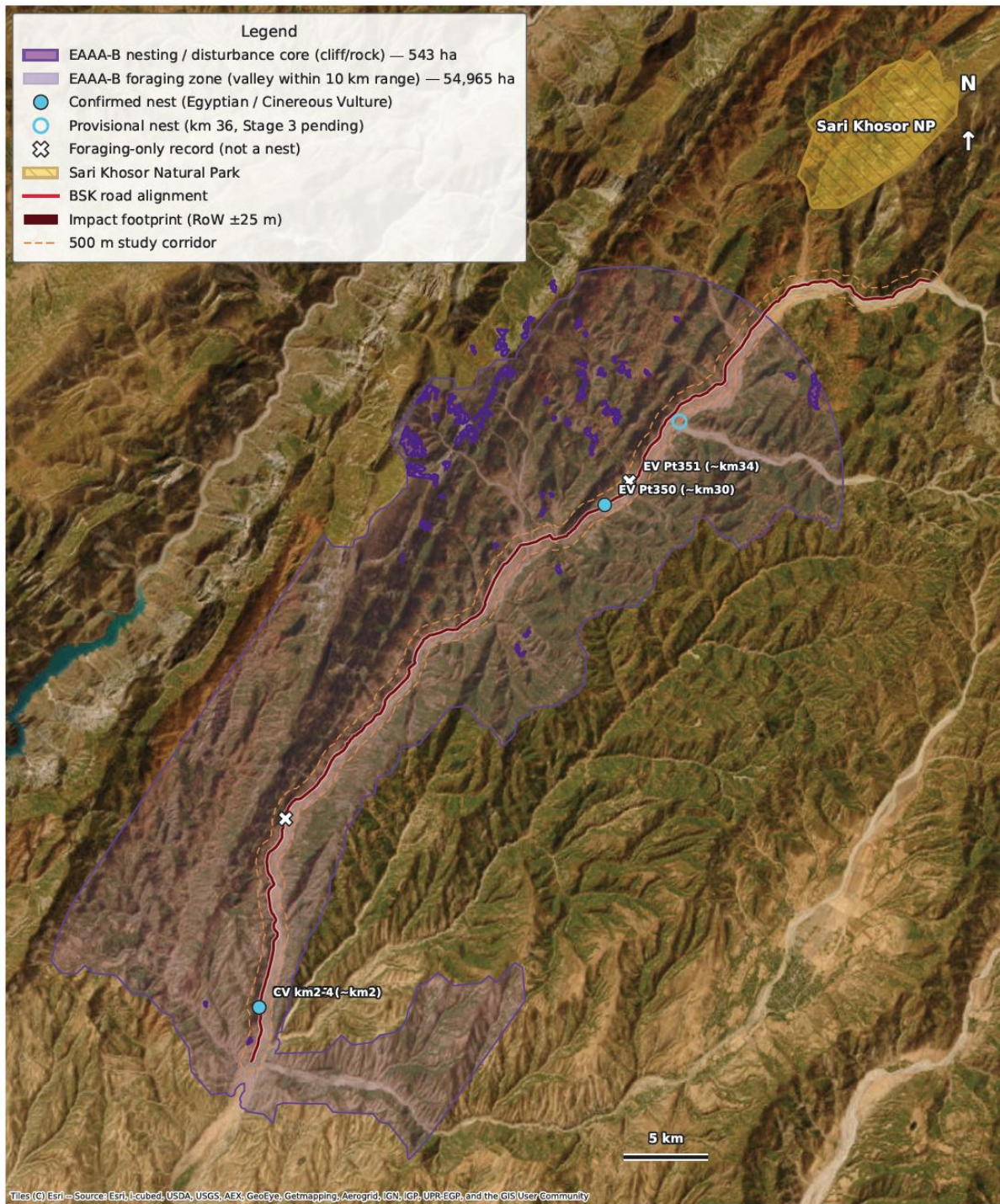
EAAA	Name	Extent	Target features / species	Ecological rationale
	Habitat EAAA	Muhammadsoleh (2026) recorded eleven tugai fragments along the riparian fringe (km 5–6, 14–15, 16–17, 21–22, 24–25, 28–30, 34–35, 36–37, 40–42, 49–51, 52–53); eight are currently georeferenced as polygons. Nested within EAAA C.	Potentially qualifying under Bern Convention Resolution 4 (G1.11 riverine willow woodland) and by analogue with EU Habitats Directive Annex I code 92A0 (<i>Salix alba</i> and <i>Populus alba</i> galleries). Used for: Section 14(i) habitat-type CH determination; habitat-extent threshold test against national tugai extent.	rather than against a metric buffer, in accordance with EBRD PR6 GN6 Table 1 (Criterion i). The habitat polygon is the analytical unit, with the surrounding catchment (EAAA C) providing the hydrological and ecological context within which the fragments persist.

Treatment of EAAA A (Wide-Ranging Mammal). Unlike the other feature-group EAAAs, EAAA A is treated as a narrative landscape-scale context rather than as a delineated polygon. This follows the proportionality direction in the EBRD PR6 Guidance Note and IFC PS6 GN6 (paragraph GN36), under which the area of analysis is scaled to the determination it supports. None of the wide-ranging mammals considered here — Snow Leopard, Bukhara Urial, Markhor, Brown Bear (*Ursus arctos isabellinus*), Eurasian Lynx and Grey Wolf — triggers a Critical Habitat determination under ESR 6 paragraph 14, and none was field-confirmed within the corridor during the May 2026 surveys; their occurrence in the wider landscape is inferred from IUCN range mapping and national Red Data listing. For these species the precautionary Priority Biodiversity Feature listings under Section 12(ii)b and Section 12(iii) are addressed through the project’s general mitigation hierarchy — including avoidance of continuous road-side fencing, retention of crossing permeability at watercourse and valley-floor passage points, and the operational-phase access-control and monitoring measures set out in Section 4.3 — rather than through a habitat-specific quantitative test that would require a delineated polygon. A mapped EAAA would not alter any determination for this feature group and is therefore not proportionate. The protected areas relied on for the qualitative connectivity assessment — the Dashti-Jum State Nature Reserve to the north and the Dangara Massif KBA to the south — are identified from IBAT / WDPA data and described in Section 3.

EAAA B (Cliff-Nesting Raptor) is delineated on ecological grounds as the cliff-face and rocky-outcrop nesting and foraging habitat of the Shurobdaryo valley and its immediately adjoining side-valleys, within the documented foraging range of the confirmed nests. This habitat-bounded definition follows the EBRD PR6 Guidance Note and IFC PS6 GN6 (paragraph GN36), which direct that raptor areas of analysis be bounded by confirmed nesting and roosting sites and their associated foraging habitat rather than by a generic distance from the project. Egyptian and Cinereous Vultures forage approximately 5–15 km from active nest sites; a 10 km foraging radius is therefore applied at each confirmed nest as a parameter of the habitat-bounded area — not as its definition — and the resulting zone is refined to the cliff-face and rocky-outcrop habitat within the valley system.

The EAAA is anchored on the cliff-face nests confirmed during the May 2026 Stage 1 and Stage 2 surveys (Khursand & Nugzar / Talbonov, 2026; Ergashev, 2026): six active Egyptian Vulture nests, all re-occupied at Stage 2, and one Cinereous Vulture nest at km 2–4. These confirmed nests support the nest-disturbance assessment and the Section 12(iii) PBF determination for Cinereous Vulture. The Barbary Falcon record (one individual at the cliff-face waypoint 38.55266 N / 69.88575 E) is an observation point rather than a confirmed nest and is carried as a foraging-range record only, not as a nest-disturbance receptor. The Bearded Vulture is treated provisionally pending Stage 3 occupancy confirmation; no nest coordinate is yet available and its inclusion is precautionary.

Figure 2: EAAA B (Cliff-Nesting Raptor)

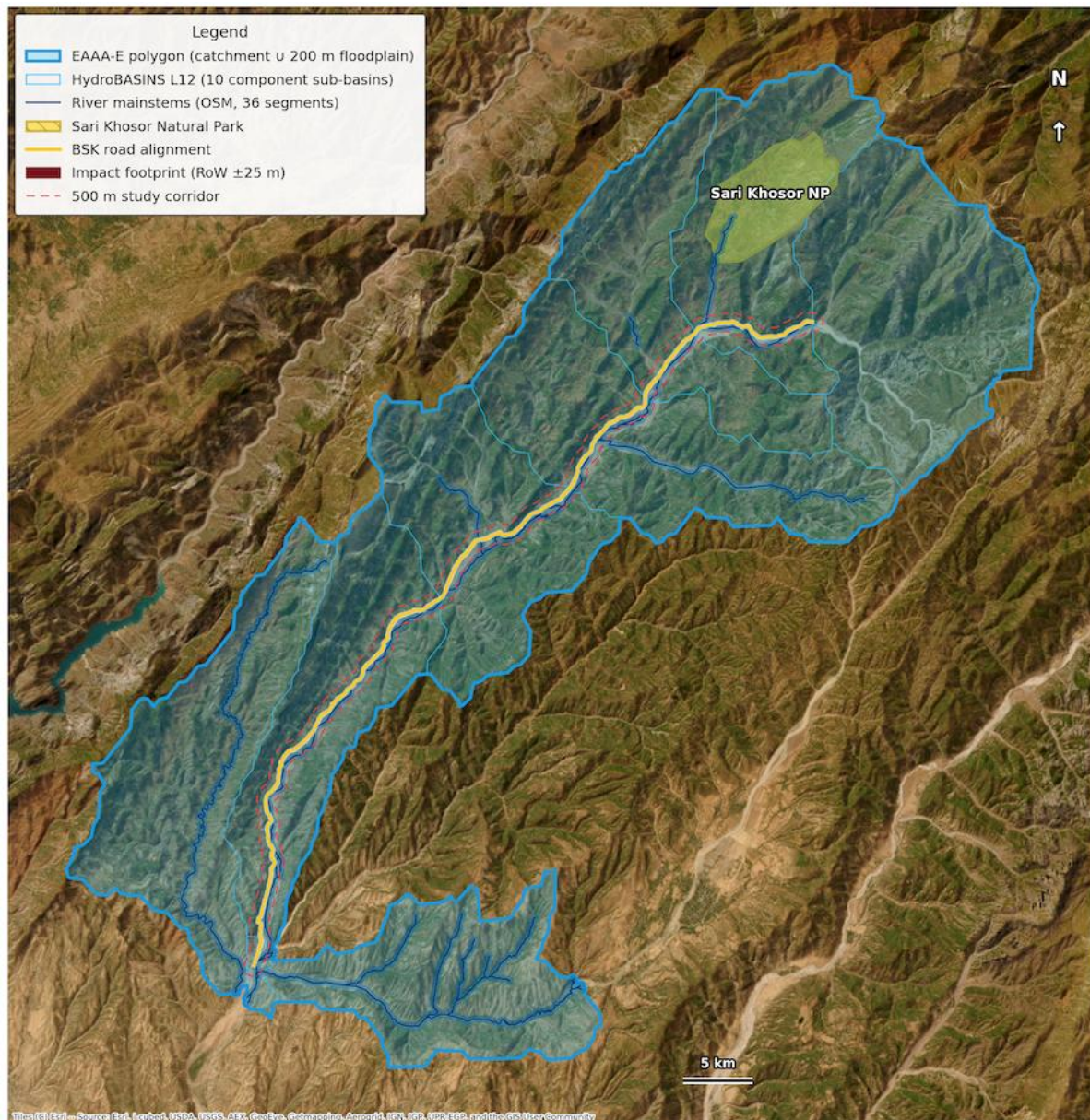


EAAA C (Riparian / Hydrological) is delineated on hydrological grounds as the Shurobdaryo sub-catchment within which the project's in-river and bankside effects propagate. The analytical unit is the set of HydroBASINS Level-12 sub-basins that intersect the 500 m study corridor; these are dissolved into a single polygon and combined with a 200 m lateral floodplain buffer along the active channel, giving an EAAA of approximately 1,086 km² bounded by the watershed divides on either side of the valley. This catchment-based extent — rather than a metric buffer of the alignment — captures the downstream reach over which sediment, water-quality and barrier effects act, the upstream source areas for fish and otter movement, and the riparian-dependent terrestrial community along



the floodplain. It supports the Section 12(ii) PBF determinations for the Eurasian Otter, Amu darya trout, Turkestan Barbel and gravel-bed habitats, and the downstream cumulative-effect assessment.

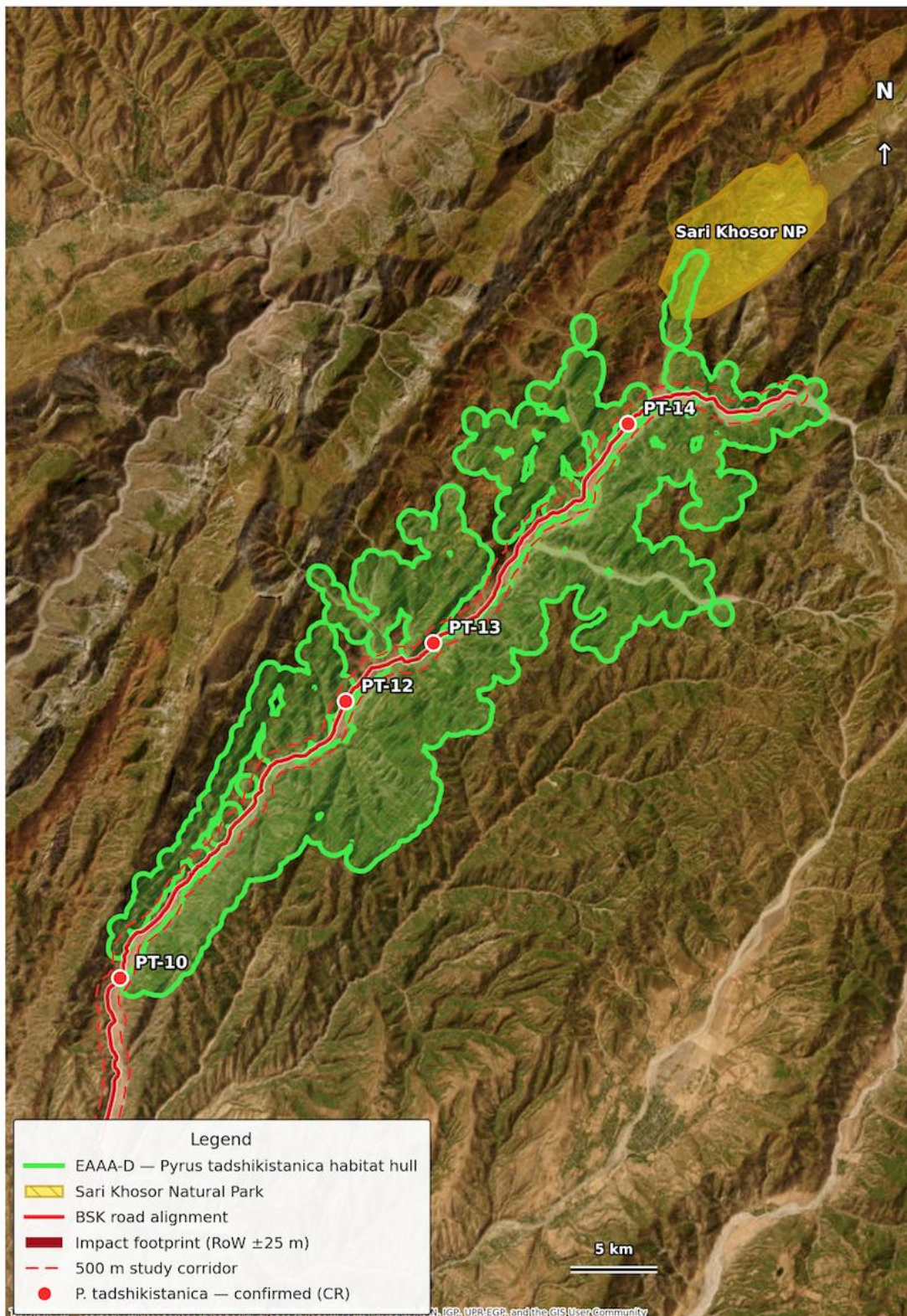
Figure 3: EAAA C (Riparian / Hydrological).



EAAA D (Sessile-Species) is delineated per species as a suitable-habitat hull rather than as a metric circle. For each confirmed record, the indicative suitable-habitat envelope — elevation 1,150–1,750 m, west- to south-west-facing aspect, slope $\geq 3^\circ$ and ESA WorldCover tree/shrub cover — is intersected with the qualifying sub-basin(s) of that record and dissolved per species; a 500 m study corridor is shown as the analysis buffer, not as the area of impact. This habitat-led delineation responds to the ecological grain at which Boboev (2022) maps wild fruit-tree populations in the analogue Dashtijum study area and avoids defining the area of analysis by a measured radius. The May 2026 corridor survey (Muhammadsoleh, 2026) confirmed six *Pyrus tadshikistanica* individuals across five localities and sixteen *P. korshinskyi* individuals across four localities, together with two *Malus sieversii* sites; the survey notes these counts are not exhaustive, which the precautionary Critical Habitat treatment reflects. EAAA D supports the Section 14(ii)c CH determination context, per-species application of the mitigation hierarchy, and offset accounting.



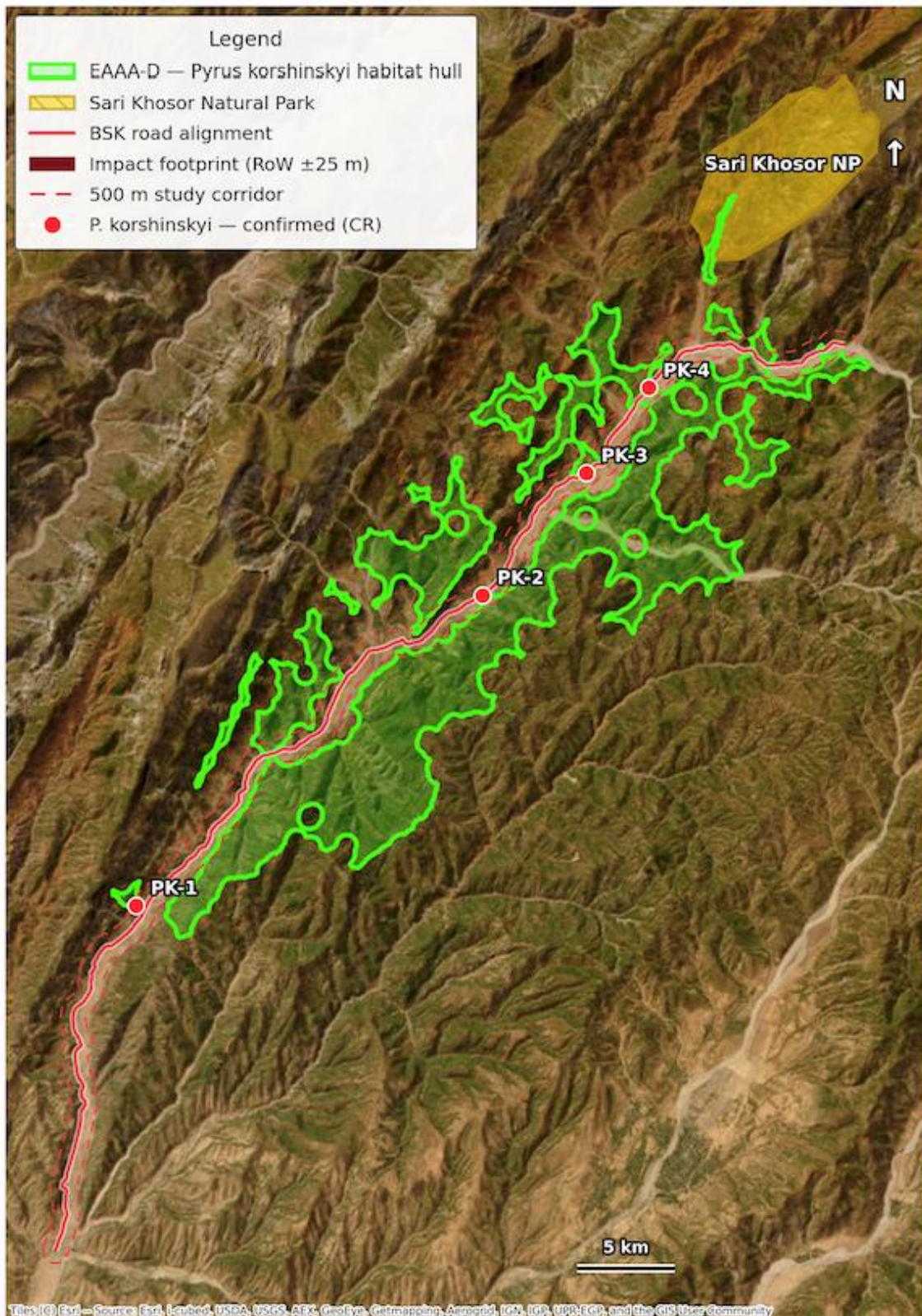
Figure 4: EAAA D — Ecologically Appropriate Area of Analysis, *Pyrus tadshikistanica*





Vista
Environment

Figure 5: EAAA D — Ecologically Appropriate Area of Analysis, *Pyrus korshinskyi*



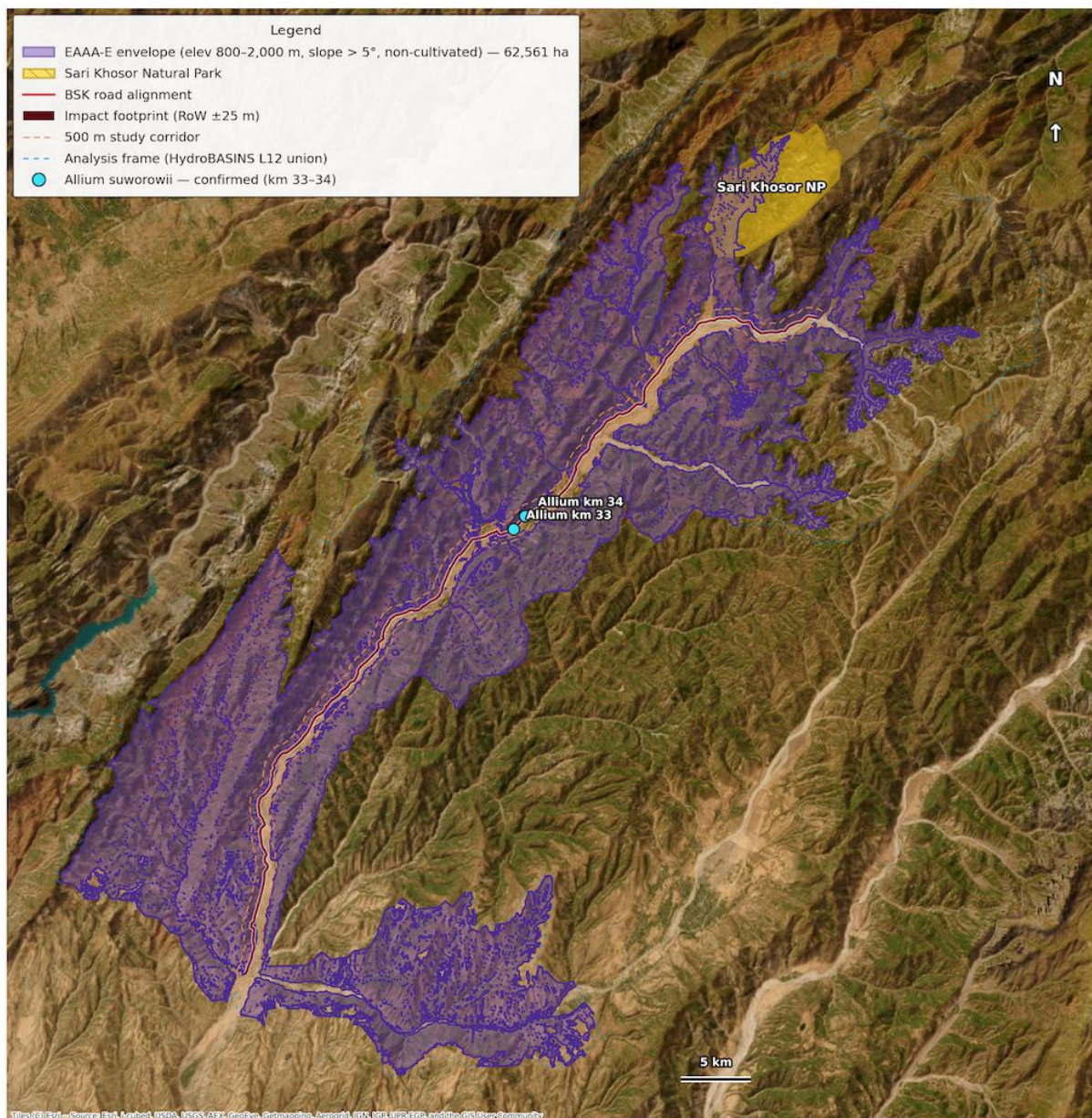
EAAA E (Herbaceous Red Book Species) is delineated as the habitat-and-elevation envelope within which the nationally listed herbaceous flora of the corridor occur, rather than by a metric buffer of the alignment. The envelope is defined by the intersection of three ecological criteria within the wider screening frame: the 800–2,000 m a.s.l. elevation band that brackets the recorded occurrences; slopes



greater than 5°, which excludes the valley-floor agricultural land where these species do not persist; and the absence of an intensive land-use signature, which excludes orchards and cultivated areas. This bounds the analysis to the habitat envelope of the species, consistent with the EBRD PR6 / IFC PS6 GN6 direction that the area of analysis be scaled to the ecological requirements of the feature.

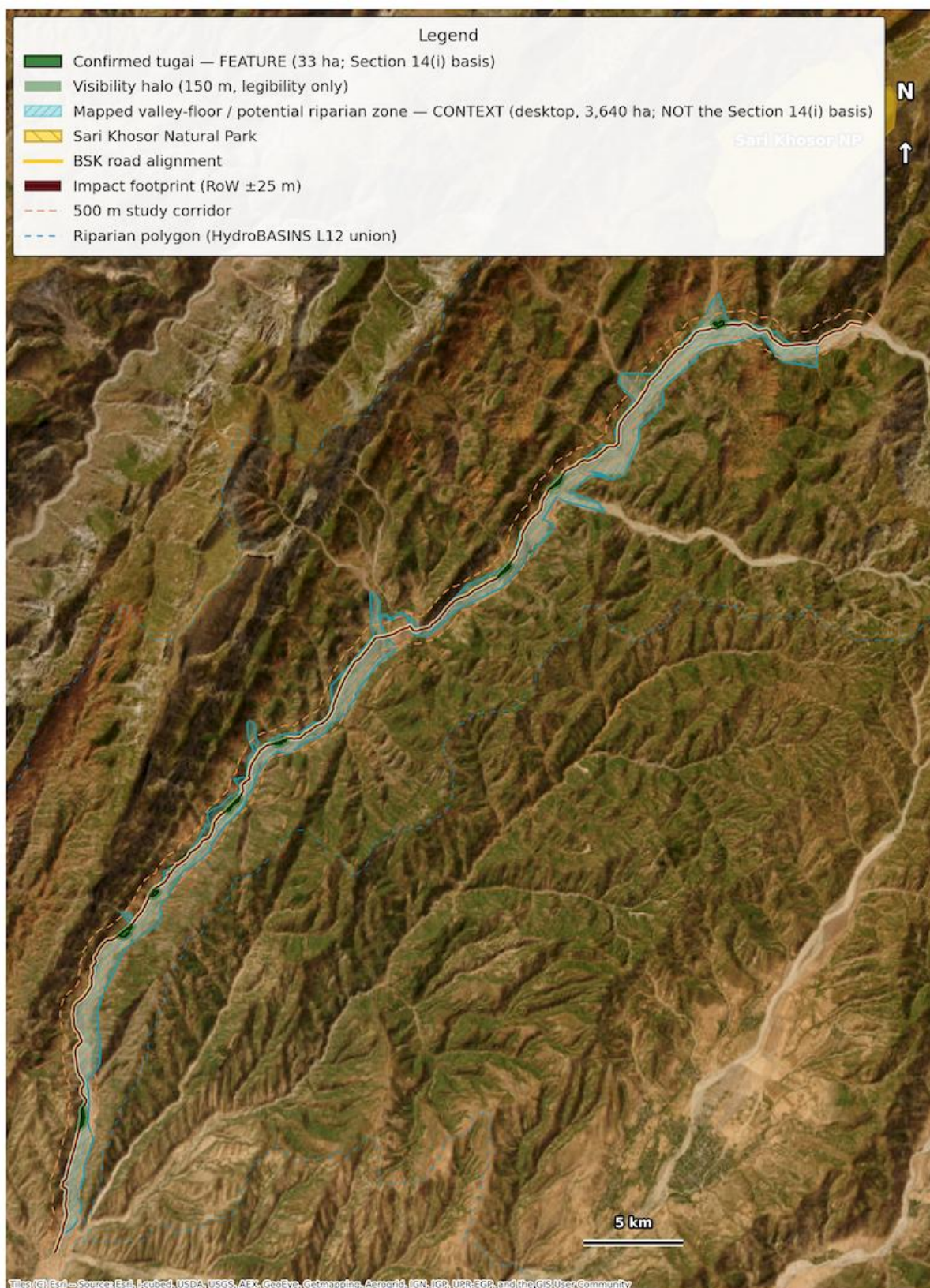
The envelope supports the PBF assessment for the nationally listed flora and provides Critical Habitat context under Section 14(ii)c where applicable. The confirmed feature anchoring the envelope is the *Allium suworowii* population recorded between km 33 and km 34 during the Muhammadsoleh (2026) survey. The same survey recorded representatives of the Red Data Book genera along the corridor — *Eremurus comosus*, *E. olgae* and *E. stenophyllus*, and *Juno bucharica* — concentrated in the lower foothill transects, which fall within the elevation-and-habitat envelope. Wild tulips were observed during the survey but were not georeferenced or identified to species; while the regional flora (Latifi) records Red Data Book *Tulipa* in the wider area, no Critically Endangered *Tulipa* population is yet confirmed for the corridor, and the genus is treated precautionarily pending targeted survey. The *Allium* record is carried as *Allium suworowii* per Muhammadsoleh (2026); a separate record of *A. stipitatum* at km 25 (Khanjarov) remains to be reconciled, and the determination is written to hold under either identification.

Figure 6: EAAA E (Herbaceous Red Book Species)



EAAA F (Tugai / Riparian-Woodland Habitat) is assessed at the habitat-extent level, the mapped tugai polygons themselves being the analytical unit (Table 1). Muhammadsoleh (2026) recorded eleven tugai fragments dominated by *Elaeagnus angustifolia*, *Tamarix ramosissima* and *Salix excelsa* along the riparian fringe; eight of these are currently georeferenced as polygons, totalling approximately 33 ha, and form the analytical unit for the threshold test pending georeferencing of the remaining three. Because tugai is a valley-bottom floodplain community confined to the active channel zone, its potential extent is bounded by the active-channel reach rather than by a metric buffer of the alignment. An active-channel envelope — derived as a 500 m buffer around the confirmed fragments, unioned and clipped to the hydrological EAAA (EAAA C) — is shown as context, representing the riparian reach within which additional tugai may occur and within which further survey is recommended; it is an upper-bound zone, not an estimate of tugai area. The Section 14(i) habitat-extent threshold test is conducted against the confirmed extent, not against the envelope.

Figure 7: EAAA F (Tugai / Riparian-Woodland Habitat)



EAAA assignment by feature and delineation method

The CR *Pyrus* Critical Habitat determinations under EBRD ESR 6 paragraph 14(ii)c are made against EAAA D (Sessile-Species, per-species habitat hulls), with the inclusive 50 km frame used for the IBAT screening test only. The Egyptian Vulture, Cinereous Vulture, Barbary Falcon and Bearded Vulture



nest-disturbance and foraging-range assessments are made against EAAA B (Cliff-Nesting Raptor), bounded by the cliff-face nesting and foraging habitat of the valley system rather than by the alignment. The Eurasian Otter, Amu darya trout, Turkestan Barbel and gravel-bed PBF assessments are made against EAAA C (Riparian / Hydrological), bounded by the Shurobdaryo catchment. Snow Leopard, Bukhara Urial, Markhor, Brown Bear, Eurasian Lynx and Grey Wolf landscape-connectivity and KBA-overlap considerations are addressed qualitatively against EAAA A (Wide-Ranging Mammal), a narrative landscape-scale context bounded by the Dashti-Jum reserve to the north and the Dangara Massif KBA to the south rather than a delineated polygon. Nationally Red-listed herbaceous species (*Allium suworowii*; *Eremurus* and *Juno* representatives; precautionary *Tulipa*) are assessed against EAAA E (Herbaceous Red Book), bounded by habitat and elevation. The tugai habitat-type assessment under Section 14(i) is made against EAAA F (Tugai / Riparian-Woodland Habitat), bounded by the mapped fragment polygons themselves. The Alliance for Zero Extinction screen applies the global irreplaceability test, which is independent of EAAA scale.

EAAA A is not delineated as a polygon; it is described qualitatively against the IBAT / WDPA perimeters of the Dashti-Jum reserve and the Dangara Massif KBA. EAAA B is delineated from the Stage 1 and Stage 2 raptor nest coordinates, refined to the cliff-face and rocky-outcrop habitat of the valley system. EAAA C is delineated as the union of HydroBASINS Level-12 sub-basins intersecting the 500 m study corridor, dissolved and combined with a 200 m floodplain buffer. EAAA D is delineated per species as the intersection of the suitable-habitat envelope with the qualifying sub-basins of each confirmed *Pyrus* and *Malus* record from the Muhammadsoleh (2026) corridor survey. EAAA E is delineated from the SRTM DEM and land-use raster overlays (elevation, slope and land-use class). EAAA F is delineated from the Muhammadsoleh (2026) tugai fragment register supplemented by aerial-imagery interpretation.

2.2.2 Data Collection and Sources

Preamble

The first stage of the approach is to define an effective baseline for biodiversity and ecosystems within the projects area of influence (AoI). This has been conducted through a combination of desk studies and more recently dedicated field survey.

The data sources are shown in Table 2.

Table 2. Primary Data Sources

Source	Dataset / Reference	Application
IBAT Biodiversity Risk Screen	PS6/ESS6 Report, Feb 2026 (Licence 27782-100852)	Protected areas, KBAs, IUCN Red List species within 1/10/50 km buffers
ESIA Scoping Report (v1.1)	March 2026	Project description, preliminary CH screening
Latifi, A. (2026) – Desk-Based Biodiversity Assessment [NEW – PRIMARY SOURCE]	EBRD PR6 aligned; literature-based flora and fauna inventory of Sari Khosor area	Comprehensive species lists; vegetation type confirmation; 31 Red Book species; endemic and relict flora; ichthyofauna; full fauna inventory
Shamsiddinov, F.A. (2023) – Aquatic Biology Report	Field survey: 4 sampling points along road corridor	Confirmed fish species, benthos community, water quality; Amu darya trout migration
State Institution for Specially Protected Natural Territories	Official letter, Dec 2024	Park location, distance from road, Bukhara Deer farm
Natural Park of Sari Khosor – official description	Govt. Decree No. 475/2005	Park characteristics, management objectives



Source	Dataset / Reference	Application
UNEP-WCMC / Protected Planet; IUCN Red List	Feb 2026; v2025-2	Protected area boundaries; global threatened species status
Muhammadsoleh (2026) – Botanical Survey, 8–10 May 2026	Transect survey along the full road corridor with a 10 m buffer, targeting Red Data Book tree species, rare Allium species and wild tulips	Field confirmation of <i>Pyrus tadshikistanica</i> (6 individuals) and <i>Pyrus korshinskyi</i> (16 individuals); two <i>Malus sieversii</i> sites; one <i>Allium suworowii</i> population
Khursand & Nugzar / Talbonov (2026) – Bird and Eurasian Otter Survey, 8–10 May 2026; Stage 2 Garibmamadov, Talbonov et al. (2026), 16–18 May	14 observation points along the 54 km corridor; 2-hour dwell time per point; standard bankside sign survey along the Shurobdaryo; LEK interviews. Stage 2 repeat at the same 14 points for occupancy confirmation	Field confirmation of 6 active Egyptian Vulture nests across the corridor (3 at 38.54289N/69.87254E, 2 at 38.55266N/69.88575E, 1 at 38.33192N/69.68716E within the km 2–4 works zone), all re-occupied in Stage 2; two further nests referenced in narrative at km 36 (38.57781N/69.91264E) are not tabulated in either Stage and are deferred to Stage 3. 1 individual Barbary Falcon recorded at the cliff-face waypoint 38.55266N/69.88575E in both Stage 1 (Point 7) and Stage 2 (Point 10). 2 individual Cinereous Vultures observed in flight at the cliff-face waypoint 38.41119N/69.70129E (~km 14). Eurasian Otter signs confirmed near Shahidon; negative results in the lower corridor
Ergashev (2026) – Raptor Monitoring and Community Consultation, 9–10 May 2026	14 observation points along the 56 km route; 6 structured LEK interviews with corridor residents. Reference data includes Tajik national breeding-population estimates for vulture and falcon PBFs	Independently confirms an active Egyptian Vulture nest and a separate active Cinereous Vulture nest at km 2–4 within the works zone (the Egyptian Vulture nest is the same nest tabulated at Talbonov Stage 1 Point 3, 38.33192N/69.68716E; the Cinereous Vulture nest is a separate receptor at the same cliff-face cluster). National population estimates: Cinereous Vulture 40–50 pairs; Bearded Vulture 70–80 individuals; Barbary Falcon 20–25 pairs. LEK corroboration of otter at Shahidon

IBAT Scoping

As noted, a full PS 6 IBAT search was conducted. This produced a listing of Protected Areas and Species potentially present within the project area based on the IUCN Global Red List of Risk of Extinction.

Focused Desk Studies

For species the primary resource of data is the report of Latifi (2026) which covers the area of Sari Khosor a wider area than the established EAAA and which includes the Protected Area of Sari Khosor National Park. This report highlighted the range restricted and endemic species within the project area and species on the national Red Data list which may be present within the EAAA.

Additional information was derived from other databases of Protected Areas and Consultation with the Tajik State Institution for Specially Protected Areas. General searches on autecology and demographics of species possibly present within the EAAA were conducted through English language internet searches.

Field Studies

Field work for aquatic habitats within the Shurobdaryo valley was conducted in 2025. This conducted sampling primarily for fish but also recorded at a higher scale invertebrates. Sampling was conducted



through physical catching of fish and sampling of substrates and netting of invertebrates. Some basic water quality parameters were also taken, including temperature, and clarity using a Secchi disc.

As of March 2026, a program of field work focused on terrestrial habitats and directed towards species and ecosystems has commenced.

Assessment Criteria

For EBRD the requirements of determination of CH and PBFs, the criteria classes are set out in ESR 6 in Paragraph 12 i to iv, namely

- Threatened species
- Vulnerable species
- Significant biodiversity features identified by a broad set of stakeholders or governments
- Ecological structure and functions

Based on Table 1 of the ESR 6 Guidance the criteria considered within this CH and PBF assessment are shown below in Table 3. Tajikistan is not a member state of the European Union, nor is it an applicant so the criteria set out in Table 1 of the guidance which refers to EU Directives do not apply for the purposes of PBF assessment. However, Tajikistan is a signatory to the Bern Convention, therefore habitats and species set out in Annex 1 of the Bern Convention Revised Resolution 4 and Annex 1 of the Revised list of species for Resolution 6 have been utilised.

Table 3. Summary of Criterion Used for Determination of CH and PBF

Criterion	Priority Biodiversity Feature	Critical Habitats
Priority Ecosystems		
1. Threatened Ecosystems/habitats	a. Habitat types listed in Annex 1 of the Bern Convention Resolution 4 b. Ecosystem types listed in IUCN Red List of Ecosystems as CR or EN	ESR 6 paragraph 14 (i) a. Habitat type listed in Annex 1 of EU Habitats Directive marked as "priority habitat type" b. EAAA ≥5 per cent of global extent of an ecosystem type with IUCN status of CR or EN c. EAAA for ecosystem/habitat determined to be of high priority for conservation by national systematic conservation planning
Priority Species and their Habitats		
Threatened Species	ESR 6 paragraph 12 (ii) a. Species in the area of impact listed in Annex I of Resolution 6 of Bern Convention b. Species in the area of impact with IUCN global Red List status of VU, EN or CR c. Species in the area of impact with national or regional status of EN or CR	ESR 6 paragraph 14 (ii) a. EAAA supports species listed in Annex II of Habitats Directive marked as "priority species" b. EAAA supports ≥ 0.5 per cent of the global population AND ≥ 5 reproductive units of a CR or EN species, or EAAA supports globally significant population of VU species necessary to prevent a change of IUCN Red List status to EN or CR c. EAAA for important concentrations of species with national or regional status of EN or CR



Range restricted species - Area of Occurrence <100,000 km ²		
All range restricted species	All range restricted species in the area of impact	EAAA regularly holds ≥ 10 per cent of global population AND ≥ 10 reproductive units of the species
Migratory and congregatory species		
a. All migratory species b. All congregatory species	All migratory species in the area of impact	a. EAAA sustains, on a cyclical or otherwise regular basis, ≥ 1 per cent of the global population at any point of the species' lifecycle b. EAAA predictably supports ≥ 10 per cent of global population during periods of environmental stress

The assessment has adopted a precautionary approach where data is incomplete or uncertain, or project details are absent.



3. Critical Habitat and PBF Assessment

3.1. Relevant Baseline

3.1.1. Overview

The project is located in a river valley. The Shurobdaryo flows in a generally north to south direction. The river is highly braided, with evidence of changes in active channels over the years. The dynamics of the riverbed has led to a river bottom that in some places is nearly 1,000 m wide. This is particularly noticeable in the northern and southern parts of the project area. In the central area the riverbed width is reduced to about 50 m. Along its length side tributaries enter the main channel and in these locations the river width is increased. Figure 8 shows typical views of the river valley within the project area.

The north end of the project is located at an elevation of approximately 1,625 m and the southern extent of the project lies at an elevation of approximately 920 m. This represents a fall of approximately 700 m over 56 km giving an average gradient of 1.25. The fall is mostly uniform as shown in Figure 9.

Figure 8. Typical Views of River Valley





Figure 9. Gradient of Road in River Valley



The slopes of the river valley rise initially rise gently but then steepen towards ridge lines of over 2,000 m on the west bank and 1,800 m on the east bank. On the west bank there is evidence of minor erosion of soils.

Land use along the alignment is mainly open areas, with limited tree cover close to the project area. These areas are mainly grazed by domesticated animals. There are a number of small towns or villages along the route and within and around these areas are associated land uses of cultivation, including arable and orchards.

3.1.2. Key Biodiversity and Protected Areas

Key Biodiversity Areas

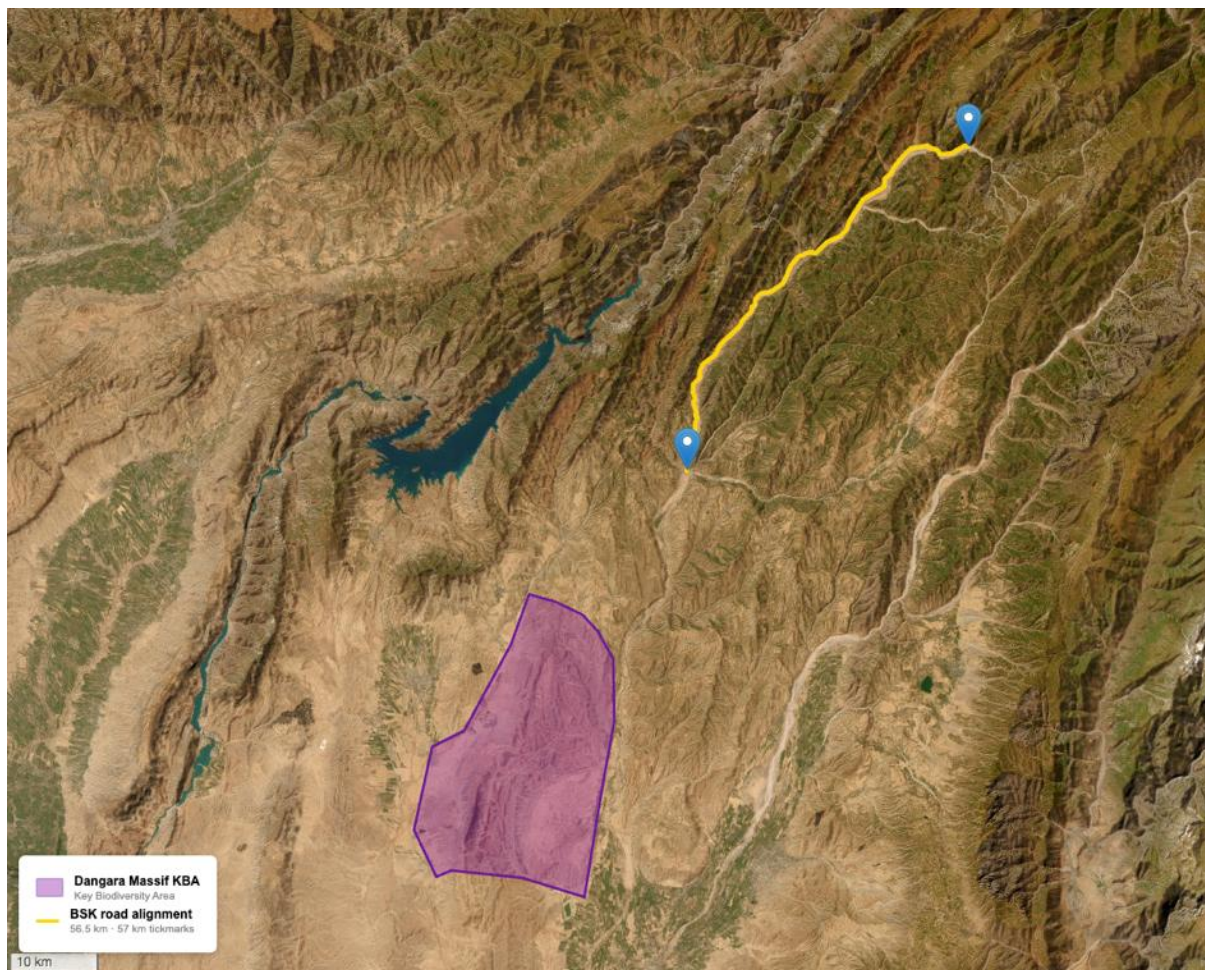
The IBAT search indicated that there were a number of Key Biodiversity and Protected Areas present within 50 km of the project area. Table 4 shows the KBAs within 1, 10 and 50 km of the project area.

Table 4. IBAT Key Biodiversity Areas (KBAs) within Project Buffers

KBA Name	Buffer	KBA Trigger Criteria	Notes
No KBA recorded	1 km	–	No KBA intersects the 1 km buffer of the site centre.
No KBA recorded	10 km	–	No KBA intersects the 10 km buffer.
Dangara Massif KBA	50 km	Species-based (threatened species)	One KBA within the 50 km buffer. Relevant for wide ranging species connectivity assessment (Snow Leopard, raptors, large ungulates).

The location of Dangara Massif KBA is shown in Figure 10.

Figure 10. Location of Dangara Massif KBA



Source: Basemap from IBAT

Alliance for Zero Extinction (AZE)

Alliance for Zero Extinction (AZE) sites are a subset of KBAs identified under KBA criterion A1e: sites holding effectively the entire global population ($\geq 95\%$) of one or more Critically Endangered or Endangered species (AZE, 2023; KBA Standards and Appeals Committee, 2022). All confirmed AZE sites are KBAs. AZE screening is undertaken as a separate test alongside the EBRD ESR6 Criterion 1 assessment, because (i) the May 2026 surveys field-confirmed two CR species within the corridor (*Pyrus tadshikistanica* and *P. korshinskyi*) which are AZE-eligible by endangerment status, and (ii) the nearest AZE-relevant site — the Dashti-Jum State Nature Reserve, an IBA on the same Darvaz/Hazrati Shoh ridge as the corridor — lies within the wider EAAA and requires positive screening for connectivity and overlap.

Three AZE principles are screened in turn:

- **Endangerment.** The corridor contains two species globally CR on the IUCN Red List (*Pyrus tadshikistanica*, *P. korshinskyi*). *Malus sieversii* is EN nationally but VU globally; AZE applies the global Red List status, which does not qualify. The endangerment principle is met for the two CR *Pyrus* species; the screen proceeds to principle 2 for these species.
- **Irreplaceability ($\geq 95\%$ of global population).** For *P. tadshikistanica*, Boboev (2022) records approximately 300 fruit-bearing trees in the Dashtijum/Kulob zone alone, with the species recorded from additional localities including the Sari Khosor area, Ob-Hingou and Obi-Niou river basins, the Vakhsh Ridge, Khovaling and Baljuvon, and the



Khazratishokh and Darvaz ranges (Boboev, 2022; Eastwood, Lazkov & Newton, 2009; Zapryagaeva, 1964). The 6 corridor individuals represent approximately 2% of the closest comparable national reference population and far less than 95% of the global total. The 95% irreplaceability test **is not met** for this species. For *P. korshinskyi*, the species occurs in four countries (Tajikistan, Uzbekistan, Kyrgyzstan, northern Afghanistan), with multiple confirmed populations including approximately 100 mature trees in a single Kyrgyz population, fragmented populations across the Pamir-Alai and Western Tien Shan, and additional locations in the Dashtijum reserve (Boboev, 2022; Eastwood, Lazkov & Newton, 2009). The 16 corridor individuals represent a small fraction of the global population. The 95% irreplaceability test **is not met** for this species either. Both species are nevertheless flagged as potential AZE trigger species at the global level under the BGCI tree-AZE methodology (Davies, Starnes & Rivers, 2024) and may yet trigger an AZE site elsewhere in their range — most plausibly within the Dashtijum reserve, given the Boboev (2022) population concentration.

- **Discreteness.** The BSK road corridor is a linear feature ~56 km in length and could in principle be delineated as a candidate AZE site by a definable boundary. Given that principle 2 fails for both candidate species, however, this principle is not separately tested for the corridor.

AZE screening conclusion. The BSK project corridor does not meet the AZE criteria and does not qualify as an AZE site or an A1e KBA. This determination does not reduce the Critical Habitat obligations under EBRD ESR6 paragraph 14(ii)c, which are determined on a separate threshold (important national concentration of a CR or EN species, not global irreplaceability). The Dashti-Jum State Nature Reserve, located 30–40 km from the closest corridor chainages on the same Darvaz/Hazrati Shoh ridge system, is a recognised IBA (BirdLife International) and a plausible candidate AZE site for both CR *Pyrus* species in light of the Boboev (2022) population data; the project corridor does not overlap with the reserve. The Biodiversity Offset Programme (Section 4 and Recommendations) provides an opportunity to support conservation efforts at the Dashtijum population — identified by Boboev as the densest known concentration of *P. tadshikistanica* — through the active BGCI/Kulob Botanic Garden Darwin Initiative project, whose Tajikistan focal areas include the Dashtijum reserve directly.

Protected Areas

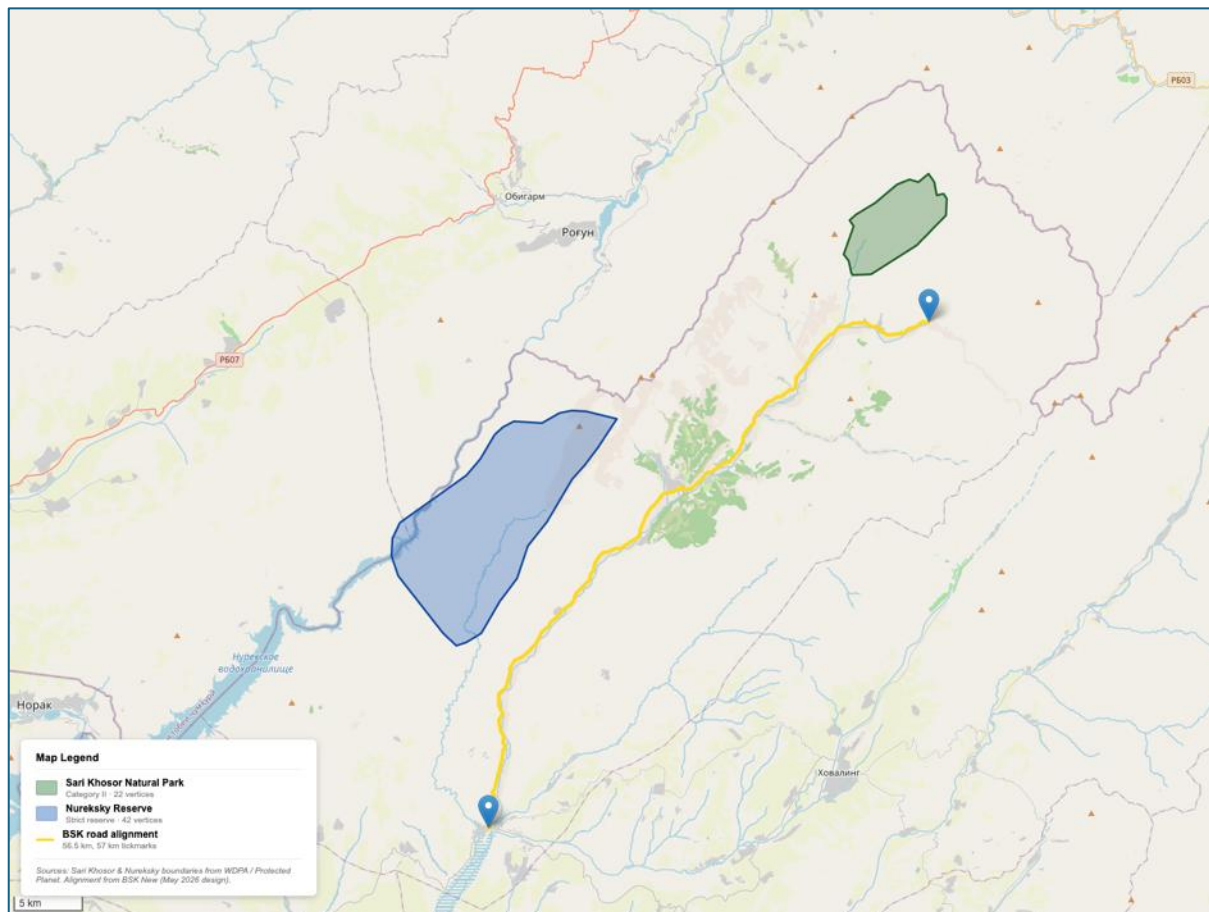
Table 5 provides a summary of Protected Areas within 1, 10 and 50 km of the project. The location of these is shown in Figure 11.

Table 5. IBAT Protected Areas within Project Buffers

Protected Area	IUCN Cat.	Designation	Buffer	Notes
Sari Khosor Natural Park	II*	National Natural Park	~4-5 km	Primary biodiversity receptor. Bukhara Deer facility adjacent to road. Survey Point 1 (Shamsiddinov) near park boundary at km 35.
Nurek State Reserve	IV	State Reserve	~10 km (10 km buffer)	Within 10 km IBAT buffer.
Romit State Reserve	Ia	Strict Nature Reserve	~50 km	Most protective IUCN category; within 50 km buffer.
Childukhtaronsky State Reserve	IV	State Reserve	~50 km	Within 50 km buffer.

* IBAT records Sari Khosor Natural Park as IUCN Category IV. Government Decree No. 475 (2005) designates it a Natural Park equivalent to IUCN Category II. This assessment uses Category II as the operative classification throughout.

Figure 11. Location of Protected Areas



Source: Basemap from Google Earth – Shape files from World Database for Protected Areas / CEP

Bukhara Deer Nursery

A letter from CEP (December 2024) draws attention to an important additional feature directly adjacent to the road corridor: a 3-hectare Bukhara Deer (*Cervus hanglu bactrianus*) breeding facility located at Dashtaro village, near km 35 of the alignment. This facility operates under the superintendence of Sari Khosor Natural Park and accordingly carries legal protected status as a remote object of the Park system.

Cervus hanglu bactrianus (Bukhara Deer) is listed as Critically Endangered (CR) on the IUCN Red List. The CEP letter explicitly requests that potential construction and operational impacts on the facility be taken into account during project planning. The facility is a confirmed, spatially defined receptor for a CR species and is treated as a Priority Biodiversity Feature under the CHA.

Figure 12: Location of Bukhara Deer Nursery



3.1.3. Habitats

The major habitats present within the Sari Khosor region were reviewed and listed by a national biodiversity specialist in a report commissioned for the project. The report is presented as Appendix 1. The habitats likely to be present as set out below.

Broadleaf forests

Formed by thermophilic tree and shrub species including walnut (*Juglans regia*), maple (*Acer turkestanicum*), plane tree (*Platanus orientalis*), wild apple (*Malus sieversii*), as well as shrubs such as cotoneaster (*Cotoneaster* spp.), rose (*Rosa canina*), barberry (*Berberis* spp.) and honeysuckle (*Lonicera* spp.). Herbaceous species include *Prangos pobularia*, *Ferula kuhistanica*, *Lavatera cashemiriana*, *Impatiens parviflora*, *Dactylis glomerata*, *Dictamnus tadshikorum* and *Haplophyllum* spp.

Mesophilic deciduous shrub communities (800–2800 masl)

Ecologically similar to broadleaf forests and distributed throughout mid-mountain and upper foothill zones. Characteristic species include wild roses (*Rosa* spp.), *Aflautunia ulmifolia* and *Exochorda alberti*.

Poplar forests (800–3000 masl)

Formed by hygrophilous and mesophilic tree and shrub species including *Populus bachofenii*, *P. tadshikistanica*, *P. konjilaliana*, as well as *Fraxinus sogdiana*, *Hippophae rhamnoides* and *Salix* spp.

Tugai forests (500–1600 masl)

Formed by thermophilic and moisture-loving species including *Elaeagnus angustifolia*, *Tamarix leptostachya*, *T. ramosissima* and *Hippophae rhamnoides*.

Sparse woodlands (shiblyak) (800–1600 masl)

Dominated by xerophytic and hemixerophytic species including pistachio (*Pistacia vera*), almond (*Amygdalus bucharica*), hackberry (*Celtis caucasica*), Judas tree (*Cercis griffithii*) and hawthorn (*Crataegus* spp.).

Juniper forests (1200–3000 masl)

Represented by several species of juniper (*Juniperus seravshanica*) often associated with *Acer turkestanicum* and *Populus tadshikistanica*.

Herbaceous communities (800–2000 masl)



Composed of perennial grasses and semi-shrubs including *Origanum tyttanthum*, *Hypericum perforatum*, *Dracocephalum* spp. and *Ziziphora pamiroalaica*.

Cushion plant communities (1000–4000 masl)

High-altitude cold-resistant vegetation represented mainly by *Acantholimon* and *Onobrychis* species.

Semi-savannas (800–1400 masl)

Dominated by mesophilic and hemixerophytic perennial and annual plants including *Agrostis*, *Elytrigia*, *Roegneria* and *Polygonum coriarium*.

Meadow vegetation (2400–3000 masl)

Composed of perennial grasses and forbs including *Alopecurus*, *Agrostis*, *Elytrigia* and *Ligularia* spp.

Within the Sari Khosor area, 20 rare plant species included in the Red Data Book of the Republic of Tajikistan (2024) have been identified, including representatives of the genera:

- *Tulipa*
- *Eremurus*
- *Juno*
- *Iris*
- *Allium*

These species occur in highly limited habitats. The main causes of decline include land development, livestock grazing and collection of medicinal, ornamental and edible plants.

3.1.4. Species

IBAT Results

The initial species list potentially present within the study area was obtained from the IBAT PS6 search. This search sets a 50 km buffer around the feature of interest and cross references to the IUCN Red List of species producing a long list of species which may be present within the study area including the 50 km buffer.

The initial IBAT listing included 412 species which are presented in Table 6. The final column of the table shows the status of each species as a PBF based on a search of the European Environment Agency's database. As indicated by EBRD Performance Requirement 6, PBF's are those species which are listed in the Revised Annex 1 for Resolution 6 of the Bern Convention for countries which are not EU members but are signatories to the Bern Convention. Annex 1 relates to species which dedicated habitat conservation measures are required. It is noted that some species receive protection under different annexes of the convention and other instruments such as the Convention on Migratory Species (CMS) and whilst they do not qualify as PBFs they are addressed in the project ESIA where appropriate.

Table 6. Long List of Species from IBAT PS 6 Search

Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Pseudoscaphirhynchus hermanni</i>	Small Amu-Darya Shovelnose Sturgeon	CR	No
<i>Pseudoscaphirhynchus kaufmanni</i>	Amu-Darya Shovelnose Sturgeon	CR	No
<i>Alsophylax tadjikiensis</i>	Tadjikistan Even-fingered Gecko	CR	No
<i>Vanellus gregarius</i>	Sociable Lapwing	CR	Yes
<i>Calidris tenuirostris</i>	Great Knot	EN	No
<i>Falco cherrug</i>	Saker Falcon	EN	Yes

¹ Based on Bern Convention Annex 1 of Revised Resolution 6

Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Haliaeetus leucoryphus</i>	Pallas's Fish-eagle	EN	Yes
<i>Neophron percnopterus</i>	Egyptian Vulture	EN	Yes
<i>Oxyura leucocephala</i>	White-headed Duck	EN	Yes
<i>Vormela peregusna</i>	Marbled Polecat	VU	Yes
<i>Picipes rhizophilus</i>	Steppengras-Schwarzfußporling	VU	No
<i>Pluvialis squatarola</i>	Grey Plover	VU	No
<i>Calidris falcinellus</i>	Broad-billed Sandpiper	VU	No
<i>Panthera uncia</i>	Snow Leopard	VU	No
<i>Aquila heliaca</i>	Eastern Imperial Eagle	VU	Yes
<i>Clanga clanga</i>	Greater Spotted Eagle	VU	Yes ²
<i>Calidris ferruginea</i>	Curlew Sandpiper	VU	No
<i>Tulipa praestans</i>	A plant species	VU	No
<i>Tulipa anisophylla</i>	A plant species	VU	No
<i>Aythya ferina</i>	Common Pochard	VU	No
<i>Ovis vignei</i>	Urial	VU	No
<i>Streptopelia turtur</i>	European Turtle-dove	VU	No
<i>Columba eversmanni</i>	Yellow-eyed Pigeon	VU	No
<i>Chlamydotis macqueenii</i>	Asian Houbara	VU	No
<i>Marmaronetta angustirostris</i>	Marbled Duck	NT	Yes
<i>Circus macrourus</i>	Pallid Harrier	NT	Yes
<i>Aegypius monachus</i>	Cinereous Vulture	NT	Yes
<i>Gyps himalayensis</i>	Himalayan Griffon	NT	No
<i>Aythya nyroca</i>	Ferruginous Duck	NT	Yes
<i>Gypaetus barbatus</i>	Bearded Vulture	NT	Yes
<i>Tetrax tetrax</i>	Little Bustard	NT	Yes
<i>Gallinago media</i>	Great Snipe	NT	Yes
<i>Limosa limosa</i>	Black-tailed Godwit	NT	No
<i>Limosa lapponica</i>	Bar-tailed Godwit	NT	Yes
<i>Numenius arquata</i>	Eurasian Curlew	NT	No
<i>Calidris alpina</i>	Dunlin	NT	No
<i>Calidris canutus</i>	Red Knot	NT	No
<i>Arenaria interpres</i>	Ruddy Turnstone	NT	No
<i>Tulipa tubergeniana</i>	A plant species	NT	No
<i>Lutra lutra</i>	Eurasian Otter	NT	Yes
<i>Pelecanus crispus</i>	Dalmatian Pelican	NT	Yes
<i>Bucanetes mongolicus</i>	Mongolian Finch	LC	No
<i>Monticola solitarius</i>	Blue Rock-thrush	LC	No
<i>Motacilla citreola</i>	Citrine Wagtail	LC	No
<i>Motacilla alba</i>	White Wagtail	LC	No
<i>Petronia petronia</i>	Rock Sparrow	LC	No
<i>Passer montanus</i>	Eurasian Tree Sparrow	LC	No
<i>Eremophila alpestris</i>	Horned Lark	LC	No
<i>Galerida cristata</i>	Crested Lark	LC	No

² Listed as *Aquila clanga* in Bern Convention



Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Calandrella acutirostris</i>	Hume's Lark	LC	No
<i>Melanocorypha bimaculata</i>	Bimaculated Lark	LC	No
<i>Ammomanes deserti</i>	Desert Lark	LC	No
<i>Myophonus caeruleus</i>	Blue Whistling-thrush	LC	No
<i>Curruca mystacea</i>	Menetries's Warbler	LC	No
<i>Turdus viscivorus</i>	Mistle Thrush	LC	No
<i>Curruca nisoria</i>	Barred Warbler	LC	No
<i>Curruca communis</i>	Common Whitethroat	LC	No
<i>Muscicapa striata</i>	Spotted Flycatcher	LC	No
<i>Acrocephalus scirpaceus</i>	Common Reed-warbler	LC	No
<i>Leucosticte nemoricola</i>	Plain Mountain-finch	LC	No
<i>Linaria cannabina</i>	Common Linnet	LC	No
<i>Linaria flavirostris</i>	Twite	LC	No
<i>Spinus spinus</i>	Eurasian Siskin	LC	No
<i>Serinus pusillus</i>	Red-fronted Serin	LC	No
<i>Cinclus cinclus</i>	White-throated Dipper	LC	No
<i>Fringilla montifringilla</i>	Brambling	LC	No
<i>Cinclus pallasii</i>	Brown Dipper	LC	No
<i>Monticola saxatilis</i>	Rufous-tailed Rock-thrush	LC	No
<i>Fringilla coelebs</i>	Common Chaffinch	LC	No
<i>Prunella atrogularis</i>	Black-throated Accentor	LC	No
<i>Prunella fulvescens</i>	Brown Accentor	LC	No
<i>Prunella himalayana</i>	Altai Accentor	LC	No
<i>Prunella collaris</i>	Alpine Accentor	LC	No
<i>Anthus spinoletta</i>	Water Pipit	LC	No
<i>Anthus pratensis</i>	Meadow Pipit	LC	No
<i>Anthus trivialis</i>	Tree Pipit	LC	No
<i>Anthus campestris</i>	Tawny Pipit	LC	Yes
<i>Motacilla cinerea</i>	Grey Wagtail	LC	No
<i>Acrocephalus melanopogon</i>	Moustached Warbler	LC	No
<i>Phoenicurus leucocephalus</i>	White-capped Water-redstart	LC	No
<i>Cettia cetti</i>	Cetti's Warbler	LC	No
<i>Hirundo rustica</i>	Barn Swallow	LC	No
<i>Enicurus scouleri</i>	Little Forktail	LC	No
<i>Ptyonoprogne rupestris</i>	Eurasian Crag Martin	LC	No
<i>Periparus rufonuchalis</i>	Rufous-naped Tit	LC	No
<i>Certhia himalayana</i>	Bar-tailed Treecreeper	LC	No
<i>Tichodroma muraria</i>	Wallcreeper	LC	No
<i>Saxicola torquatus</i>	Common Stonechat	LC	No
<i>Saxicola caprata</i>	Pied Bushchat	LC	No
<i>Oenanthe picata</i>	Variable Wheatear	LC	No
<i>Oenanthe pleschanka</i>	Pied Wheatear	LC	Yes
<i>Sitta tephronota</i>	Eastern Rock Nuthatch	LC	No
<i>Oenanthe isabellina</i>	Isabelline Wheatear	LC	No
<i>Acridotheres tristis</i>	Common Myna	LC	No

Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Pastor roseus</i>	Rosy Starling	LC	No
<i>Sturnus vulgaris</i>	Common Starling	LC	No
<i>Sylvia borin</i>	Garden Warbler	LC	No
<i>Panurus biarmicus</i>	Bearded Reedling	LC	No
<i>Phylloscopus occipitalis</i>	Western Crowned Leaf-warbler	LC	No
<i>Phylloscopus griseolus</i>	Sulphur-bellied Warbler	LC	No
<i>Phylloscopus neglectus</i>	Plain Leaf-warbler	LC	No
<i>Phylloscopus trochilus</i>	Willow Warbler	LC	No
<i>Ficedula ruficauda</i>	Rusty-tailed Flycatcher	LC	No
<i>Leptopoeile sophiae</i>	White-browed Tit-warbler	LC	No
<i>Luscinia megarhynchos</i>	Common Nightingale	LC	No
<i>Luscinia svecica</i>	Bluethroat	LC	Yes
<i>Hippolais languida</i>	Upcher's Warbler	LC	No
<i>Iduna caligata</i>	Booted Warbler	LC	No
<i>Irania gutturalis</i>	White-throated Robin	LC	No
<i>Cercotrichas galactotes</i>	Rufous-tailed Scrub-robin	LC	No
<i>Phoenicurus erythronotus</i>	Eversmann's Redstart	LC	No
<i>Acrocephalus dumetorum</i>	Blyth's Reed-warbler	LC	No
<i>Phoenicurus ochruros</i>	Black Redstart	LC	No
<i>Phoenicurus phoenicurus</i>	Common Redstart	LC	No
<i>Phoenicurus erythrogastrus</i>	White-winged Redstart	LC	No
<i>Felis lybica</i>	Afro-Asiatic Wildcat	LC	No
<i>Montagnea radiosa</i>	Květká písečná	LC	No
<i>Parnassius tianschanicus</i>	Large Keeled Apollo	LC	No
<i>Parnassius honrathi</i>	Honrath's Apollo	LC	No
<i>Parnassius actius</i>	Scarce Red Apollo	LC	No
<i>Hierodula tenuidentata</i>	Giant Asian Mantis	LC	No
<i>Canis aureus</i>	Golden Jackal	LC	No
<i>Turdus merula</i>	Eurasian Blackbird	LC	No
<i>Troglodytes troglodytes</i>	Northern Wren	LC	No
<i>Phylloscopus trochiloides</i>	Greenish Warbler	LC	No
<i>Motacilla flava</i>	Western Yellow Wagtail	LC	No
<i>Montifringilla nivalis</i>	White-winged Snowfinch	LC	No
<i>Passer domesticus</i>	House Sparrow	LC	No
<i>Riparia riparia</i>	Collared Sand Martin	LC	No
<i>Cecropis daurica</i>	Red-rumped Swallow	LC	No
<i>Delichon urbicum</i>	Northern House Martin	LC	No
<i>Oenanthe oenanthe</i>	Northern Wheatear	LC	No
<i>Calliope pectoralis</i>	Himalayan Rubythroat	LC	No
<i>Calandrella brachydactyla</i>	Greater Short-toed Lark	LC	Yes
<i>Carduelis caniceps</i>	Grey-capped Goldfinch	LC	No
<i>Pica pica</i>	Eurasian Magpie	LC	No
<i>Lanius excubitor</i>	Great Grey Shrike	LC	No
<i>Lanius phoenicuroides</i>	Red-tailed Shrike	LC	No
<i>Lanius isabellinus</i>	Isabelline Shrike	LC	No

Scientific Name	Common Name	IUCN Category	Annex 1 ¹
Terpsiphone paradisi	Indian Paradise flycatcher	LC	No
Oenanthe chrysopygia	Red-tailed Wheatear	LC	No
Tulipa turkestanica	A plant species	LC	No
Glyptosternon oschanini	Turkestan Catfish	LC	No
Iskandaria pardalis	Tadzhik Loach	LC	No
Calopteryx samarcandica	Central Asian damselfly	LC	No
Parnassius jacquemontii	Keeled Apollo	LC	No
Lathyrus mulkak	A plant species	LC	No
Strix aluco	Tawny Owl	LC	No
Emberiza citrinella	Yellowhammer	LC	No
Ardea cinerea	Grey Heron	LC	No
Haliaeetus albicilla	White-tailed Sea-eagle	LC	No
Tringa ochropus	Green Sandpiper	LC	No
Anser indicus	Bar-headed Goose	LC	No
Eremurus bucharicus	A plant species	LC	No
Triplophysa stolickai	Tibetan stone loach	LC	No
Psammophis lineolatus	Steppe Ribbon Racer	LC	No
Orthetrum albistylum	White-tailed Skimmer	LC	No
Charadrius atrifrons	Tibetan Sandplover	LC	No
Crociodura suaveolens	Lesser White-toothed Shrew	LC	No
Acrocephalus stentoreus	Clamorous Reed-warbler	LC	No
Xerotyphlops vermicularis	Eurasian Blind Snake	LC	No
Alaudala heinei	Turkestan Short-toed Lark	LC	No
Bufotes baturae	Batura Toad	LC	No
Schizothorax intermedius	Aral Basin Snowtrout	LC	No
Gymnodiptychus dybowskii	Scaleless Osman	LC	No
Otus scops	Eurasian Scops-owl	LC	No
Rutilus lacustris	Pontic Roach	LC	No
Curruca crassirostris	Eastern Orphean Warbler	LC	No
Iduna pallida	Eastern Olivaceous Warbler	LC	No
Cuculus optatus	Oriental Cuckoo	LC	No
Circaetus gallicus	Short-toed Snake-eagle	LC	Yes
Phylloscopus sindianus	Mountain Chiffchaff	LC	No
Himantopus himantopus	Black-winged Stilt	LC	Yes
Streptopelia decaocto	Eurasian Collared-dove	LC	No
Circus cyaneus	Hen Harrier	LC	Yes
Charadrius alexandrinus	Kentish Plover	LC	Yes
Halcyon smyrnensis	White-throated Kingfisher	LC	Yes
Rallus aquaticus	Western Water Rail	LC	No
Rhodopechys sanguineus	Eurasian Crimson-winged Finch	LC	No
Emberiza calandra	Corn Bunting	LC	No
Emberiza schoeniclus	Reed Bunting	LC	No
Emberiza bruniceps	Red-headed Bunting	LC	No
Emberiza buehanani	Grey-necked Bunting	LC	No
Emberiza cia	Rock Bunting	LC	No



Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Emberiza stewarti</i>	White-capped Bunting	LC	No
<i>Emberiza leucocephalos</i>	Pine Bunting	LC	No
<i>Mycerobas carripes</i>	White-winged Grosbeak	LC	No
<i>Coccothraustes coccothraustes</i>	Hawfinch	LC	No
<i>Pyrrhula pyrrhula</i>	Eurasian Bullfinch	LC	No
<i>Carpodacus rubicilla</i>	Great Rosefinch	LC	No
<i>Carpodacus rhodochlamys</i>	Red-mantled Rosefinch	LC	No
<i>Carpodacus erythrinus</i>	Common Rosefinch	LC	No
<i>Oriolus kundoo</i>	Indian Golden Oriole	LC	No
<i>Alauda arvensis</i>	Eurasian Skylark	LC	No
<i>Plecotus strelkovi</i>	Strelkov's Long-eared Bat	LC	No
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	LC	No
<i>Cnephaeus serotinus</i>	Eurasian Serotine	LC	No
<i>Cnephaeus ognevi</i>	Ognev's Serotine	LC	No
<i>Barbastella darjelingensis</i>	Eastern Barbastelle	LC	No
<i>Barbastella leucomelas</i>	Eastern Barbastelle	LC	No
<i>Mustela nivalis</i>	Least Weasel	LC	No
<i>Eumodicogryllus bordigalensis</i>	Verge Cricket	LC	No
<i>Gallinula chloropus</i>	Common Moorhen	LC	No
<i>Gelochelidon nilotica</i>	Common Gull-billed Tern	LC	Yes
<i>Tenuidactylus bogdanovi</i>	Bogdanov's Thin-toed Gecko	LC	No
<i>Eremias regeli</i>	Tajik Racerunner	LC	No
<i>Paralaudakia bochariensis</i>	A lizard species	LC	No
<i>Falco peregrinus</i>	Peregrine Falcon	LC	Yes
<i>Burhinus oedicnemus</i>	Eurasian Thick-knee	LC	Yes
<i>Phasianus colchicus</i>	Common Pheasant	LC	No
<i>Buteo rufinus</i>	Long-legged Buzzard	LC	Yes
<i>Turdus atrogularis</i>	Black-throated Thrush	LC	No
<i>Parus major</i>	Great Tit	LC	No
<i>Cyanistes cyanus</i>	Azure Tit	LC	No
<i>Larus cachinnans</i>	Caspian Gull	LC	No
<i>Ixobrychus minutus</i>	Common Little Bittern	LC	Yes
<i>Trochalopteron lineatum</i>	Streaked Laughingthrush	LC	No
<i>Curruca curruca</i>	Lesser Whitethroat	LC	No
<i>Typha elephantina</i>	A plant species	LC	No
<i>Zannichellia palustris</i>	Horned Pondweed	LC	No
<i>Alisma plantago-aquatica</i>	Common Water-plantain	LC	No
<i>Vallisneria spiralis</i>	Tapegrass	LC	No
<i>Juncus bufonius</i>	Toad Rush	LC	No
<i>Juncus articulatus</i>	Jointed rush	LC	No
<i>Potamogeton pusillus</i>	Lesser Pondweed	LC	No
<i>Lindernia procumbens</i>	Lindernie couchée	LC	No
<i>Calopteryx splendens</i>	Banded Demoiselle	LC	No
<i>Orthetrum brunneum</i>	Southern Skimmer	LC	No
<i>Sympecma fusca</i>	Common Winter Damsel	LC	No

Scientific Name	Common Name	IUCN Category	Annex 1 ¹
Lestes barbarus	Migrant Spreadwing	LC	No
Orthetrum coerulescens	Keeled Skimmer	LC	No
Macrovipera lebetinus	Levantine Viper	LC	No
Hemorrhois ravergieri	Spotted Whip Snake	LC	No
Gloydius halys	Halys Pit Viper	LC	No
Elaphe dione	Steppes Ratsnake	LC	No
Hemorrhois nummifer	Coin-marked Snake	LC	No
Pseudopus apodus	European Glass Lizard	LC	No
Natrix tessellata	Dice Snake	LC	No
Radix auricularia	Ear Pond Snail	LC	No
Dreissena polymorpha	Zebra Mussel	LC	No
Myotis nipalensis	Nepal Myotis	LC	No
Circus aeruginosus	Western Marsh-harrier	LC	Yes
Aegilops geniculata	Ovate Goat Grass	LC	No
Aegilops peregrina	Goatgrass	LC	No
Aegilops triuncialis	Jointed Goat Grass	LC	No
Prunus mahaleb	Mahaleb Cherry	LC	No
Aegilops tauschii	Rough-spike Hard Grass	LC	No
Paralaudakia lehmanni	Turkestan Rock Agama	LC	No
Stuckenia pectinata	Fennel Pondweed	LC	No
Channa gachua	Dwarf Snakehead	LC	No
Ischnura elegans	Common Bluetail	LC	No
Orthetrum sabina	Slender Skimmer	LC	No
Crossobamon eversmanni	Comb-toed Gecko	LC	No
Ablepharus pannonicus	Asian Snake-eyed Skink	LC	No
Echis carinatus	Saw-scaled Viper	LC	No
Boiga trigonata	Indian Gamma Snake	LC	No
Eremias grammica	Reticulate Racerunner	LC	No
Tenuidactylus fedtschenkoi	Turkestan thin-toed gecko	LC	No
Platyceps rhodorachis	Wadi Racer	LC	No
Potamogeton natans	Broad-leaved Pondweed	LC	No
Najas minor	Brittle waternymph	LC	No
Najas marina	Holly-leaved Naiad	LC	No
Najas graminea	Ricefield Waternymph	LC	No
Potamogeton nodosus	Loddon Pondweed	LC	No
Rhinolophus hipposideros	Lesser Horseshoe Bat	LC	Yes
Rhinolophus ferrumequinum	Greater Horseshoe Bat	LC	Yes
Rattus pyctoris	Himalayan Rat	LC	No
Nyctalus noctula	Common Noctule	LC	No
Nesokia indica	Short-tailed Bandicoot Rat	LC	No
Myotis emarginatus	Geoffroy's Bat	LC	Yes
Myotis blythii	Lesser Mouse-eared Myotis	LC	Yes
Mus musculus	House Mouse	LC	No
Microtus ilaeus	Kazakhstan Vole	LC	No
Meriones meridianus	Mid-day Gerbil	LC	No

Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Meriones libycus</i>	Libyan Jird	LC	No
<i>Lynx lynx</i>	Eurasian Lynx	LC	Yes
<i>Felis chaus</i>	Jungle Cat	LC	No
<i>Ellobius tancrei</i>	Zaisan Mole Vole	LC	No
<i>Dryomys nitedula</i>	Forest Dormouse	LC	No
<i>Cyprinus carpio</i>	Eurasian Carp	LC	No
<i>Nothocricetulus migratorius</i>	Grey Dwarf Hamster	LC	No
<i>Canis lupus</i>	Grey Wolf	LC	Yes
<i>Microtus bucharensis</i>	Bucharian Vole	LC	No
<i>Microtus afghanus</i>	Afghan Vole	LC	No
<i>Apodemus pallipes</i>	Himalayan Field Mouse	LC	No
<i>Apodemus uralensis</i>	Herb Field Mouse	LC	No
<i>Alticola argentatus</i>	Silver Mountain Vole	LC	No
<i>Meles leucurus</i>	Asian Badger	LC	No
<i>Ballerus sapa</i>	White-Eye Bream	LC	No
<i>Potamon ruttneri</i>	Freshwater crab species	LC	No
<i>Pistacia khinjuk</i>	A plant species	LC	No
<i>Diplacodes lefebvrii</i>	Black Percher	LC	No
<i>Crocothemis erythraea</i>	Broad Scarlet	LC	No
<i>Anax imperator</i>	Blue Emperor	LC	No
<i>Pelophylax terentievi</i>	Terentjev's frog	LC	No
<i>Bufo pewzowi</i>	Xinjiang Toad	LC	No
<i>Hypsugo savii</i>	Savi's Pipistrelle	LC	No
<i>Sus scrofa</i>	Wild Boar	LC	No
<i>Ursus arctos</i>	Brown Bear	LC	Yes
<i>Cnephaeus gobiensis</i>	Gobi Serotine	LC	No
<i>Crocidura gmelini</i>	Gmelin's white-toothed shrew	LC	No
<i>Lepus tibetanus</i>	Desert Hare	LC	No
<i>Silurus glanis</i>	Wels Catfish	LC	No
<i>Mustela eversmanii</i>	Steppe Polecat	LC	Yes
<i>Martes foina</i>	Beech Marten	LC	No
<i>Vulpes vulpes</i>	Red Fox	LC	No
<i>Vespertilio murinus</i>	Parti-coloured Bat	LC	No
<i>Sander lucioperca</i>	Eurasian Pikeperch	LC	No
<i>Scardinius erythrophthalmus</i>	Eurasian Rudd	LC	No
<i>Rhinolophus bocharicus</i>	Bokhara horseshoe bat	LC	No
<i>Gyps fulvus</i>	Griffon Vulture	LC	Yes
<i>Sterna hirundo</i>	Common Tern	LC	Yes
<i>Larus fuscus</i>	Lesser Black-backed Gull	LC	No
<i>Glareola pratincola</i>	Collared Pratincole	LC	Yes
<i>Vanellus leucurus</i>	White-tailed Lapwing	LC	No
<i>Charadrius asiaticus</i>	Caspian Plover	LC	Yes
<i>Charadrius dubius</i>	Little Ringed Plover	LC	No
<i>Recurvirostra avosetta</i>	Pied Avocet	LC	Yes
<i>Ibidorhyncha struthersii</i>	Ibisbill	LC	No



Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Calidris alba</i>	Sanderling	LC	No
<i>Actitis hypoleucos</i>	Common Sandpiper	LC	No
<i>Tringa totanus</i>	Common Redshank	LC	No
<i>Gallinago gallinago</i>	Common Snipe	LC	No
<i>Gallinago solitaria</i>	Solitary Snipe	LC	No
<i>Pterocles alchata</i>	Pin-tailed Sandgrouse	LC	Yes
<i>Fulica atra</i>	Eurasian Coot	LC	No
<i>Zapornia pusilla</i>	Baillon's Crake	LC	No
<i>Zapornia parva</i>	Little Crake	LC	No
<i>Anthropoides virgo</i>	Demoiselle Crane	LC	No
<i>Spilopelia senegalensis</i>	Laughing Dove	LC	No
<i>Streptopelia orientalis</i>	Oriental Turtle-dove	LC	No
<i>Columba palumbus</i>	Common Woodpigeon	LC	No
<i>Columba oenas</i>	Stock Dove	LC	No
<i>Columba leuconota</i>	Snow Pigeon	LC	No
<i>Corvus corax</i>	Common Raven	LC	No
<i>Corvus corone</i>	Carrion Crow	LC	No
<i>Corvus frugilegus</i>	Rook	LC	No
<i>Corvus monedula</i>	Eurasian Jackdaw	LC	No
<i>Pyrrhocorax graculus</i>	Yellow-billed Chough	LC	No
<i>Pyrrhocorax pyrrhocorax</i>	Red-billed Chough	LC	Yes
<i>Lanius schach</i>	Long-tailed Shrike	LC	No
<i>Ciconia ciconia</i>	White Stork	LC	Yes
<i>Ciconia nigra</i>	Black Stork	LC	Yes
<i>Botaurus stellaris</i>	Eurasian Bittern	LC	Yes
<i>Ardeola ralloides</i>	Squacco Heron	LC	Yes
<i>Ardea alba</i>	Great White Egret	LC	Yes
<i>Ardea purpurea</i>	Purple Heron	LC	Yes
<i>Phalacrocorax carbo</i>	Great Cormorant	LC	No
<i>Microcarbo pygmaeus</i>	Pygmy Cormorant	LC	Yes
<i>Podiceps cristatus</i>	Great Crested Grebe	LC	No
<i>Podiceps grisegena</i>	Red-necked Grebe	LC	No
<i>Tachybaptus ruficollis</i>	Little Grebe	LC	No
<i>Falco subbuteo</i>	Eurasian Hobby	LC	No
<i>Falco columbarius</i>	Merlin	LC	Yes
<i>Falco tinnunculus</i>	Common Kestrel	LC	No
<i>Falco naumanni</i>	Lesser Kestrel	LC	Yes
<i>Hieraaetus pennatus</i>	Booted Eagle	LC	Yes
<i>Aquila chrysaetos</i>	Golden Eagle	LC	Yes
<i>Accipiter nisus</i>	Eurasian Sparrowhawk	LC	No
<i>Columba rupestris</i>	Hill Pigeon	LC	No
<i>Spatula clypeata</i>	Northern Shoveler	LC	No
<i>Anas platyrhynchos</i>	Mallard	LC	No
<i>Tadorna tadorna</i>	Common Shelduck	LC	No
<i>Tadorna ferruginea</i>	Ruddy Shelduck	LC	Yes

Scientific Name	Common Name	IUCN Category	Annex 1 ¹
Coturnix coturnix	Common Quail	LC	No
Alectoris chukar	Chukar	LC	No
Tetraogallus himalayensis	Himalayan Snowcock	LC	No
Ammoperdix griseogularis	See-see Partridge	LC	No
Salix excelsa	Boylu söğüt	LC	No
Schizopygopsis stolickai	False osman	LC	No
Aegilops crassa	Persian Goat Grass	LC	No
Aegilops vavilovii	A plant species	LC	No
Populus alba	White Poplar	LC	No
Clithon chlorostomum	Hanagasumikanoko	LC	No
Lymnaea rectilabrum	Fresh water snail species	LC	No
Lymnaea tenera	Fresh water snail species	LC	No
Schoenoplectus tabernaemontani	Grey Club-rush	LC	No
Medicago sativa	Alfalfa	LC	No
Vanessa cardui	Painted Lady	LC	No
Parnassius mnemosyne	Clouded Apollo	LC	No
Aegilops cylindrica	Jointed Goat Grass	LC	No
Columba livia	Rock Dove	LC	No
Caprimulgus europaeus	European Nightjar	LC	Yes
Asio otus	Long-eared Owl	LC	No
Athene noctua	Little Owl	LC	No
Bubo bubo	Eurasian Eagle-owl	LC	Yes
Apus affinis	Little Swift	LC	No
Apus apus	Common Swift	LC	No
Cuculus canorus	Common Cuckoo	LC	No
Merops apiaster	European Bee-eater	LC	No
Merops persicus	Blue-cheeked Bee-eater	LC	No
Alcedo atthis	Common Kingfisher	LC	Yes
Coracias garrulus	European Roller	LC	Yes
Netta rufina	Red-crested Pochard	LC	No
Aythya fuligula	Tufted Duck	LC	No
Upupa epops	Common Hoopoe	LC	No
Dendrocopos leucopertus	White-winged Woodpecker	LC	No
Mergus merganser	Goosander	LC	No
Prunus jaquemontii	Flowering Almond	DD	No
Prunus ferganensis	xin jiang tao	DD	No
Prunus bifrons	A plant species	DD	No
Myotis bucharensis	Bokhara Whiskered Bat	DD	No
Ablepharus darvazi	Darvaz snake-eyed skink	DD	No
Nurekia triculiformis	Fresh water snail species	DD	No
Sorex buchariensis	Pamir Shrew	DD	No
Polypylis almaatina	Fresh water snail species	DD	No
Lymnaea bakowskyana	Fresh water snail species	DD	No
Pipistrellus aladdin	Turkestan Pipistrelle	DD	No
Armene pusilla	Богомол-крошка	DD	No



Scientific Name	Common Name	IUCN Category	Annex 1 ¹
<i>Bolivaria brachyptera</i>	Bolivar's Short Winged Mantis	DD	No
<i>Iris polystictica</i>	Dot-Winged Mantis	DD	No
<i>Empusa pennicornis</i>	Conehead Mantis	DD	No

Critical Habitat determination for EBRD is based on IUCN Red List Threatened species, which are species within the Categories of Critically Endangered (CR), Endangered (EN) and Vulnerable (VU). Of the 412 species in the long list, 24 are considered to be Threatened species (four CR; 5 EN; and 15 Vulnerable). The remaining species were made up of 17 Near Threatened (NT), 357 Least Concern (LC) and 14 Data Deficient (DD).

Screening of Long List for Further Assessment

The long list presented in Table 5 was initially screened by retaining (i) all species classed by IUCN as Threatened (CR, EN or VU), and (ii) all Near Threatened species listed in Annex 1 of the Bern Convention Resolution 6 (revised). Species classed as Least Concern or Data Deficient on the IUCN Red List have been screened out at this stage; Least Concern Annex 1 species are addressed in the project ESIA where appropriate but are not carried into the CH/PBF Criterion 1 assessment.

The resulting short list was then assessed for a potential overlap in the EAAA and the project area. The outcome of this process is shown in Table 7.

Column Headings for Table 7 - Th, RR and M&C represent the three Criteria for Priority Species and their Habitats as set out in EBRD Guidance Note. Where Th = Threatened; RR – Range Restricted; and M&C = Migratory or Congregatory. Q = Qualifying.

Table 7. Assessment of Short List Against Criteria for CH and PBF

Scientific Name	Common Name	IUCN	PBF	Comment	Th	RR	M&C	Q
<i>Pseudoscaphirhynchus hermanni</i>	Small Amu-Darya Shovelnose Sturgeon	CR	No	This species is considered to be rare and only present in limited locations within Tajikistan centred on the Amy Darya basin and Vakhsh River. A recent review of fish of Tajikistan indicates that this species has not been recorded from the current site and not at all in the country since 1997 (Artaev, Thoni, Mirzoev, & Levin, 2025). It was not recorded during the Shamsiddinov, 2023 field survey. Considered unlikely to trigger CH or PBF.	X	X	N/A	No
<i>Pseudoscaphirhynchus kaufmanni</i>	Amu-Darya Shovelnose Sturgeon	CR	No	Considered to be very rare in Tajikistan, Artaev et al state "Very rare; occurs in the lower reaches of the Vakhsh and possibly in the Amu-Darya Rivers." Last recorded in the country in 2012. It was not recorded during the Shamsiddinov, 2023 field survey. Considered unlikely to trigger CH or PBF.	X	X	N/A	No
<i>Alsophylax tadjikiensis</i>	Tadjikistan Even-fingered Gecko	CR	No	A rare species of dry slopes in Tajikistan. The IUCN Red List mapping shows the area of occurrence just south of the project area. Notably, the elevation range for the species is given as a maximum of 500 m. All of the project area is considerably higher than this elevation, generally over 1,000 m. Considered unlikely to be present.	X	X	N/A	No
<i>Vanellus gregarius</i>	Sociable Lapwing	CR	Yes	A migratory species passing through Tajikistan on route between breeding and wintering areas. Birdlife International's fact sheet states that during migration it utilises "mainly sandy plains with short grass, dry meadows, fallow land and cultivated fields (del Hoyo et al. 1996)". This habit is absent from the project area.	N/A	N/A	X	No
<i>Calidris tenuirostris</i>	Great Knot	EN	No	A migrant species which is not listed as passing through Tajikistan on the IUCN Red List Information. May very occasionally be recorded in the country as a vagrant.	N/A	N/A	X	No
<i>Falco cherrug</i>	Saker Falcon	EN	Yes	A breeding species within Tajikistan and likely present within the project areas. The IUCN population estimate is between 12,200-29,800 mature individuals. For the 0.5 % criteria this would be 61 birds. It is considered highly unlikely that the project area and its surrounds has a carrying capacity for this number of birds	X	N/A	N/A	No
<i>Haliaeetus leucoryphus</i>	Pallas's Fish-eagle	EN	Yes	A non-breeding species of Tajikistan. Resident and possibly migratory. Potentially present within project area as habitat is	N/A	N/A	X	No



				suitable but unlikely to fulfil the criteria for CH or PBF. The global population is estimated to be 1,000-2,499 mature individuals. For the Migratory and Congregatory criteria of 1%, this would be 10 individuals at the lower end of the population estimate. The project area is unlikely to support this number of individuals.				
<i>Neophron percnopterus</i>	Egyptian Vulture	EN	Yes	Recorded from project area during field surveys. Breeding species of Tajikistan. The world population estimate is 12,400-36,000 mature individuals, making the 0.5% threshold 62 birds. The project area and surrounding landscape would not support this number of birds. Corridor breeding presence is confirmed by the May 2026 surveys, with 6 active nests recorded across the alignment (Stage 1 detection 8–10 May; Stage 2 occupancy confirmation 16–18 May). One nest is located within the works zone at km 2–4. Although Criterion 1 CH thresholds remain not met (the global 0.5% population test is unchanged), the corridor is now a confirmed breeding location for a small national population and the km 2–4 nest is a fixed receptor for BMP Section 6.3 mitigation. Species remains a PBF under paragraph 12(ii)c.	X	N/A	N/A	No
<i>Oxyura leucocephala</i>	White-headed Duck	EN	Yes	A passage bird in Tajikistan. Preferred habitat during migration is large open bodies of water. Habitat in project area is considered unsuitable.	N/A	N/A	X	No
<i>Vormela peregusna</i>	Marbled Polecat	VU	Yes	A widespread species present within Tajikistan but reported to prefer steppe areas rather than mountains. May be present within the project area, and based on a precautionary approach will be treated as a PBF but not triggering CH.	PBF as VU species	N/A	N/A	PBF
<i>Picipes rhizophilus</i>	Steppengras-Schwarzfußporling	VU	No	A fungal species which is associated with steppe grasslands and less often oak woodland. Unlikely to be present within habitat of project area	X	N/A	N/A	No
<i>Pluvialis squatarola</i>	Grey Plover	VU	No	A passage species for Tajikistan with habitats such as estuaries, coastal areas and some inland larger lakes and grasslands used for stopover points. Not likely present in project area habitats	N/A	N/A	X	No
<i>Calidris falcinellus</i>	Broad-billed Sandpiper	VU	No	A migratory species for Tajikistan. IUCN Red List descriptions states that during passage the bird “shows a preference for muddy and boggy areas on the shores of ponds and lakes, but it is also found on shallow freshwater, brackish and saline (sometimes hyper-saline) lagoons, temporary swamps, flooded rice-fields, overgrazed wet meadows, inlets of fjords (del Hoyo et al. 1996, Snow and Perrins 1998)”. These habitats are not present within the project area and surrounds so considered highly unlikely to be present in numbers that reach the criteria thresholds.	N/A	N/A	X	No

<i>Panthera uncia</i>	Snow Leopard	VU	No	<p>The IUCN mapping for this species suggests it is absent from the project area, but possibly present just to the north of the project. This species tends to be found at higher elevations than the project location, stated to be generally over 3,000m although in more remote locations in Mongolia it has been recorded down to 500 m. Unlikely to be present within project area and certainly not in numbers which would meet the criteria thresholds.</p> <p>The species is accordingly not assessed as resident or as triggering any CH threshold within the corridor. It is nonetheless retained as a landscape-connectivity feature in EAAA A (Section 2.2.1), reflecting the corridor's position between the Dashti-Jum reserve and the Dangara Massif KBA; this connectivity role does not imply corridor residency and is addressed qualitatively through the mitigation hierarchy rather than a threshold test.</p>	X	N/A	N/A	No
<i>Aquila heliaca</i>	Eastern Imperial Eagle	VU	Yes	A resident bird in Tajikistan. With a global population of 16,000 to 20,000 mature individuals, this would make the 0.5% threshold 80 adult birds. The project area and surrounds would not support this number of birds. This species may use the project area as part of a wider home range and as a VU species fulfils the criteria for PBF.	PBF as VU species	N/A	X	PBF
<i>Clanga clanga</i>	Greater Spotted Eagle	VU	Yes	A passage species for Tajikistan which prefers tall forests near to wetlands and open areas in winter. The habitats within the project area are not supportive of this species. If present would only be a casual overflight. The IUCN description state that they are less congregatory than similar raptor species and mainly found in twos or threes on passage.	X	N/A	X	No
<i>Calidris ferruginea</i>	Curlew Sandpiper	VU	No	A passage species for Tajikistan. Winters near coastal areas and inland at large lakes and wetland areas.	X	N/A	X	No
<i>Barbus capito conocephalus</i>	Turkestan Barbel	VU	No (Bern Convention Annex III only)	Recorded in the Sari Khosor area by Latifi (2026) as a national Red Book species (VU). Not recorded by Shamsiddinov (2023) during fish sampling at four points along the project river corridor, and not listed among the four ichthyofauna species confirmed for the Shurob River by Latifi. Literature presence within the broader EAAA is confirmed; field presence in the project river corridor is unconfirmed. The EAAA is unlikely to support a globally significant population of this species. As a VU species present within the EAAA based on literature records, treated precautionarily as a PBF pending targeted survey.	PBF	N/A	N/A	PBF
<i>Tulipa praestans</i>	A plant species	VU	No	Recorded in area around the project may be present and unrecorded, based on a precautionary approach this species is	PBF as VU	X	N/A	PBF

				considered as a PBF. Whilst localised and range restricted, the project area is unlikely to contain more than 10% of the global population.	species			
<i>Tulipa anisophylla</i>	A plant species	VU	No	Recorded in area around the project may be present and unrecorded, based on a precautionary approach this species is considered as a PBF. Whilst localised and range restricted, the project area is unlikely to contain more than 10% of the global population.	PBF as VU species	X	N/A	PBF
<i>Aythya ferina</i>	Common Pochard	VU	No	A breeding species within Tajikistan, this species This species requires well-vegetated eutrophic to neutral swamps, marshes, lakes and slow-flowing rivers with areas of open water and abundant emergent fringing vegetation. Considered unlikely to regularly occur within project area due to lack of suitable habitats	X	N/A	X	No
<i>Ovis vignei</i>	Urial	VU	No	IUCN mapping shows that the extent of occurrence for this species coincides with the project area. The species is migratory and by nature as a herd species, is congregatory. It is not considered likely the numbers within the project area and surrounds would exceed 180 animals which is the threshold for CH for Migratory and congregatory species. However, as a IUCN VU species it fulfils the criteria of PBF under the Threatened species criteria.	PBF as VU species	N/A	X	PBF
<i>Streptopelia turtur</i>	European Turtle-dove	VU	No	A breeding species in Tajikistan, but utilises habitats which are absent from the project area, such as steppe, forests and agricultural land. It also is generally found at lower elevations than the project.	X	N/A	X	No
<i>Columba eversmanni</i>	Yellow-eyed Pigeon	VU	No	A breeding species of Tajikistan. IUCN area of occurrence overlaps with project area and IUCN note that it may use mountain valleys with rivers as a suitable habitat. Meets criteria for PBF as a VU species with the EAAA.	PBF as VU species	N/A	X	PBF
<i>Chlamydotis macqueenii</i>	Asian Houbara	VU	No	A Tajikistan breeding species but one which utilises habitats absent from the project area. These being open steppe, desert and arid lands	X	N/A	X	No
<i>Pyrus tadshikistanica</i>	Wild pear (endemic)	CR	Yes (national RDB CR)	Field-confirmed during Muhammadsoleh (2026) botanical survey: 6 individuals at km 11, 15, 29, 34 and 48 along the alignment. Listed as CR on the IUCN Red List (2007 assessment, B2ab(iii,v), marked as needing updating) and confirmed as CR in the regional Red List of Trees of Central Asia (Eastwood, Lazkov & Newton, 2009). Listed as CR in the Red Data Book of the Republic of Tajikistan (2024). Endemic to Tajikistan. The species occurs at 1,300–1,600 m in the Darvaz Mountains; the BSK corridor at km 11–48 (elevation 1,300–1,600 m approximately) falls within this band and within the Sari	CH as CR species, precautionary basis (para	X	N/A	CH

				Khosor area of the species' recognised range. A quantitative reference for the national population is provided by Boboev (2022): comprehensive expeditionary research in the adjacent Dashtijum/Kulob zone of Khatlon region recorded approximately 300 fruit-bearing trees and 2,000 vegetatively-propagated saplings, with no observed seed reproduction. Against this closest-comparable national reference, the 6 corridor individuals represent approximately 2% of the national reference population — comfortably above the 0.5% threshold under paragraph 14(ii)b. On this basis, both 14(ii)b and 14(ii)c CH tests are assessed as met for the species; Criterion 1 Critical Habitat is triggered. The mitigation hierarchy applies (avoidance via micro-realignment review as first response; translocation only as last resort with realistic caveats — particularly given the Boboev finding of vegetative-only reproduction) and the species is to be covered by the Biodiversity Offset Programme alongside <i>P. korshinskyi</i> . Active ex-situ conservation underway via the BGCI/Kulob Botanic Garden Darwin Initiative project (ref. 31-017) provides a potential offset partner.	graph 14(ii)c)			
<i>Pyrus korshinskyi</i>	Wild pear	CR	Yes (national RDB CR)	Field-confirmed during Muhammadsoleh (2026) botanical survey: 16 individuals at km 16, 37, 43 and 47 along the alignment. Listed as CR on both the IUCN Red List (B2ab(iii,v)) and the Red Data Book of the Republic of Tajikistan (2024). Globally restricted distribution centred on the Vakhsh and Hazrati Shoh ranges with confirmed presence in Tajikistan, Uzbekistan, Kyrgyzstan, and northern Afghanistan. On a precautionary basis, given that 16 confirmed mature reproductive units occur along a ~56 km corridor within a globally restricted range, the Criterion 1c CH test for important national concentrations of a CR species is assessed as met. Critical Habitat is triggered for this species on a precautionary basis. The mitigation hierarchy applies (avoidance via micro-realignment review as first response; translocation only as a last resort) and a Biodiversity Offset Programme is required to demonstrate net gain.	CH as CR species, precautionary basis (paragraph 14(ii)c)	X	N/A	CH
<i>Malus sieversii</i>	Wild apple	EN	Yes (national RDB EN; CITES)	Field-confirmed during Muhammadsoleh (2026) botanical survey: two separate sites at km 9 and km 12 along the alignment (full coordinates: km 9 and km 12 GPS waypoints in Muhammadsoleh 2026 Table 1). Listed as EN on the IUCN Red List and in the Red Data Book of the Republic of Tajikistan (2024). The species is recognised as the progenitor of the cultivated apple and has CITES significance. Distribution across Central Asia is wide; the Sari Khosor area lies within the natural range but the species is genuinely uncommon in	PBF as EN species	X	N/A	PBF

				the corridor itself, consistent with the disturbed character of the alignment. As an EN species recorded within the EAAA, the species qualifies as a PBF under EBRD ESR6 paragraph 12(ii)c. The number of individuals in the project area is well below the threshold for Criterion 1 CH.				
<i>Allium suworowii</i>	Anzur onion	ND	2024 RDB	Field-confirmed during the Muhammadsoleh (2026) botanical survey: one population between km 33 and km 34. Listed in the Red Data Book of the Republic of Tajikistan (2024); assessed as a precautionary PBF for nationally listed flora and the anchor feature for EAAA E (Section 2.2.1). Species determination and chainage to be reconciled against the Khanjarov record of <i>A. stipitatum</i> at ~km 25 (Annex B7.1); the precautionary PBF treatment holds under either identification. Population structure, area and footprint relationship to be confirmed in the full botanical report.	PBF	TBC	N/A	PBF
<i>Aegypius monachus</i>	Cinereous Vulture	NT	Yes (paragraph 12(iii))	Confirmed corridor breeder during May 2026 field surveys: 1 active nest at km 2–4 (Ergashev, 2026) within the works zone, and 2 individuals at Point 4 of the bird survey (Khursand & Nugzar / Talbonov, 2026). The species is IUCN Near Threatened, which does not in itself trigger PBF status under paragraph 12(ii)b. However, the national breeding population is estimated at only 40–50 pairs (Ergashev, 2026, citing the Red Data Book of the Republic of Tajikistan), making the corridor a confirmed breeding location for a small national population. Confirmed by the State Institution for Specially Protected Natural Territories (Annex 2) as a species of conservation interest in the project area. On this basis the species is a PBF under EBRD ESR6 paragraph 12(iii) (significant biodiversity features identified by a broad set of stakeholders or governments). The km 2–4 nest receives the same 250 m no-works exclusion buffer as the Egyptian Vulture nest at the same location during 1 March – 30 September.	PBF as nationally significant	N/A	N/A	PBF
<i>Circus macrourus</i>	Pallid Harrier	NT	Yes	A migratory species breeding on Central Asian steppe and wintering in South Asia and Africa, recorded on passage through Tajikistan. The May 2026 bird survey field-confirmed 2 individuals at Point 1 (38.32458 N, 069.68871 E; km 1.5) on 08.05.2026. The corridor habitat (foothill mountain valley at 920–2,000 m) is not the species' core breeding or wintering habitat, which is lowland steppe and open grassland; corridor records are interpreted as transient passage. The Project will not affect a nationally or globally important concentration of the species. As a Bern Annex 1 species with confirmed corridor	N/A	N/A	X	PBF



				presence, Pallid Harrier qualifies as a PBF under EBRD ESR6 paragraph 12(ii)(a).				
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3.1.5. National Red List Species

The EBRD Criteria for CH and PBFs for Threatened Species includes provision for nationally important species. For PBF this is for species classed as CR or EN within a national Red List, providing such listing aligns with the IUCN approach and criteria for categorisation. For CH the criterion is for the presence of important concentrations of species which are categorised as CR or EN within a national Red List, again based on the Red List adopting IUCN approaches.

The desk study for the project indicates that there are a number of species within the Sari Khosor area which may qualify as PBFs through their listing within the national Red Data list. This list was recently updated (2024) and consists of two volumes, one for flora and one for fauna.

The list for species of CR or EN in the national red list from the desk study is set out below.

Invertebrates

- *Dorcus sewertzowi* (EN)
- *Polyommatus avinovi* (EN)
- *Acosmeryx naga hissarica* (EN)
- *Hyles apocyni* (EN)

Reptiles

- European legless lizard (*Pseudopus apodus*, EN)

Birds

- Bearded vulture (*Gypaetus barbatus*, EN)
- Egyptian vulture (*Neophron percnopterus*, EN)
- Saker falcon (*Falco cherrug coatsi*, EN)
- Barbary falcon (*Falco pelegrinoides*, EN)

Mammals

- Tien Shan brown bear (*Ursus arctos isabellinus*, EN)
- Eurasian otter (*Lutra lutra*, EN)
- Eurasian lynx (*Lynx lynx isabellinus*, EN)
- Snow leopard (*Panthera uncia*, EN)
- Bukhara urial (*Ovis vignei bochariensis*, CR)

Flora

- *Pyrus tadshikistanica* (wild pear, CR) – 6 individuals confirmed along the alignment
- *Pyrus korshinskyi* (wild pear, CR) – 16 individuals confirmed along the alignment; precautionary Critical Habitat determination (see Section 3.3)
- *Malus sieversii* (wild apple, EN; CITES) – two sites confirmed along the alignment

3.2. Protected Habitats and Ecosystems

The assessment of habitats present along the project corridor against the EBRD ESR6 Criterion (i) and the relevant Bern Convention listings is set out below. Tajikistan is not within the scope of the EU Habitats Directive (Section 2 of this CHA), and the applicable habitat-listing instrument for the assessment is therefore **Annex 1 of the Bern Convention Revised Resolution 4**. The EU Habitats Directive Annex I is referenced where directly equivalent EUNIS codes apply, for cross-comparison only.

The assessment is supported by a habitat map of the corridor classifying the 250 m corridor buffer into ten habitat classes. The mapping methodology, the habitat-area table and the Resolution 4 / Annex 1 screen are set out in Section 3.2.1 to Section 3.2.3 below.



3.2.1 Habitat baseline mapping

Methodology

Habitat mapping covers the 250 m corridor buffer (Tier 1 Project Footprint EAAA, Section 3 of this CHA). The mapping integrates four input sources:

1. Latifi (Appendix 1) provides the regional habitat baseline for the Sari Khosor area, identifying the major habitat types present in the wider EAAA — broadleaf forests, mesophilic deciduous shrub communities, poplar forests, tugai forests, sparse woodlands (shiblyak), juniper forests, herbaceous communities, cushion plant communities, semi-savannas, and meadow vegetation — with characteristic species and elevation ranges. This regional baseline defines what is possible in the BSK corridor and informs the BSK class definitions in Table 9.
2. ESA WorldCover 2021 (10 m global land cover) provides the primary land-cover classification at the corridor scale.
3. Copernicus DEM GLO-30 (30 m global digital elevation model) provides slope, used to identify cliff and rocky-outcrop habitat (slope $\geq 35^\circ$), and elevation, used to refine the riparian zone and to test which of Latifi's habitat types fall within the corridor elevation envelope (920–2,000 m).
4. May 2026 botanical survey (Muhammadsoleh, 2026) provides ground-truth waypoints for habitat class assignment along the corridor, including the georeferenced *Pyrus tadshikistanica* (6 individuals), *Pyrus korshinskyi* (16 individuals), *Malus sieversii* (two sites) and *Allium suworowii* (km 33–34) records.

The BSK corridor descends from approximately 1,625 m at Baljuvon to approximately 920 m at Sari Khosor, an elevation envelope that excludes the higher-altitude communities Latifi records for the wider Sari Khosor area. Table 8 maps each Latifi habitat type onto the BSK class scheme and indicates whether it is expected within the corridor envelope:

Table 8: Correspondence between the regional habitat types (Latifi, Appendix 1) and the BSK habitat class scheme.

Latifi habitat type	Characteristic species	Elevation (m a.s.l.)	BSK class correspondence	Present in corridor?
Broadleaf forests	Walnut, maple, plane, wild apple, with mesophilic shrubs and herbs	Not stated; mid-elevation	BSK class 4 — Mid-elevation woodland	Yes — present in corridor
Mesophilic deciduous shrub communities	Wild roses, Aflatunia, Exochorda	800–2,800 m	BSK class 5 — Scrub / shrubland	Yes — present in corridor
Poplar forests	Populus bachofenii, P. tadshikistanica, P. konjilaliana, Salix, Hippophae	800–3,000 m	BSK class 3 — Riparian vegetation	Yes — present along Shurobdaryo channel
Tugai forests	Elaeagnus angustifolia, Tamarix spp., Hippophae rhamnoides	500–1,600 m	(Treated as absent — see Section 3.2.3)	Envelope overlaps lower corridor but morphology and field surveys do

Latifi habitat type	Characteristic species	Elevation (m a.s.l.)	BSK class correspondence	Present in corridor?
				not support presence
Sparse woodlands (shiblyak)	<i>Pistacia vera</i> , <i>Amygdalus bucharica</i> , <i>Celtis</i> , <i>Cercis</i> , <i>Crataegus</i>	800–1,600 m	BSK class 5 — Scrub / shrubland (xerophytic component)	Yes — present in lower corridor
Juniper forests	<i>Juniperus seravshanica</i> with <i>Acer</i> , <i>Populus tadshikistanica</i>	1,200–3,000 m	BSK class 4 — Mid-elevation woodland (juniper-dominated patches)	Yes — present in upper corridor
Herbaceous communities	<i>Origanum</i> , <i>Hypericum</i> , <i>Dracocephalum</i> , <i>Ziziphora</i>	800–2,000 m	BSK class 6 — Steppe / dry grassland	Yes — dominant class along the corridor
Cushion plant communities	<i>Acantholimon</i> , <i>Onobrychis</i>	1,000–4,000 m	(Treated as absent — above corridor max)	No — peak elevation 2,000 m
Semi-savannas	<i>Agrostis</i> , <i>Elytrigia</i> , <i>Roegneria</i> , <i>Polygonum coriarium</i>	800–1,400 m	BSK class 6 — Steppe / dry grassland	Yes — present in lower corridor
Meadow vegetation	<i>Alopecurus</i> , <i>Agrostis</i> , <i>Elytrigia</i> , <i>Ligularia</i>	2,400–3,000 m	(Treated as absent — above corridor max)	No — above corridor envelope

At a 10 m source resolution, mid-slope Central Asian shrubland tends to be under-attributed by the WorldCover classifier — it is frequently absorbed into the Grassland or Bare/sparse classes. The May 2026 botanical survey and the Latifi regional baseline (Table 7) both confirm the presence of *Pyrus*, *Malus*, *Amygdalus*, *Pistacia* and mesophilic shrub communities at multiple corridor sites that the map classes as Steppe or Bare. The Scrub / shrubland habitat row in Table 9 is therefore a known under-count, addressed in the botanist's review by reclassification of relevant Steppe and Bare polygons. The under-count does not affect the CH / PBF determinations in Section 3.2.3, as none of the Central Asian shrubland or woodland communities recorded by Latifi is listed in Bern Convention Resolution 4 or marked as a priority habitat type in EU Habitats Directive Annex I.

Habitat classes mapped along the corridor

Table 9: Habitat classes mapped within the 250 m corridor buffer (Tier 1 EAAA), with first-pass area totals.

Class	Habitat	Description	Area (ha)	% of buffer
1	Open water	Shurobdaryo channel and tributary channels	74.5	2.8 %



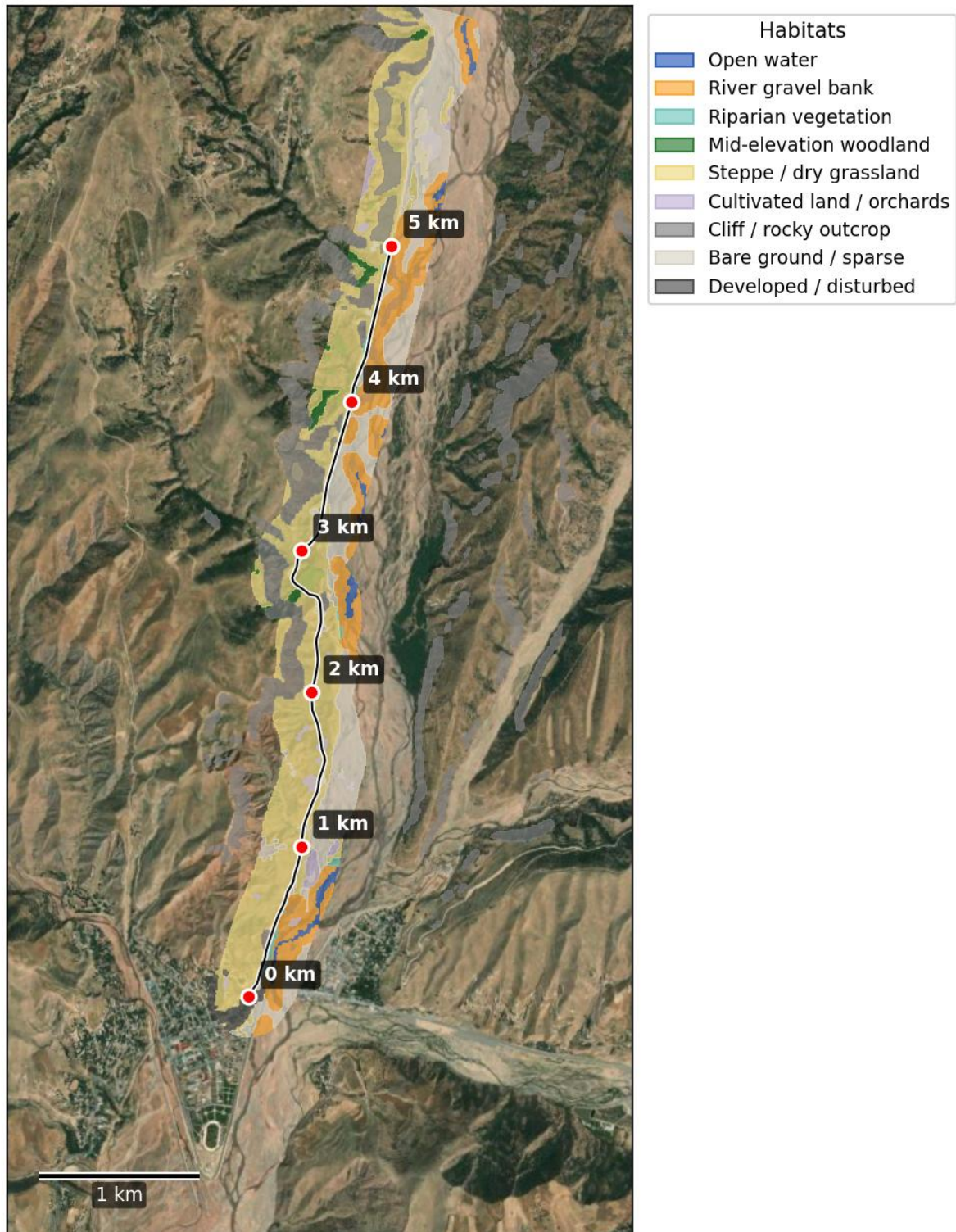
Class	Habitat	Description	Area (ha)	% of buffer
2	River gravel bank	Unvegetated / sparsely vegetated gravel within the active channel	288.2	10.9 %
3	Riparian vegetation	Salix–Populus–Hippophae bankside community within ~50 m of channel	29.7	1.1 %
4	Mid-elevation woodland	Broadleaf woodland (walnut, maple, ash, oak)	127.1	4.8 %
5	Scrub / shrubland	Mid-slope shrubland (under-mapped — see Caveat above)	0.0	0.0 %
6	Steppe / dry grassland	Slopes and terraces with herbaceous cover	993.1	37.4 %
7	Cultivated land / orchards	Subsistence agriculture and household orchards	358.3	13.5 %
8	Cliff / rocky outcrop	Steep cliff faces (slope $\geq 35^\circ$)	113.7	4.3 %
9	Bare ground / sparse	Bare or sparsely vegetated ground away from active channel	651.2	24.5 %
10	Developed / disturbed	Settlements, existing road formation, quarries	11.3	0.4 %
—	Other / unclassified	Pixels not assigned by the first-pass classifier	6.2	0.2 %
	Total		2,653.3	100.0 %

Source: BSK habitat mapping pipeline. Raster classification from ESA WorldCover 2021, Copernicus DEM GLO-30, and May 2026 botanical survey waypoints. Polygon area calculated in UTM Zone 42N (EPSG:32642).



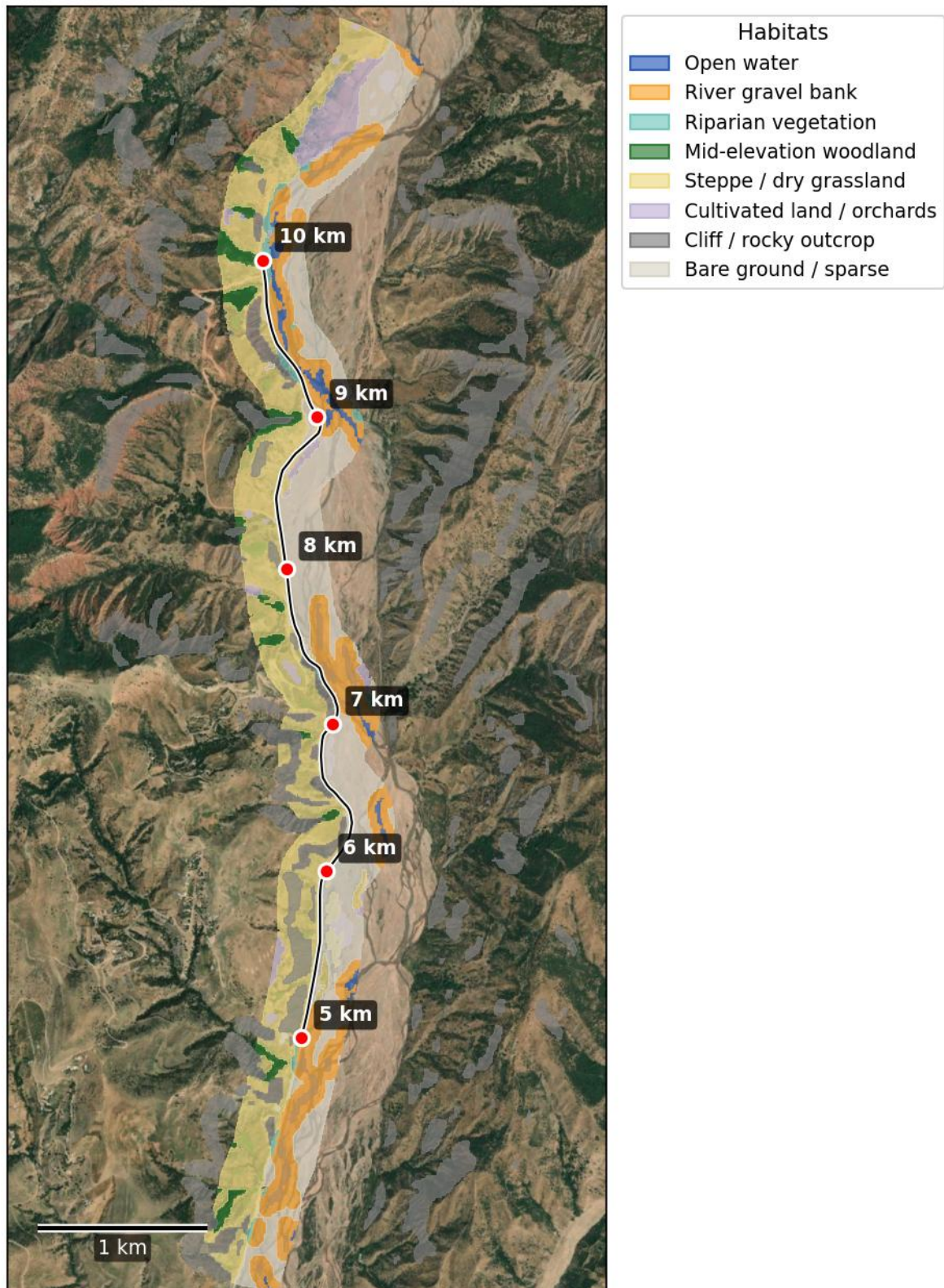
Figure 13: Corridor-wide habitat map of the 250 m buffer (1:75,000 scale).

BSK Road Project — Habitat Map 0.0-5.0 km



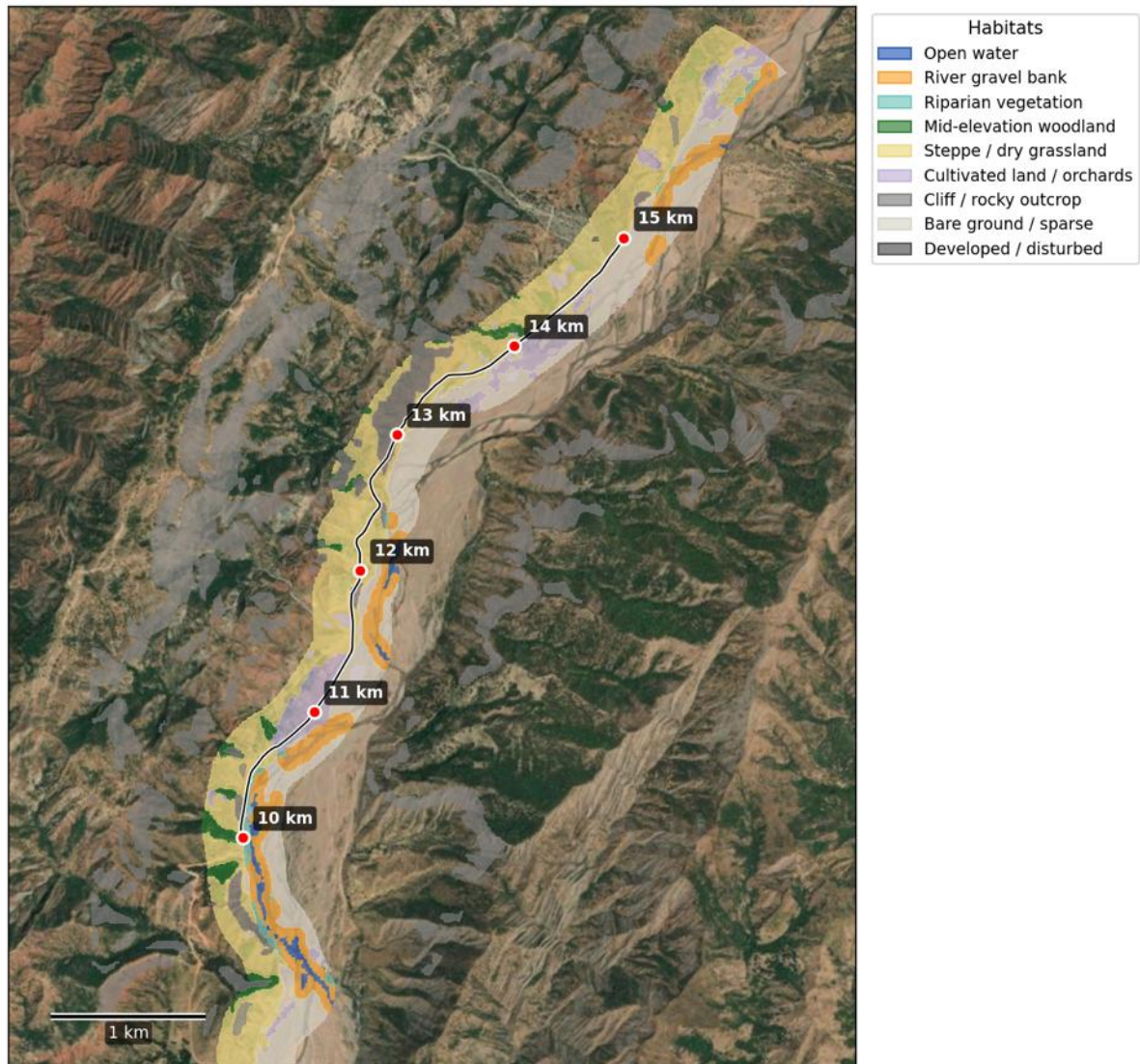


BSK Road Project — Habitat Map 5.0-10.0 km



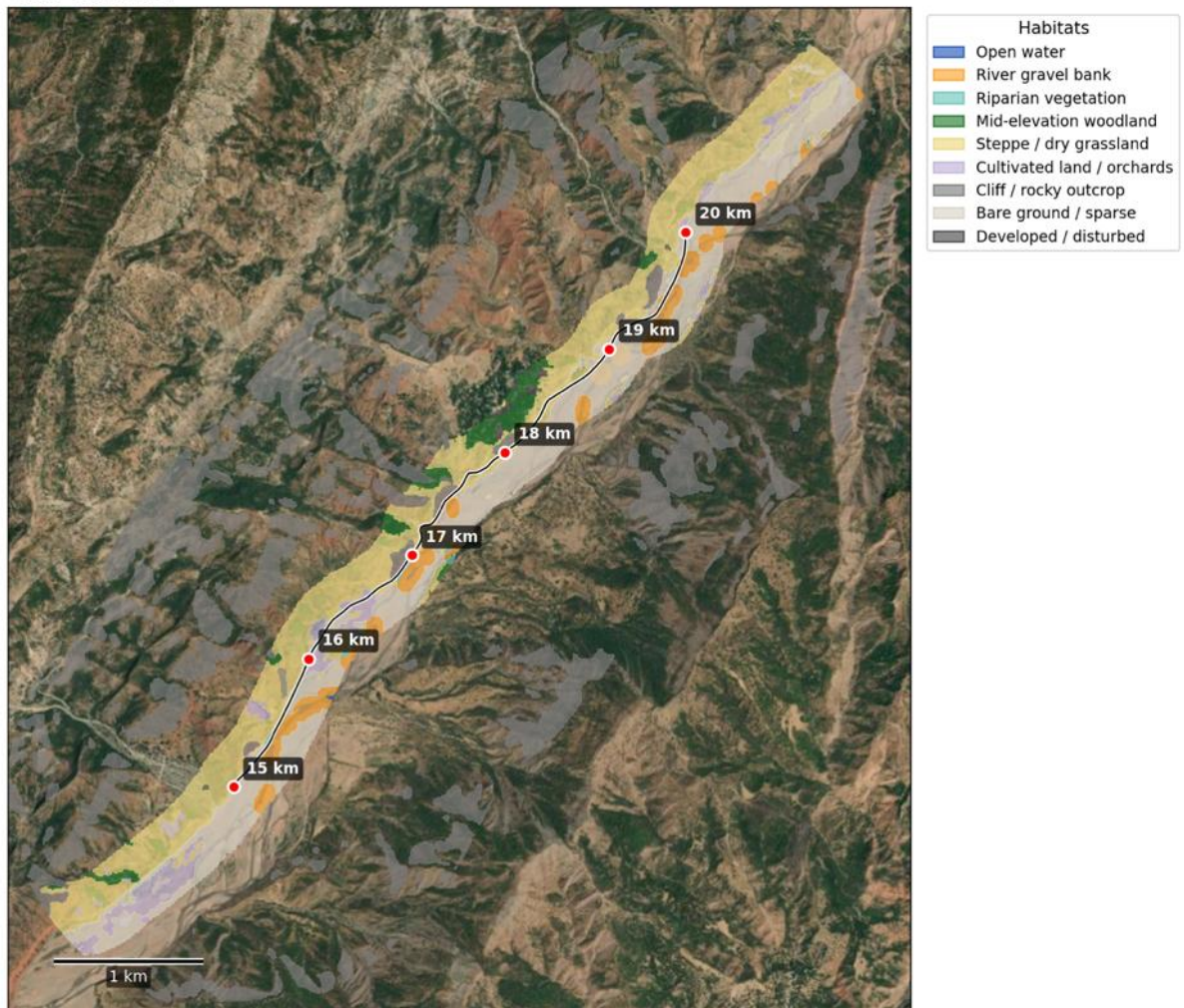


BSK Road Project — Habitat Map
10.0-15.0 km



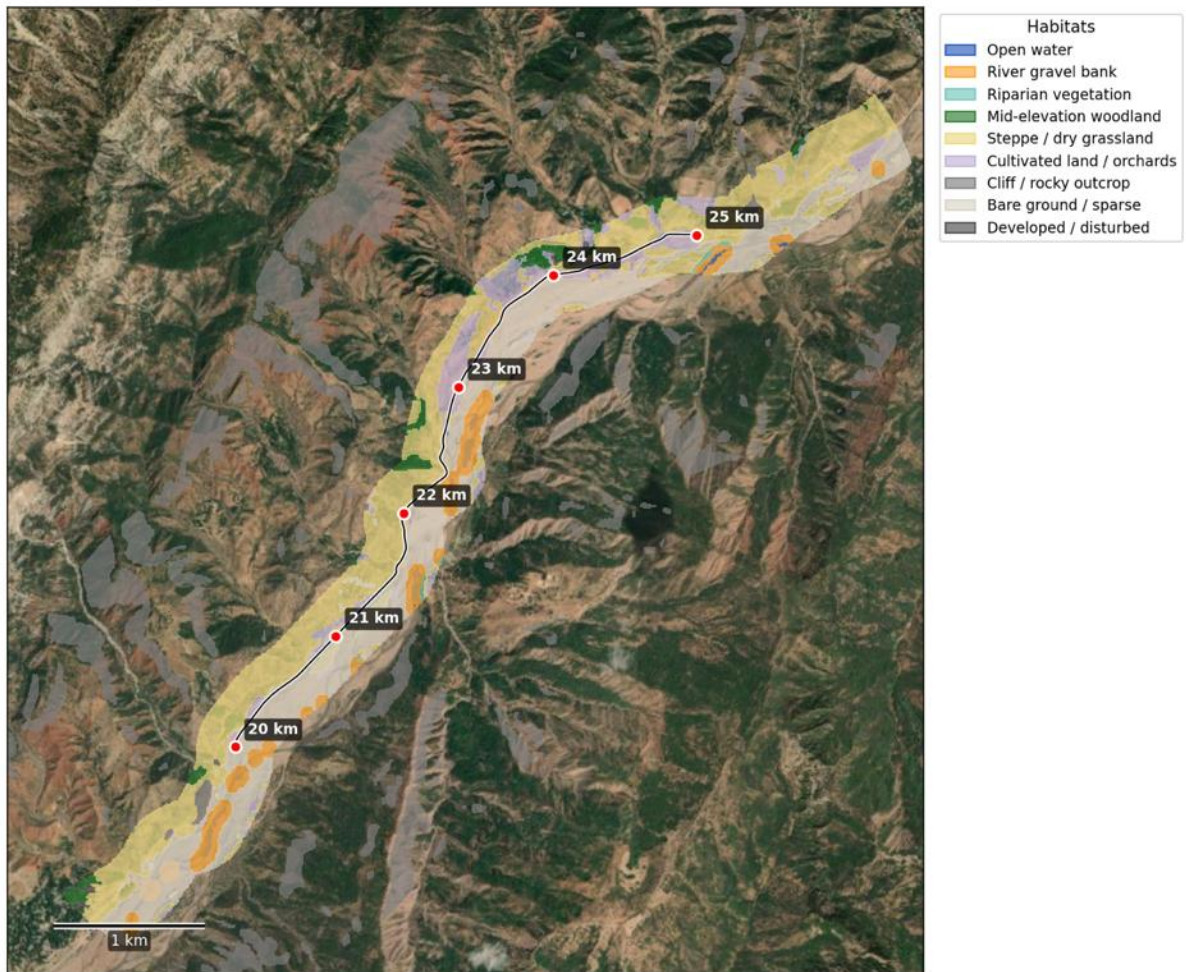


BSK Road Project — Habitat Map
15.0-20.0 km



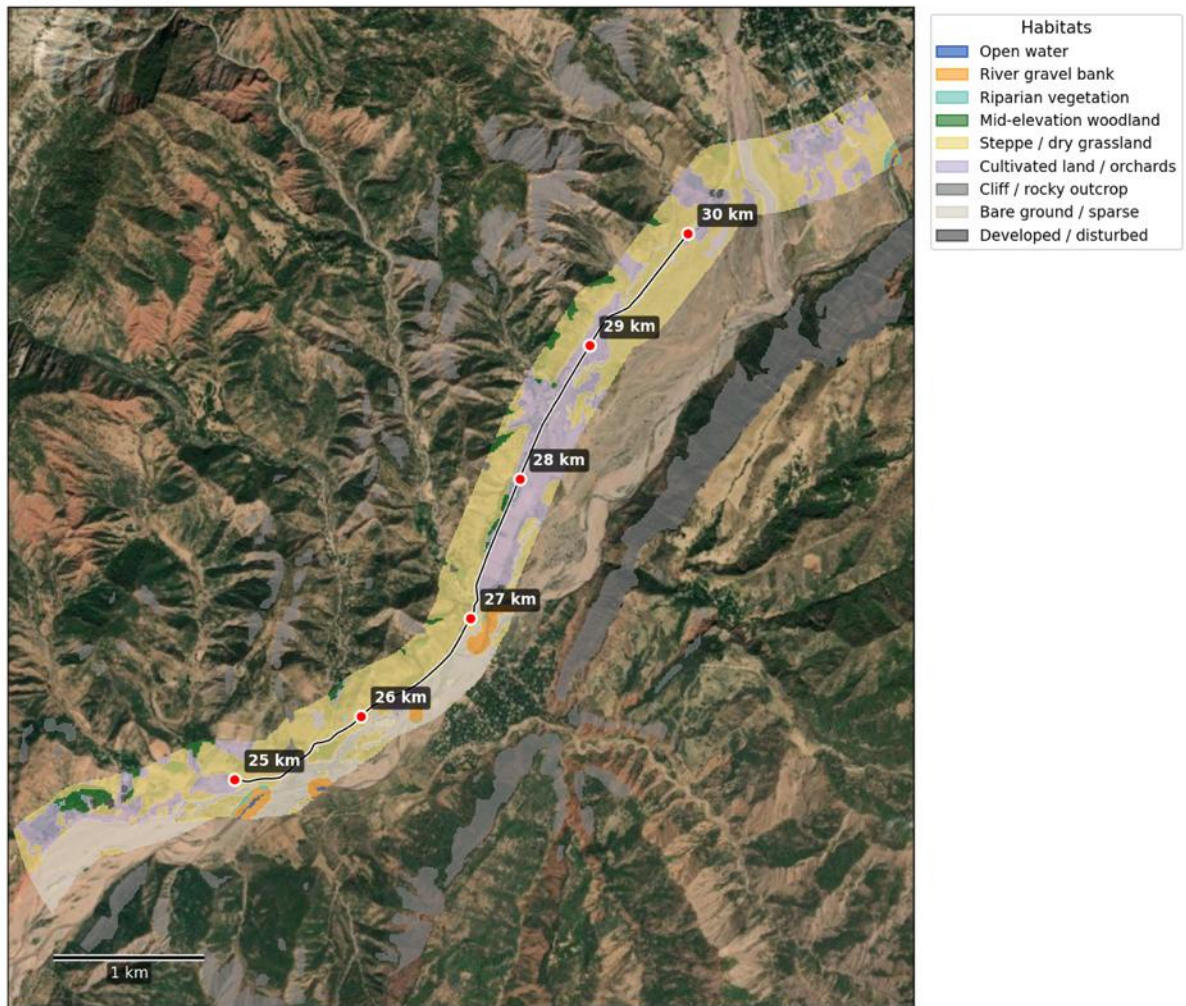


BSK Road Project — Habitat Map
20.0–25.0 km





BSK Road Project — Habitat Map
25.0-30.0 km



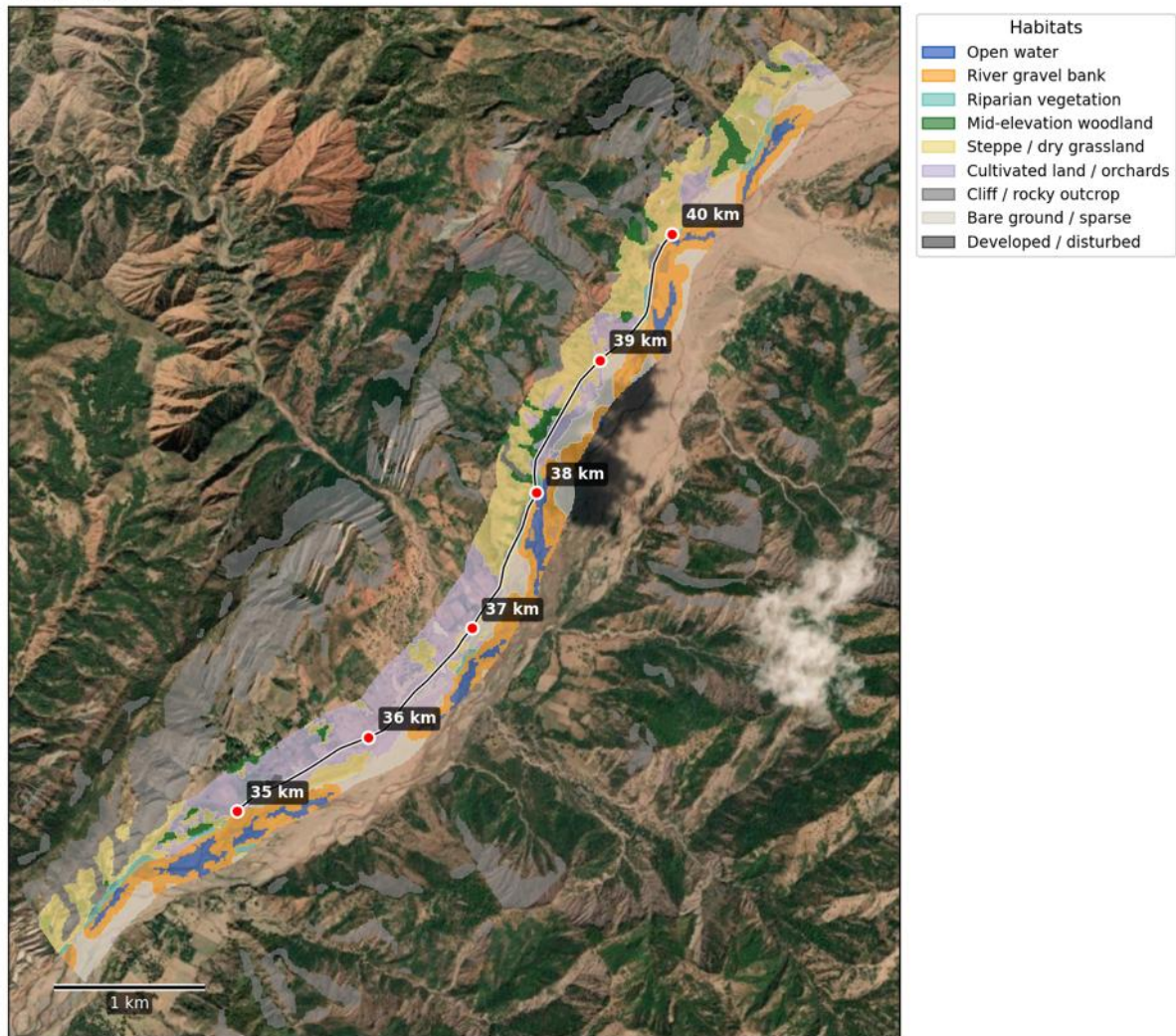


BSK Road Project — Habitat Map
30.0-35.0 km



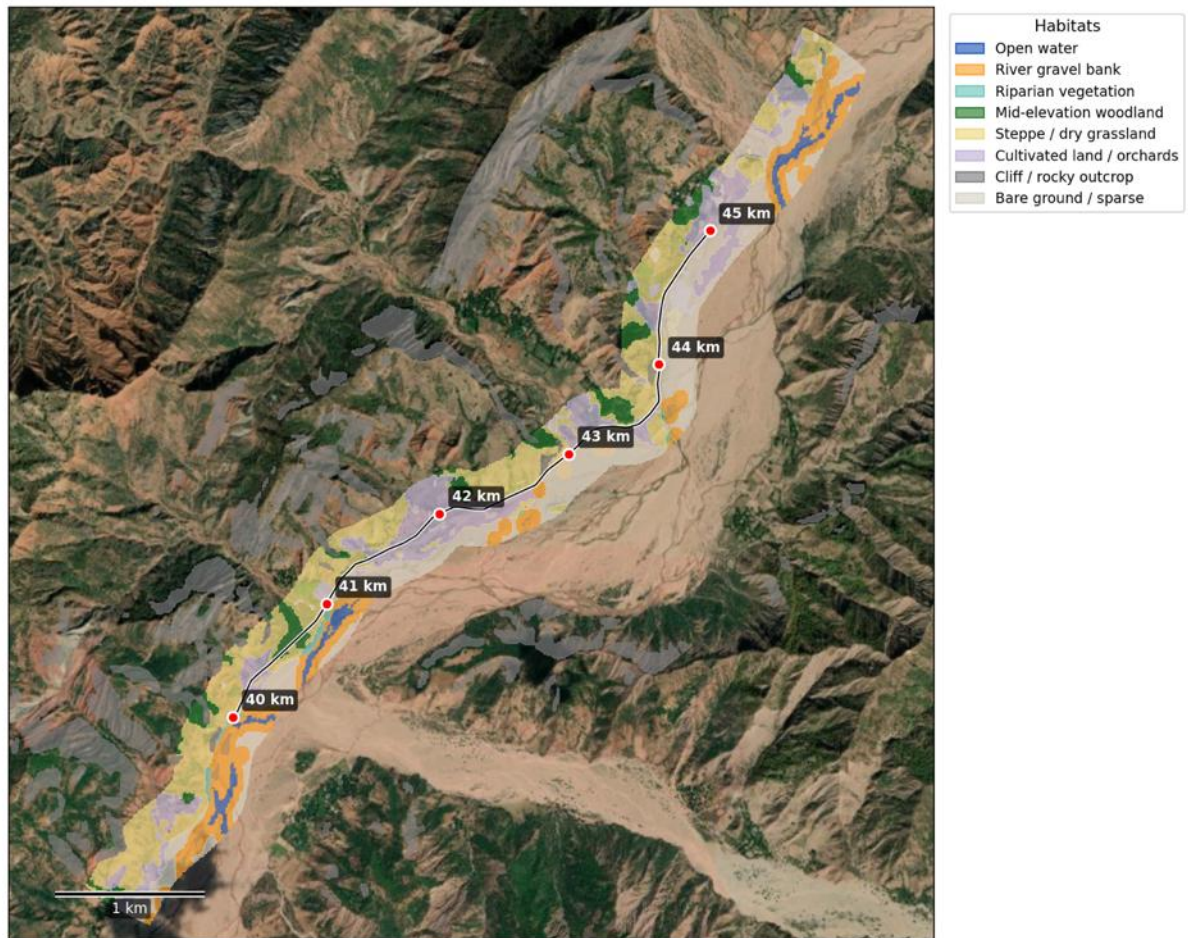


BSK Road Project — Habitat Map
35.0-40.0 km



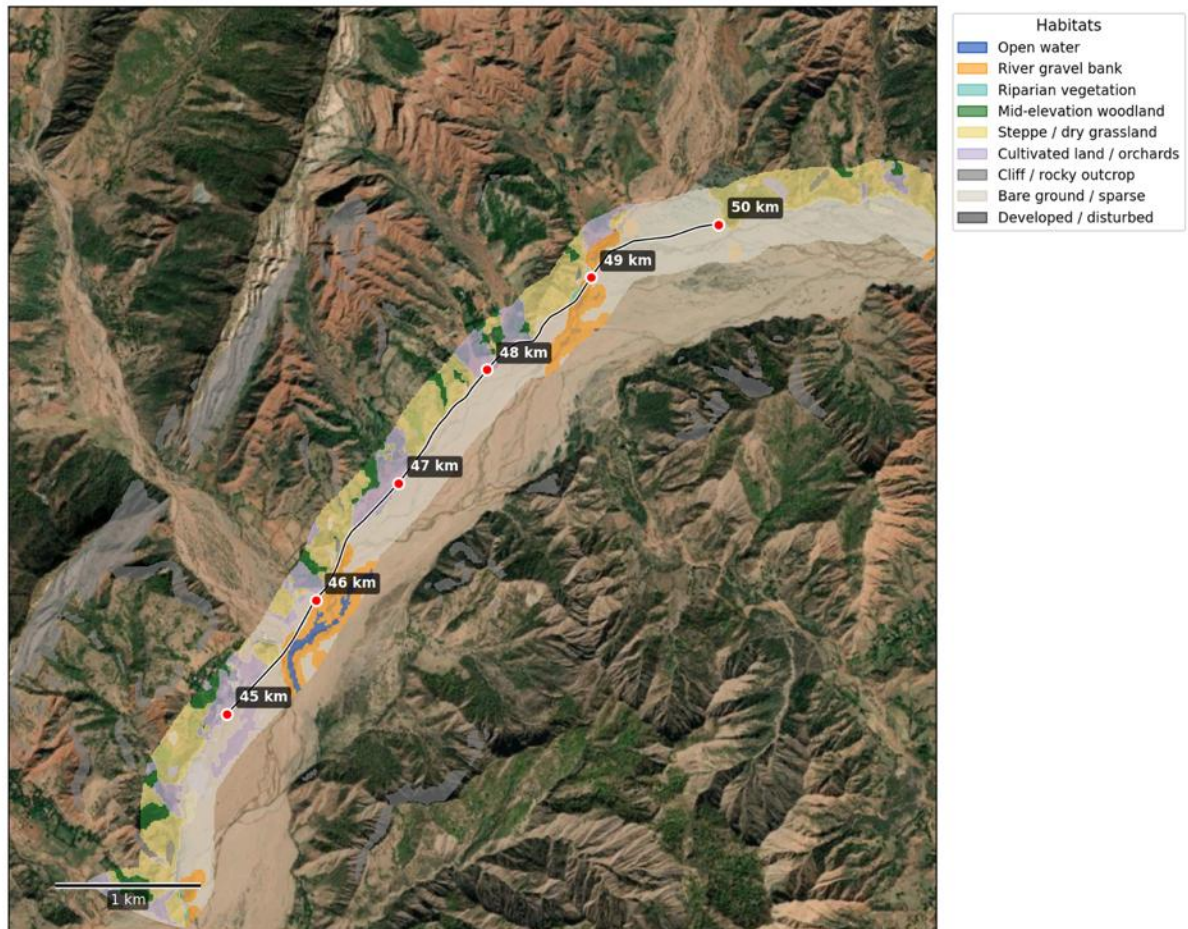


BSK Road Project — Habitat Map
40.0-45.0 km

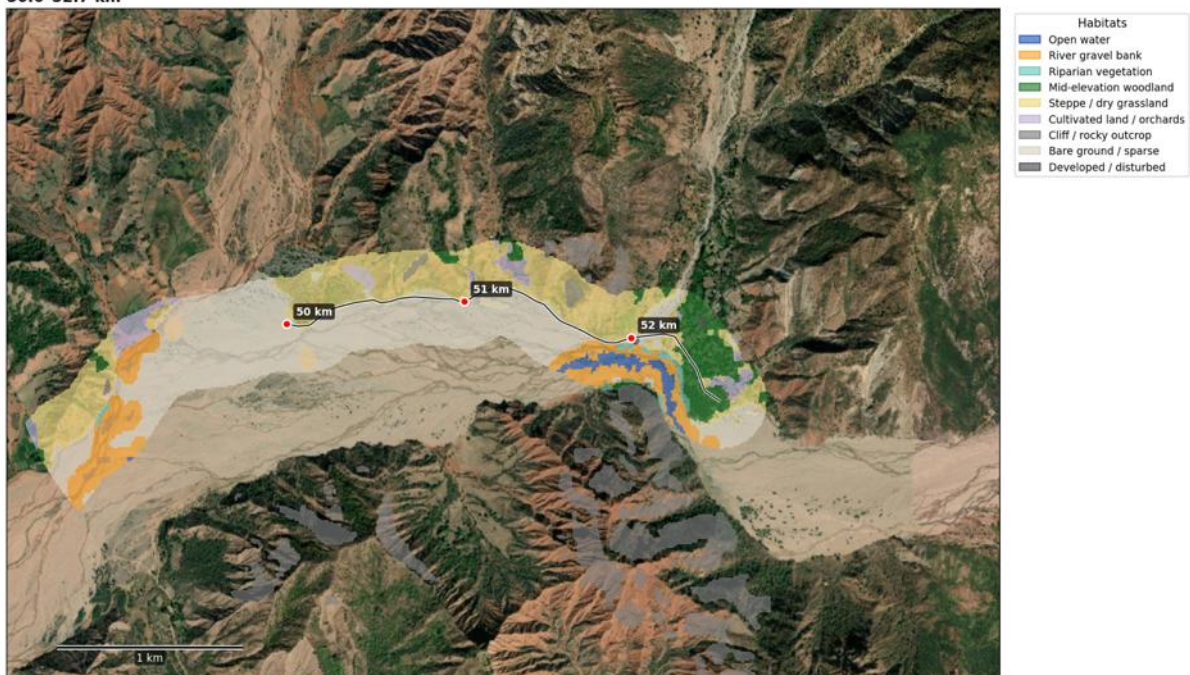




BSK Road Project — Habitat Map
45.0-50.0 km



BSK Road Project — Habitat Map
50.0-52.7 km





3.2.2 Bern Convention Resolution 4 and EU Habitats Directive Annex 1 screen

Each of the ten habitat classes mapped in Section 3.2.1 is screened against the relevant Bern Convention Resolution 4 habitat list and, for cross-reference, the EU Habitats Directive Annex I list. The screen tests whether each BSK habitat corresponds to a listed type, and whether — if listed — it triggers the EBRD ESR6 Critical Habitat threshold (Annex I priority habitat type, marked with an asterisk) or the Priority Biodiversity Feature threshold (Annex I non-priority, or Resolution 4 listed).

Table 10: Resolution 4 / Annex 1 screen of the BSK habitat classes.

BSK habitat	Closest EUNIS / Annex I code	Bern Res. 4	EU Annex I	CH / PBF outcome
Open water	C2.1 Permanent watercourses	Listed (Res. 4)	Not listed	PBF candidate — assessed under Criterion 1 below
River gravel bank	C3.62 Unvegetated river gravel banks; C3.55 Sparsely vegetated river gravel banks	Listed (Res. 4)	Not listed	PBF confirmed — see Section 3.2.3
Riparian vegetation	G1.11 / 92A0 Salix alba and Populus alba galleries	Listed (Res. 4)	Not priority (no asterisk)	Listed habitat present but as fragmented, degraded community along the existing alignment — not PBF in own right (see Section 3.2.3)
Mid-elevation woodland	Latifi broadleaf forest (Juglans-Acer-Platanus) and juniper forest (Juniperus seravshanica)	Not listed — Central Asian community	Not listed	BSK community is Central Asian walnut-maple-juniper, not European Carpinion-betulus; no direct EU/Bern analogue. Not a CH/PBF trigger habitat in own right.
Scrub / shrubland	Latifi mesophilic shrub (Rosa, Aflatunia, Exochorda) and shiblyak (Pistacia, Amygdalus)	Not listed — Central Asian community	Not listed	BSK shrubland is Central Asian xerophytic / mesophytic mid-slope community; no direct EU/Bern analogue. Not a CH/PBF trigger habitat in own right.
Steppe / dry grassland	Latifi herbaceous community (Origanum, Hypericum, Ziziphora) and semi-savanna	Not listed — Central Asian montane community	Not listed	BSK steppe is Central Asian montane and not analogous to the Ponto-Sarmatian Res. 4 grassland types.
Cultivated land / orchards	—	Not listed	Not listed	Not a natural habitat
Cliff / rocky outcrop	Bern Res. 4 lists chasmophytic vegetation by lithology	Not listed for this lithology	Not listed	BSK lithology (granite / volcanic / metamorphic) is not directly equivalent to the calcareous Res. 4 type 8210



BSK habitat	Closest EUNIS / Annex I code	Bern Res. 4	EU Annex I	CH / PBF outcome
Bare ground / sparse	—	Not listed	Not listed	Not a listed habitat
Developed / disturbed	—	Not listed	Not listed	Not a natural habitat

Two BSK habitat classes correspond directly to Bern Convention Resolution 4 listed habitats and are determined to be Priority Biodiversity Features in their own right: the River gravel bank class (corresponding to C3.62 Unvegetated river gravel banks and C3.55 Sparsely vegetated river gravel banks). The Riparian vegetation class corresponds to a Resolution 4 listed habitat (92A0 Salix–Populus galleries) but is treated as fragmented and degraded along the BSK corridor and is not a PBF in its own right (see the tugai paragraph in Section 3.2.3). No habitat present along the corridor is marked as a "priority habitat type" in EU Habitats Directive Annex I (i.e. asterisked types), and therefore no habitat triggers Critical Habitat under ESR6 paragraph 14(i)(a). No habitat present has been assessed under the IUCN Red List of Ecosystems and therefore no habitat triggers Critical Habitat under ESR6 paragraph 14(i)(b).

3.2.3 CH and PBF determinations for habitats

Critical Habitat

On the basis of the Resolution 4 / Annex I screen in Section 3.2.2, no habitat present along the BSK corridor qualifies as Critical Habitat under ESR6 paragraph 14(i)(a), 14(i)(b), or 14(i)(c). Specifically:

- **Paragraph 14(i)(a) — Annex I priority habitat type:** no habitat present along the corridor is marked as a priority habitat type (asterisked) in Annex I of the EU Habitats Directive.
- **Paragraph 14(i)(b) — IUCN Red List of Ecosystems CR or EN:** no habitat present has been assessed under the IUCN Red List of Ecosystems and the assessment cannot be made.
- **Paragraph 14(i)(c) — habitats important for national conservation of CR or EN species:** the Shurobdaryo river corridor potentially provides habitat for the Eurasian Otter (EN nationally), which would be a candidate for this criterion. However, otter signs were confirmed only at a single point in the May 2026 surveys (near Shahidon, km 30), and the EAAA is not anticipated to support a nationally important concentration of the species. The criterion is not triggered for habitats. The CH determination for the otter as a species is addressed in Section 3.3.

Priority Biodiversity Features

The Resolution 4 screen identifies two BSK habitat classes that correspond to listed Resolution 4 habitats and that the Project may directly affect:

- **C3.62 Unvegetated river gravel banks** — present along the Shurobdaryo and tributary channels through the alignment.
- **C3.55 Sparsely vegetated river gravel banks** — present along the same channels. The Bern Convention reference species composition for this habitat type does not match the BSK corridor composition; however, the habitat structure and function justify inclusion as a PBF on a precautionary basis.

The habitat map gives a combined **288.2 ha** of River gravel bank within the 250 m corridor buffer (Table 9). The qualitative impact assessment for these PBFs is set out in Section 4.1.2, which concludes a LOW residual significance after mitigation, supported by the scale of the gravel-bank reservoir



relative to the works footprint and by the natural river-bed dynamics that replenish disturbed gravels within 3–5 years

Riparian woodland

Latifi (Appendix 1) records tugai forests in the wider Sari Khosor region between approximately 500 and 1,600 m elevation, an envelope that overlaps the lower (southern) end of the BSK corridor. Classic tugai is characterised by *Elaeagnus angustifolia*, *Tamarix* spp. and *Hippophae rhamnoides* developed on wide braided floodplains. Two lines of evidence indicate that tugai is not present along the BSK corridor itself, despite the elevation overlap. First, the Shurobdaryo channel along the existing alignment is confined within a narrow valley with limited floodplain development, in contrast to the wide braided floodplains that tugai requires. Second, the May 2026 botanical surveys (Muhammadsoleh, 2026) did not record *Elaeagnus angustifolia* or *Tamarix* species within the corridor footprint. The riparian vegetation that is present is more accurately described, following Latifi's poplar forest type, as fragmented riparian scrub and bankside willow–poplar growth (*Salix* spp., *Populus tadshikistanica*, *Hippophae rhamnoides*), representing a disturbed and degraded expression of the 92A0 *Salix alba* and *Populus alba* galleries community. This vegetation type does not meet the threshold for designation as a PBF in its own right within the project corridor. However, it provides important supporting habitat for confirmed PBF species including the Eurasian Otter (sign confirmed near Shahidon, km 30) and Amu darya trout, and its protection is addressed through the bankside clearance minimisation and riparian reinstatement measures set out in Section 4.

Red Data Book flora

Latifi (Appendix 1) records that 20 plant species listed in the Red Data Book of the Republic of Tajikistan (2024) have been identified within the wider Sari Khosor area, including representatives of the genera *Tulipa*, *Eremurus*, *Juno*, *Iris* and *Allium*, typically occurring in highly limited habitats subject to ongoing pressure from land development, livestock grazing and plant collection. The May 2026 botanical survey of the BSK corridor (Muhammadsoleh, 2026) confirmed *Allium suworowii* within this list, recorded between km 33 and km 34 (see Section 3.3 for species-level assessment). The remaining 19 Red Data Book species recorded by Latifi for the wider area were not confirmed within the corridor footprint by the May 2026 survey but cannot be excluded for sections not yet surveyed in detail. The Steppe / dry grassland, Scrub / shrubland and Cliff / rocky outcrop habitats — which together cover 1,100 ha of the 250 m corridor buffer — are the habitat types in which the listed genera typically occur, and the pre-construction botanical survey commitment (Section 5 of this CHA, and BAP action P3) is the mechanism by which residual presence in the engineered footprint will be confirmed.

Habitat modification status

The BSK corridor is subject to extensive long-duration grazing pressure (Latifi, Appendix 1; HYR2, 2025), which has substantially modified the regeneration function of the woodland, scrub and steppe habitats while leaving species composition largely native. Following the ESR6 definition framework, the corridor matrix is therefore characterised as modified-natural habitat — composed of native species but with primary ecological functions (in particular tree and shrub regeneration) substantially modified. The cropland and developed classes (Table 9, 370 ha) are modified habitat. The open water, gravel bank and cliff classes (Table 9, 476 ha) retain natural habitat status. The PBF and CH determinations in Section 3.2.2, Section 3.2.3 and Section 3.3 apply to specific features within this matrix and are unaffected by the matrix classification.

Summary of habitat-level CH and PBF determinations:

- No habitat qualifies as Critical Habitat under any of the ESR6 paragraph 14(i) sub-criteria.
- Two habitat types qualify as Priority Biodiversity Features: C3.62 Unvegetated river gravel banks and C3.55 Sparsely vegetated river gravel banks, combined area 288.2 ha within the 250 m corridor buffer.



- The riparian *Salix*–*Populus* community is a supporting habitat for confirmed PBF species but is not itself a PBF.

3.3. Criterion 1 Threatened Species

The IBAT-derived long-list screen in Table 7 identified no shortlisted species meeting the Critical Habitat thresholds within the EAAA on the desk data alone. Wide-ranging and passage species on that list — raptors and larger mammals — may occur within the EAAA seasonally or as part of a large home range, but its carrying capacity is not adequate to support five reproductive units (breeding pairs) of any such species; for the CR and EN species listed, the EAAA is not anticipated to hold more than 0.5% of any global population, and no VU species is present whose adverse effect would risk uplisting. The desk screen alone therefore returned no Critical Habitat determination.

The May 2026 field surveys confirmed species not captured by the IBAT long list. The botanical survey (Muhammadsoleh, 2026) confirmed two Critically Endangered wild pears within the corridor — *Pyrus tadshikistanica* (6 individuals at km 11, 15, 29, 34, 48) and *P. korshinskyi* (16 individuals at km 16, 37, 43, 47), both CR on the IUCN Red List and in the Red Data Book of the Republic of Tajikistan (2024). Both were absent from the IBAT long list and the initial desk study, and are assessed here against the Criterion 1 thresholds; detection confidence was highest in the May window, the active phenological period for tree-form taxa. The determination is therefore made on the combined basis of the desk screen and the field records.

Of the three CR/EN thresholds in Table 2, the first (paragraph 14(ii)a, Habitats Directive priority species) does not apply, as Tajikistan is outside the scope of that Directive. The second (14(ii)b: $\geq 0.5\%$ of global population and ≥ 5 reproductive units) cannot be applied with precision: the IUCN Red List gives no numerical global estimate for either species, both having very restricted ranges centred on the Vakhsh and adjoining ranges. The reproductive-units component is met for both (16 and 6, each > 5), but the global-percentage component is unassessable, so 14(ii)b is not the operative basis.

The third test (14(ii)c: an important national concentration of a nationally CR or EN species) is the operative threshold, both species being nationally CR and *P. tadshikistanica* endemic to Tajikistan. Eastwood, Lazkov & Newton (2009), for the IUCN/SSC Global Tree Specialist Group, confirm *P. tadshikistanica* as CR (B2ab(iii,v)), restricted to the Darvaz Mountains at 1,300–1,600 m with very small, fragmented populations; the corridor at km 11–48 falls within this band and range. The closest national reference point is Boboev (2022), who estimated ~300 fruit-bearing trees and ~2,000 vegetatively-propagated saplings in the Dashtijum/Kulob zone, with no observed seed reproduction.

Against that reference, the 6 confirmed *P. tadshikistanica* individuals represent ~2% of the closest documented national population — material for a species this restricted. Noting that the Boboev figure is a single-zone count likely to under-represent the national total, and that EBRD ESR6 GN (2025) directs a precautionary approach where data are incomplete, the 14(ii)c test is met and Critical Habitat is triggered for *P. tadshikistanica*. The vegetative-only reproduction recorded by Boboev makes each mature individual non-substitutable and limits seed-based offsets. For *P. korshinskyi*, 16 mature units along the same corridor — in a national range the Red Data Book describes as small and fragmented along the Vakhsh–Hazrati Shoh axis — likewise constitutes an important national concentration on the same precautionary basis, and Criterion 1c Critical Habitat is triggered. Both determinations are reinforced by the species' inclusion as targets of the BGCI/Kulob Botanic Garden Darwin Initiative project (ref. 31-017), a parallel paragraph 12(iii) basis.

The implications are: (i) the mitigation hierarchy applies with net gain (not no-net-loss) as the required outcome; (ii) avoidance is tested first, via design-team review of micro-realignment at each confirmed cluster (km 11, 15, 16, 29, 34, 37, 43, 47, 48); (iii) translocation of mature wild pears is a last resort only, with low expected success — particularly for *P. tadshikistanica* given its vegetative-only reproduction; and (iv) a Biodiversity Offset Programme for both species discharges the net-gain



obligation, developed with the BGCI/Darwin project (ref. 31-017), which is already propagating both ex-situ. Mitigation entries appear in Section 4.

3.4. Criterion 2 Endemic or Range Restricted Species

The 147 endemic plant species recorded by Latifi (2026) in the broader Sari Khosor area reflect the biogeographic character of the South-Western Natural Province of Tajikistan rather than a concentration unique to the project corridor. The EAAA is considered unlikely to hold more than 10% of the global population of any individual endemic species given the broad distribution of endemism across the province as a whole. Two Tertiary relict species — *Ostrowskia magnifica* and *Petilium eduardii* — are noted by Latifi within the wider area. Both species have restricted but multi-country distributions spanning Tajikistan, Uzbekistan, and Afghanistan. Neither is assessed on the IUCN Red List as threatened. While global population data for these species is limited, their occurrence across multiple countries and mountain systems means the project corridor is not considered to hold a disproportionate or irreplaceable fraction of either population. The project involves rehabilitation of an existing road along a long-disturbed corridor, and the works footprint does not extend into the undisturbed mountain slopes and rocky habitats where relict species are most likely to occur. On this basis Criterion 2 CH is not triggered. Both CR *Pyrus* species determined as triggering Critical Habitat under Section14(ii)c (Section 3.3) are also likely range-restricted under the AoO <100,000 km² threshold — *P. tadshikistanica* as a Tajikistan endemic, *P. korshinskyi* across a restricted four-country range. The Section14(ii)c determination is the operative trigger; the range-restricted character of both species reinforces rather than substitutes for that determination.

3.5. Criterion 3 Migratory or Congregatory Species

A number of species listed in Table 7 are passage species, moving through Tajikistan from summer breeding areas to wintering areas. There is no indication that the EAAA holds habitats which support high numbers of passage birds which would qualify the EAAA as CH.

There are a fish species which are seasonal migrants, moving up the rivers within the area to spawn. None of these are anticipated to be present within the EAAA in numbers which represent more than 1% of the global population at any point of their life cycle. Nor is there habitat present which would be used in times of environmental stress by high numbers of migratory or congregatory species.

The Shamsiddinov (2023) aquatic survey explicitly confirms that adult fish in the Shurob River, including the Amu Darya trout (*Salmo trutta oxianus*), undertake upstream spawning migrations in autumn, congregating in the upper reaches of the river to spawn. This is a field-confirmed migration event occurring within the project river corridor across all four sampling points. *Salmo trutta oxianus* is documented by Artaev et al. (2025) as a residential migratory form of *Salmo trutta* recorded from the mountainous part of the Amu Darya basin, which includes the Surkhob/Shurob system. The taxonomic status of *S. trutta oxianus* is treated variably in the literature — described as a subspecies by some authorities, treated as a regional form or synonym of *S. trutta* by others. The CHA adopts the *S. trutta oxianus* designation as used by Shamsiddinov (2023) and Artaev et al. (2025). Spawning biology of *S. trutta* and its regional forms is consistent with an autumn-to-winter spawning window; the ESIA adopts November–February as the exclusion period for in-river works on this basis.

Paragraph 14(iii) requires the EAAA to sustain, on a cyclical or otherwise regular basis, ≥ 1% of the global population at any point of the species' lifecycle. No defensible global population estimate is available for *S. trutta oxianus* (at the regional-form taxonomic level) and the species is not separately assessed on the IUCN Red List. The Section14(iii) test is therefore **unassessable** — it is not failed; the data are not available to support either a positive or a negative determination. EBRD Guidance Note (2025) directs that the precautionary approach is appropriate where data are incomplete. For species globally listed CR or EN, the precautionary approach would normally support a precautionary CH determination on unassessable Section14(iii) data. *S. trutta oxianus* is not globally Red Listed at CR/EN at the regional-form level and the precautionary CH determination is therefore not engaged.



S. trutta oxianus is listed as Vulnerable (VU) in the Red Data Book of the Republic of Tajikistan (2024) at the level of the regional form. On the basis of this national VU listing, supported by confirmed field presence and a confirmed regular spawning migration concentrated in the project river corridor, the species is treated as a PBF under EBRD ESR6 paragraph 12(ii)c (national CR/EN species — applied here precautionarily for a national VU form, reflecting the limited national distribution of the form and the sensitivity of the spawning aggregation to in-river works). The autumn spawning aggregation is the principal feature for which the PBF obligation applies; the November–February in-river works exclusion is the operative mitigation. The exclusion window is established as a firm construction constraint and is reflected in the mitigation measures in Section 4.

3.6. Criterion 4 – Highly Threatened or Unique Ecosystems

Criterion 4 (highly threatened or unique ecosystems, ESR6 paragraph 14(i)) is determined in full at Section 3.2.3 on the basis of the Resolution 4 / Annex I habitat screen. No habitat along the corridor qualifies as Critical Habitat under any of the paragraph 14(i) sub-criteria: none is an Annex I priority habitat (14(i)(a)); none has an IUCN Red List of Ecosystems CR/EN assessment (14(i)(b)); and while the Shurobdaryo riparian corridor is candidate habitat for the nationally Endangered Eurasian Otter (14(i)(c)), otter signs were confirmed at only a single point (near Shahidon, km 30) and the EAAA is not anticipated to support a nationally important concentration. The negative results through the lower corridor are consistent with the river morphology, which broadens and shallows below the confined upper reach and does not provide the deeper, rocky holting and foraging habitat the species requires. Classic tugai is likewise absent from the corridor (confined channel, no *Elaeagnus*/*Tamarix* recorded); the bankside *Salix*–*Populus* community is supporting habitat for PBF species but not a qualifying ecosystem in its own right.

Criterion 4 — considered and not triggered. Habitat-level PBFs (C3.55 / C3.62 river gravel banks) and supporting riparian habitat are carried forward under the PBF and mitigation provisions of Sections 3.2.3 and 4.

3.7. Criterion 5 – Key Evolutionary Processes

EBRD ESR6 (2024) and the associated Guidance Note identify areas associated with key evolutionary processes as a fifth criterion for Critical Habitat determination. This criterion has been considered in the context of the BSK project.

The Latifi (2026) assessment records 147 endemic plant species and two Tertiary relict species — *Ostrowskia magnifica* and *Petilium eduardii* — within the broader Sari Khosor area. While this level of endemism reflects the biogeographic character of the South-Western Natural Province of Tajikistan, the project involves rehabilitation of an existing road along an alignment that has been subject to human disturbance for many decades. The direct footprint of works is limited and largely confined to the existing road corridor. The endemic and relict flora of the wider area is not considered to be materially threatened by the project at the scale proposed. The mitigation measures proposed in Section 4 — including pre-construction botanical survey and translocation of any Red Book plant species identified within the works footprint — are considered adequate to address any residual risk to individual endemic plant populations within the corridor.

Conclusion: Criterion 5 — considered and not triggered at the scale and footprint of this project.

3.8. Priority Biodiversity Features

The assessment identifies the following species as Priority Biodiversity Features. Seven are drawn from the IUCN Red List:

- | | |
|----------------------------|------------------------|
| • <i>Vormela peregusna</i> | Marbled Polecat |
| • <i>Aquila heliaca</i> | Eastern Imperial Eagle |
| • <i>Tulipa praestans</i> | No common name |



Vista
Environment

- *Tulipa anisophylla* No common name
- *Ovis vignei* Urial
- *Columba eversmanni* Yellow-eyed pigeon
- *Circus macrourus* Pallid Harrier

From the national Red List the following 14 species are also classed as PBFs on a precautionary basis. Note that the Bukhara Urial (*Ovis vignei bochariensis*) is the national-listing of the same animal carried as Urial (*Ovis vignei*) on the IUCN list above; it is listed in both places at subspecies level but counted once for assessment purposes.

- *Dorcus sewertzowi* - ground dwelling beetle
- *Afarsia avinovi* - an endemic butterfly species
- *Acosmeryx naga hissarica* Hawkmoth species - note scientific name is used in Tajikistan Red List but is not considered valid by other authorities and should be classed as *Acosmeryx naga* which is a more common species
- *Hyles apocyni* Hawkmoth species
- Bearded vulture (*Gypaetus barbatus*)
- Egyptian vulture (*Neophron percnopterus*)
- Saker falcon (*Falco cherrug coatsi*)
- Barbary falcon (*Falco pelegrinoides*)
- Tien Shan brown bear (*Ursus arctos isabellinus*)
- Eurasian otter (*Lutra lutra*)
- Eurasian lynx (*Lynx lynx isabellinus*)
- Snow leopard (*Panthera uncia*)
- Bukhara urial (*Ovis vignei bochariensis*)
- European Glass Lizard (*Pseudopus apodus*), EN nationally — single incidental corridor record (May 2026); no nationally important concentration implied.

Additional Priority Biodiversity Features

The May 2026 field surveys add the following species to the PBF list:

- *Malus sieversii* – wild apple, EN (national RDB); CITES; two sites confirmed along the alignment
- *Aegypius monachus* – Cinereous Vulture; IUCN NT, national VU; added as PBF under paragraph 12(iii) on the basis of one confirmed active corridor nest at km 2–4 and a national breeding population estimated at 40–50 pairs
- *Salmo trutta oxianus* — Amu darya trout; national VU (RDB 2024); PBF under paragraph 12(ii)c on the basis of a field-confirmed autumn spawning migration concentrated in the corridor (Shamsiddinov, 2023). Operative mitigation: November–February in-river works exclusion (Section 4).

Two further species — *Pyrus tadshikistanica* (6 confirmed individuals; CR IUCN/national RDB, Tajikistan endemic) and *Pyrus korshinskyi* (16 confirmed individuals; CR IUCN/national RDB) — are determined as triggering Critical Habitat under EBRD ESR6 paragraph 14(ii)c (see Section 3.3), not PBF, and are therefore not added to the PBF list. Both species and their habitat fall under the net-gain obligation rather than the no-net-loss obligation applicable to the PBFs above.

The corridor presence of three further species already on the PBF list has been upgraded from *likely* to *confirmed* by the May 2026 surveys: Egyptian Vulture (6 active corridor nests, one at km 2–4 within the works zone); Barbary Falcon (one cliff-face individual recorded at Point 7 of the bird survey in Stage 1 and at Point 10 in Stage 2); and Eurasian Otter (signs confirmed near Shahidon village in the upper Shurobdaryo, approximately 300 m downstream of an active bridge construction site,



corroborated by LEK interviews; negative results in the lower corridor are consistent with the morphological argument).

Pallid Harrier (*Circus macrourus*, IUCN NT, Bern Annex 1). The species is field-confirmed in the corridor at km 1.5 (May 2026 bird survey) as a passage migrant; corridor habitat is not core breeding or wintering habitat for the species, and no nationally important concentration is anticipated.

3.9. Legally Protected and Internationally Recognised Areas of Biodiversity Value

EBRD ESR 6 does not directly assume that legally protected or internationally recognised sites will be critical habitat. However, the ESR does place a requirement for the client to take account of such sites and avoid direct and indirect impacts on the integrity of such sites and the species or attributes for which they are recognised.

Sites considered within this assessment are those shown in Table 4 and Table 5. The assessment of potential effects on these sites is set out in Section 4.



4. Impact Assessment

4.1 Potential Project Impacts on CH PBFs

4.1.1 Critical Habitat

Critical Habitat has been determined on a precautionary basis for both *Pyrus tadshikistanica* and *Pyrus korshinskyi* (see Section 3.3). Project impacts on these CR species and their habitat are assessed in the species-based PBF/CH table below (Section 4.1.3), and the mitigation hierarchy is applied with net gain as the required outcome under EBRD ESR6 paragraph 14(ii)c. A Biodiversity Offset Programme covering both species will be developed as the principal instrument for the formal demonstration of net gain. No other habitats, ecosystems or species within the EAAA trigger Critical Habitat under any of the five EBRD ESR6 criteria.

4.1.2 Habitat Priority Biodiversity Features

There are two PBFs relating to habitat type. Both of these relate to the river gravels, one being sparsely vegetated gravels and the other unvegetated gravels.

The project has the potential to affect these habitat types directly at crossings of tributaries to the main river. Bridges will be developed at these locations and the footings and associated construction works will require direct movement of gravels to enable cofferdams and construction activities.

There will also be indirect impacts due to machinery crossing at tributary points until existing highway which has been washed out at such locations is constructed.

Additionally, the project proposes to either win materials for construction from the river bed or disposed of excess spoil on the river gravels. The working of gravels beds for material for roads is a common feature within Tajikistan and other surrounding nations. These activities will have a negative effect on the habitat PBFs which may be significant if not controlled during the detailed design of the project and construction activities.

Assessment of Effect Significance

The assessment of effects and significance shown below for the two habitats utilises the same methodology and terminology used within the overall project ESIA.

Magnitude – The magnitude of the impacts on the gravels is considered to be MINOR based on the context/scale of the impacts and the strong likelihood that overtime the effects will be reversed through natural river bed processes.

Spatial Scale - Contextually, the scale of the impact will be low, with limited workings within the 56 km of river bed which as noted is in some locations nearly one kilometre wide. There are also similarly habitat types within the wider EAAA which will not be affected. The Spatial Scale is therefore considered to be SMALL

Duration and Reversibility – the impact will occur during the construction period, and in any single location should be short term, up to one year. Following this period there will not be additional disturbance of the river gravels. The river bed is highly braided and shows evidence of being highly dynamic, with new channel routes and changes in gravel patterns. Any losses of gravels through winning of materials should be replaced during subsequent flood events where gravels and even larger stones will be mobilised. It could reasonably be expected that losses will be replaced within a 3 – 5 year period and are considered to be SHORT TERM effects.

Probability - the impacts under consideration are as a result of the proposed construction processes and so are considered as DEFINITE.

Sensitivity of Receptors – as PBFs they are not of the highest value, such as Critical Habitat, CR or EN global species or internationally recognised sites. They are therefore classed as being of Medium



value, although as a habitat they are considered likely insensitive to long term changes as they are part of an existing dynamic system within the flood plain.

Based on the ESIA methodology for determination of significance of risk, this combination of factors leads to a likely LOW level of significance of effect.

Mitigation

Mitigation shall focus on minimisation of the footprint of disturbance. In particular the winning or disposal of materials shall where possible be undertaken outside of the main river channels. Vegetated side bars and midstream islands shall not be used for gravel winning. The project shall not dispose of materials into the river which will readily mobilise into the water. This includes contaminants and fine sediments. Only natural material which may have formed part of an historical river bed shall be disposed within the water course.

To avoid related effects such as changes in water characteristics due to release of fines, the works shall wherever possible be conducted in non-flood conditions, and in locations where the extraction is taking place in dry conditions.

Construction machinery which needs to be near the water shall be stored above the predicted 1 in 50 flood event high water level.

All other mitigation measures to manage risk to the water course but not directly related to these habitat types during construction shall be fully implemented.

Following implementation of the mitigation measures set out above, the final effect is considered to be of LOW to Not Significant.

4.1.3 Species-based PBFs

Preamble

The potential impacts of the project on species will depend on a number of factors. For example, the animal species which are mobile may be affected by disturbance during both the construction and operational phases of the project and may be displaced from their current range/habitats. Plant species will tend to be mainly affected during the construction works through direct impacts on their habitats such as loss of substrate. Operational impacts on plant communities may occur due to localised changes in soil chemistry and physical attributes. These may include changes to soil moisture where the road changes local drainage patterns, or salination of soils due the use of de-icing agents during winter periods.



Species	Notes and Potential Effects	Mitigation	Significance
Marbled Polecat (Vormela peregusna)	Most commonly found in desert or steppe habitats so unlikely to be found close to the proposed physical works for the project. This species is more fossorial than other species of the weasel family so has a reduced risk of harm from traffic incidents during the operation period.	Pre-construction survey for possible crossing points of this species from higher ground to water course.	Considered to fall below the likely threshold of significance. Not Significant
Eastern Imperial Eagle (Aquila heliaca)	Very minor loss of potentially used habitat within part of a wide home range. Disturbance of nesting birds and chicks during construction period causing abandonment of nests.	Pre-construction survey for nest sites of this species. No works to be undertaken within 250 m from any identified active nest sites. Nest to be monitored by professional bird specialist to ensure the 250 m buffer is adequate to prevent disturbance at the nest.	Considered to fall below the likely threshold of significance.
Tulipa praestans	Loss of individual within population Localised changes in soil parameters causing sub-optimal conditions for this species.	Pre-construction survey for nest sites of this species. If present, bulbs to be lifted when dormant, stored and replanted in appropriate local habitats.	Considered to fall below the likely threshold of significance. Not Significant
Tulipa anisophylla	Loss of individual within population Localised changes in soil parameters causing sub-optimal conditions for this species.	Pre-construction survey for nest sites of this species. If present, bulbs to be lifted when dormant, stored and replanted in appropriate local habitats.	Considered to fall below the likely threshold of significance. Not Significant
Yellow-eyed pigeon (Columba eversmanni)	Minor loss of habitat and disturbance during construction and operational phases.	Pre-construction survey for nest sites of this species. No works to be undertaken within 75 m from any identified active nest sites. Nest to be monitored by professional bird specialist to ensure the 75 m buffer is adequate to prevent disturbance at the nest.	Considered to fall below the likely threshold of significance. Not Significant
Dorcus sewertzowi	A forest species of ground beetle and unlikely to occur within its natural range in the habitats to be affected by the project.	None required	Not Significant
Afarsia avinovi	Distribution covers the Peter the Great Mountain (the vicinity of Khazor Chashma village), Khazrati Shoh ridges (the valley of the Obi Mazor and Yakhsu rivers) and the mountain massif of the vicinity of Dangara. Therefore, lies outside the area of influence.	None required	Not Significant

Species	Notes and Potential Effects	Mitigation	Significance
<i>Acosmeryx naga hissarica</i>	Sub species is not recognised and the name is invalid. Listed in Tajikistan Red List as sub species. Location of records and habitats preferred are not representative of project area.	None required	Not Significant
<i>Hyles apocyni</i>	Note recorded from project area but habitats may be suitable, as is found associated with aquatic vegetation including dense scrub and reeds along rivers and canals. Limited loss of vegetation likely and habitats within project area are generally sparse.	None required	Not Significant
<i>Barbus capito conocephalus</i> (Turkestan Barbel)	Not confirmed in the project river corridor by field survey but recorded in the broader EAAA by Latifi (2026). Potential impacts are limited to in-river and bankside works at bridge and crossing locations — primarily sedimentation, turbidity, and substrate disturbance affecting spawning and foraging habitat. The species is benthic and sensitive to fine sediment loading.	Pre-construction targeted survey to confirm presence or absence in the project river corridor. If confirmed, in-river works at crossing locations to be timed outside the autumn spawning period (September–November). Silt and turbidity controls to be implemented at all in-river works regardless of confirmation status.	Subject to pre-construction survey outcome. If absent, Not Significant. If confirmed present, significance of residual effects considered LOW following mitigation.
Amu darya trout (<i>Salmo trutta oxianus</i>)	Shamsiddinov (2023) confirms that adult trout undertake upstream spawning migrations in autumn within the project river corridor. Spawning aggregations concentrated in the upper reaches of the river are highly vulnerable to direct mortality, redd destruction, and suspended sediment loading during in-river construction works. Bridge foundation works, cofferdam installation, and gravel extraction at river crossings represent the principal risk activities.	All in-river works — including bridge foundations, cofferdams, gravel extraction, and machinery river crossings — are prohibited between 1 November and 28 February inclusive. This exclusion window applies along the full length of the project corridor. Where works cannot be scheduled outside this window due to programme constraints, written justification must be submitted to the Engineer and agreed with EBRD before works commence. Turbidity and silt controls shall be implemented at all in-river works regardless of timing. A qualified aquatic ecologist shall inspect active work areas adjacent to the river during the exclusion window boundary periods (October and March) to confirm spawning activity has ceased before works resume.	NOT SIGNIFICANT following implementation of the exclusion window and silt controls.
<i>Gypaetus barbatus</i> — Bearded Vulture (NT globally; national RDB EN)	A wide-ranging cliff-nesting and bone-feeding raptor with suitable cliff-face habitat within the EAAA. National breeding population estimated at 70–80 individuals (Ergashev, 2026, citing Tajik Red Data Book), making any confirmed corridor nest a meaningful national receptor. The May 2026 surveys did not field-confirm corridor breeding presence; targeted occupancy survey is	Pre-construction nest survey before 1 March each year, focused on suitable cliff-face habitat along the corridor. 250 m no-works buffer around any confirmed active nest during 1 March – 30 September. Bird specialist monitoring to confirm the buffer is adequate. Stage 3 occupancy results	LOW, subject to implementation of the pre-construction nest survey programme and the 250 m exclusion



Species	Notes and Potential Effects	Mitigation	Significance
	committed for the next survey season. Pending confirmation, the species is treated precautionarily as a PBF on the basis of suitable cliff-face habitat presence and national EN listing.	(when available) to be incorporated into the BMP Sensitive Feature Register.	buffer at any confirmed nest.
Falco cherrug — Saker Falcon (EN globally; CITES II; CMS App. II; national RDB EN)	A wide-ranging cliff-nesting raptor with suitable breeding and foraging habitat within the EAAA. The May 2026 surveys did not field-confirm corridor breeding presence; targeted occupancy survey is committed for the next survey season. Pending confirmation, the species is treated precautionarily as a PBF on the basis of suitable cliff-face habitat presence and confirmed national EN listing. Construction-phase risks, if a nest is confirmed within the corridor, are nest disturbance and abandonment during the breeding season (1 March – 30 September) and broader displacement from noise and vibration during heavy earthworks.	Pre-construction nest survey before 1 March each year, focused on suitable cliff-face habitat along the corridor (the pre-construction survey is unconditional, regardless of subsequent survey results). 250 m no-works buffer around any confirmed active nest during 1 March – 30 September. Bird specialist monitoring to confirm the buffer is adequate. Stage 3 occupancy results (when available) to be incorporated into the BMP Sensitive Feature Register.	LOW, subject to implementation of the pre-construction nest survey programme and the 250 m exclusion buffer at any confirmed nest.
Tien Shan brown bear (Ursus arctos isabellinus)	May be present as part of a wider home range. Project is unlikely to affect species due to large home range and limited suitable habitat within project AoI	None required	Considered to fall below the likely threshold of significance. Not Significant
Eurasian lynx (Lynx lynx isabellinus)	A wide ranging species which may utilise the project area as part of larger home range. Home ranges are said to vary between 100 and 1,000 km ² . Indicating that the contextual impact of the project will be very low. Risks of harm from traffic during the operational phase of the project are considered to be low due to limited traffic movements on the road. There have been no suggestions of significant harm to this species from the operational phase of the existing road, albeit likely at a slower speed.	Pre-construction survey for possible crossing points of this species from higher ground to water course.	Considered to fall below the likely threshold of significance. Not Significant
European Glass Lizard (Pseudopus apodus, EN nationally)	Confirmed within the broader Sari Khosor area by Latifi (2026) but not recorded during field surveys conducted in March 2026. The March survey timing is early in the reptile activity season and absence at this stage is not considered indicative of genuine absence from the corridor. The species is associated with rocky slopes, sparse woodland	Pre-construction reptile survey to be conducted during the active season (April–September) before any vegetation clearance or earthworks commence. If confirmed within the works footprint, a reptile displacement programme shall be implemented under the supervision of a qualified ecologist immediately prior to clearance, including manual searches	Subject to pre-construction survey outcome. If absent from works footprint, Not Significant. If

Species	Notes and Potential Effects	Mitigation	Significance
	edges, and scrubby vegetation — habitat types present within and adjacent to the project footprint. Principal risks are direct mortality during vegetation clearance and topsoil stripping, and loss of basking and refugia microhabitat. The species is fossorial and slow-moving, increasing its vulnerability to mechanical clearance operations.	and temporary exclusion fencing where practicable. Clearance of rocky scrub habitat to proceed slowly and in sections to allow displacement of individuals.	confirmed present, significance of residual effects considered LOW following implementation of displacement measures.
Snow leopard (<i>Panthera uncia</i>)	<p>Another species with a large home range and therefore the project will only affect a very small area of habitat directly. This species prefers steep cliffs and wooded areas, features which are absent from the projects Aol.</p> <p>If present may be affected by disturbance during construction but would move away from the site, and during operation again through disturbance or direct harm from impingement with vehicles. The latter is considered to be a negligible risk.</p>	Pre-construction survey for possible crossing points of this species from higher ground to water course.	<p>Considered to fall below the likely threshold of significance.</p> <p>Not Significant</p>
Bukhara urial (<i>Ovis vignei bochariensis</i>)	<p>This is a herd species which utilises habitats of the type found within the project Aol. Desk study and survey conducted to date do not indicate presence of this species in the wild. Additional field work and consultation with local people will continue to confirm the assumption of absence of the species from Aol.</p> <p>Potential impacts include disturbance and risk of accidents with machinery and vehicles during construction and operational phase.</p>	<p>Pre-construction survey and consultation with local people.</p> <p>If present, identify any regular crossing points of the road and within these areas utilise operational management techniques to reduce risk of harm to the animals, to include possible speed reduction, signage for drivers warning of the risk, and headlight reflectors to reduce risk of animals crossing at night when vehicles are oncoming.</p>	As a precautionary approach considered to be LOW but assumption shall be checked following additional field work.
Bukhara Deer (<i>Cervus hanglu bactrianus</i>) — breeding facility km 35	A managed breeding facility of approximately 3 hectares for this CR species is located near km 35, under the superintendence of Sari Khosor Natural Park. The facility is a confirmed, spatially defined receptor. Principal construction-phase impacts are noise and vibration from heavy machinery, dust, and increased human activity in the immediate vicinity of the facility. Operational phase impacts include increased traffic volume and associated disturbance. The facility is enclosed and managed, reducing but not eliminating risk of direct harm to animals.	Pre-construction site visit to establish baseline population count and assess facility sensitivity to noise and vibration. Agree a construction noise management protocol with the facility manager before works commence in the km 35 vicinity. Restrict noisy works (blasting, piling, heavy earthworks) to daytime hours only within 500 m of the facility. Monitor animal behaviour during construction and cease works if signs of acute stress are observed.	LOW, subject to implementation of the noise management protocol.
<i>Pyrus tadshikistanica</i> (CR IUCN/national RDB)	Field-confirmed during Muhammadsoleh (2026) botanical survey: 6 individuals at km 11, 15, 29, 34 and 48. Critically	Each confirmed individual entered on the Sensitive Feature Register with full coordinates. Design-team review of micro-	Subject to design avoidance outcome.



Species	Notes and Potential Effects	Mitigation	Significance
	<p>Endangered globally restricted endemic. Wild pear trees are large woody perennials; principal construction-phase risk is direct destruction during vegetation clearance and earthworks at the five chainage clusters where individuals are confirmed. Soil disturbance and root zone damage from adjacent works represent secondary risks. The species is not generally amenable to translocation at maturity.</p>	<p>realignment options at each cluster (km 11, 15, 29, 34, 48) as the first-step avoidance response under the mitigation hierarchy. Where avoidance via micro-realignment is not achievable, a 10 m no-disturbance buffer around the trunk of each individual; works within 20 m of any tree to be supervised by the Ecologist and confined to manual or low-impact techniques. Translocation retained only as a last-resort response, with realistic caveats on success rates for mature wild pear. Pre-construction monitoring of each individual to confirm vitality and reproductive status. The design team has confirmed in-design retention of the two mature individuals at km 29 and km 34: each tree stands within close proximity of the existing carriageway, and the design incorporates a localised lateral alignment adjustment at both chainages to keep the trees and their immediate rooting zone outside the engineered Right-of-Way and any temporary works footprint. This commitment is reflected in the final design drawings and tender documents.</p>	<p>If full avoidance is achieved at all five chainages, residual impact on confirmed individuals is LOW; the net-gain obligation engaged by the Critical Habitat determination remains in force and is addressed through the Biodiversity Offset Programme. If any individual losses occur, residual impact is assessed as HIGH given the species' CR status, Tajikistan endemism, and the Boboev (2022) finding that approximately 300 fruit-bearing trees represent the closest documented national reference population, with no observed seed reproduction in that reference area. The Biodiversity Offset Programme covering both CR <i>Pyrus</i> species is the principal</p>

Species	Notes and Potential Effects	Mitigation	Significance
			compensation instrument.
<i>Pyrus korshinskyi</i> (CR IUCN/national RDB)	Field-confirmed during Muhammadsoleh (2026) botanical survey: 16 individuals at km 16, 37, 43 and 47. Critically Endangered species with restricted global range. A precautionary Critical Habitat determination is made under EBRD ESR6 paragraph 14(ii)c (see Section 3.3). The net-gain obligation applies, requiring demonstration that the project will not cause a measurable adverse impact on the species. Construction-phase risks are as described for <i>P. tadshikistanica</i> : direct destruction during clearance and earthworks at the four chainage clusters; soil disturbance and root zone damage; translocation success rates are low for mature individuals.	Each confirmed individual entered on the Sensitive Feature Register. Design-team review of micro-realignment options at each cluster (km 16, 37, 43, 47) as the first-step avoidance response. The mitigation hierarchy is applied with net gain as the required outcome: (i) avoidance via micro-realignment as the first response; (ii) where avoidance is not fully achievable, a 10 m no-disturbance buffer around each retained tree and supervised low-impact works within 20 m; (iii) translocation only as a last-resort response where the individual would otherwise be destroyed; (iv) a Biodiversity Offset Programme will be developed to provide the formal demonstration of net gain. The Offset Programme is required to be agreed with EBRD prior to commencement of works affecting any confirmed individual.	Subject to design avoidance outcome and Offset Programme. Residual significance after the full mitigation hierarchy assessed as LOW provided the Offset Programme demonstrates measurable net gain.
<i>Malus sieversii</i> (EN national RDB; CITES)	Field-confirmed during Muhammadsoleh (2026) botanical survey: two separate sites at km 9 and km 12 along the alignment. The species is the progenitor of the cultivated apple and is an Endangered Central Asian endemic. Construction-phase risks are direct destruction during clearance or earthworks at the confirmed locations, and secondary disturbance to root zones.	Each confirmed individual entered on the Sensitive Feature Register. Design-team review of micro-realignment options at both sites. Where avoidance is not fully achievable, 10 m no-disturbance buffer and Ecologist-supervised low-impact works within 20 m. The species is amenable to grafting from rootstock for ex-situ conservation programmes; cuttings to be taken under the supervision of a qualified specialist before any clearance affecting an individual, and the species included in the Biodiversity Offset Programme.	LOW following implementation of the mitigation hierarchy.
<i>Aegypius monachus</i> (Cinereous Vulture) — IUCN NT; national VU	Confirmed corridor breeder during May 2026 surveys: 1 active nest at km 2–4 (Ergashev, 2026) within the works zone, in the same cliff-face cluster as a confirmed Egyptian Vulture nest. 2 individual Cinereous Vultures separately recorded in flight at Talbonov Stage 1 Point 348 (38.41119N/69.70129E, ~km 14, elevation 1,090 m), 1,000 m from the observation point at 2,000 m altitude — interpreted as foraging movement rather than a second nest territory. National breeding population estimated at 40–50 pairs (Tajik Red Data Book), making the corridor a confirmed	Pre-construction nest survey before 1 March each year. 250 m no-works buffer around the active nest at km 2–4 during 1 March – 30 September. The km 2–4 nest cluster (Egyptian Vulture and Cinereous Vulture nests recorded at the same chainage) is treated as a single sensitive feature in the BMP, with the same exclusion zone applying to both. Design-team review of micro-realignment options at km 2–4 to maximise standoff distance during the breeding season. Where in-zone works during the breeding season cannot be avoided, programme management to schedule heavy earthworks outside the breeding season.	LOW, subject to implementation of the 250 m exclusion buffer and design avoidance at km 2–4.



Species	Notes and Potential Effects	Mitigation	Significance
	breeding location for a small national population. Construction-phase risks are nest disturbance and abandonment during the breeding season (1 March – 30 September) from in-zone works at km 2–4, and broader displacement from noise and vibration during heavy earthworks.		
<i>Eurasian Otter</i> (<i>Lutra lutra</i> , EN nationally)	Corridor presence confirmed by the May 2026 survey at one location — the upper Shurobdaryo near Shahidon village (38.52055 N / 69.82906 E, elevation 1,304 m), approximately 300 m downstream of an active bridge construction site. Habitat features (deeper water, large rocky outcrops on both banks) consistent with otter holting and foraging. LEK interviews corroborate otter presence at the same location and confirm fish-take incidents. Negative results from the lower corridor are consistent with the morphological argument. The river corridor, with its fish populations, clean water, and bankside vegetation, constitutes core otter habitat throughout the project length where suitable morphology exists. The otter is one of the most sensitive indicators of river ecological integrity, requiring clean water, abundant fish prey, undisturbed bankside cover, and secure holt sites. Principal construction-phase impacts are direct disturbance and destruction of holt sites during bankside clearance and bridge foundation works — particularly at the Shahidon location — sedimentation and turbidity affecting fish prey availability, and hydrocarbon contamination risk from machinery operating in or adjacent to the river. Operational phase risks include increased human access and associated disturbance, and road mortality.	Pre-construction targeted otter holt survey at the Shahidon bridge specifically before any further bankside clearance or in-river works at that location; corridor-wide pre-construction survey for holt sites along the full project length to be completed before any bankside clearance or in-river works commence. Where holts or active signs are confirmed, a 50 m exclusion zone around each holt shall be established and no works permitted within that zone during the breeding season (December–June). Bankside vegetation clearance to be limited to the minimum footprint necessary and conducted from the road side only, avoiding direct access to the river bank except at designated crossing points. Hydrocarbon management procedures — including no refuelling within 50 m of the river, bunded storage of fuel and oils, and spill kits on all machinery operating near the water — to be implemented throughout construction. Post-construction monitoring of otter activity along the corridor for a minimum of two seasons following completion of works.	LOW, subject to completion of the pre-construction holt survey at Shahidon and the corridor-wide mitigation measures.
<i>Egyptian Vulture</i> (<i>Neophron percnopterus</i> , EN)	6 active corridor nests confirmed by tabulated records across the May 2026 surveys (Stage 1 detection 8–10 May; Stage 2 occupancy re-confirmation 16–18 May), distributed as follows: 1 nest at 38.33192N/69.68716E within the km 2–4 works zone (Talbonov Stage 1 Point 3, independently confirmed by Ergashev 2026); 3 nests at 38.54289N/69.87254E (~km 30); 2 nests at	Pre-construction nest survey before 1 March each year. 250 m no-works buffer around each confirmed active nest during 1 March – 30 September; nests not confirmed as active in the current breeding season released from the buffer following Ecologist sign-off. Design-team review of micro-realignment options at km 2–4. Programme management to schedule	LOW, subject to implementation of the 250 m exclusion buffer at each nest and design avoidance at km 2–4.



Species	Notes and Potential Effects	Mitigation	Significance
	38.55266N/69.88575E (~km 34). The Stage 1 and Stage 2 narratives additionally reference 2 nests at 38.57781N/69.91264E (~km 36) which are not tabulated in either Stage; these are treated as provisional pending Stage 3 tabulation. The km 2–4 nest is at the same cliff-face cluster as the Cinereous Vulture nest. Each confirmed nest is a fixed receptor for the BMP Section 6.3 cliff-nesting raptor mitigation cascade; the provisional km 36 nests will be added on Stage 3 confirmation.	heavy earthworks at km 2–4 outside the breeding season where practicable.	
<i>Barbary Falcon</i> (<i>Falco pelegrinoides</i> , EN nationally)	one individual confirmed at cliff-face waypoint (Point 7 in Stage 1; same territory re-confirmed at Point 10 in Stage 2), in suitable cliff-face breeding habitat. The national breeding population is estimated at 20–25 pairs (Tajik Red Data Book), making a confirmed corridor territory a meaningful national receptor. CITES I.	Pre-construction nest survey before 1 March each year focused on the cliff-face territory and other suitable rocky habitat along the corridor. 250 m no-works buffer around any confirmed active nest during 1 March – 30 September. Bird specialist monitoring to confirm the buffer is adequate.	LOW, subject to implementation of the 250 m exclusion buffer at any confirmed nest.
<i>European Glass Lizard</i> (<i>Pseudopus apodus</i> , EN nationally)	first active-season corridor record confirmed during May 2026 surveys (1 individual at 38.35418 N / 69.69446 E). The desk-study likely-presence assessment is therefore confirmed by field record. Construction-phase risk is direct mortality during vegetation clearance and topsoil stripping; the species is fossorial and slow-moving, increasing its vulnerability to mechanical clearance.	Pre-construction reptile survey during the active season (April–September) before any vegetation clearance or earthworks in rocky slope and scrub habitats. Reptile displacement programme under Ecologist supervision immediately prior to clearance. Slow, sectional clearance of rocky scrub to allow displacement.	LOW, subject to implementation of the displacement programme.



4.2 Protected Areas

Within the EAAA are the protected areas of Sari Khosor Natural Park and Nurek State Reserve. Both lie to the west of the project alignment and below a ridge line. The nearest approach to these two sites and the road are 7 km and 3 km respectively.

There are no anticipated direct or indirect effects of the project activities. This is based on the spatial separation of the project and reserve areas and that the project is not a new road but a rehabilitation of an existing route for traffic.

A letter from the Committee for Environmental Protection Under The Government of the Republic of Tajikistan (Appendix 2) with regard to potential risks on the Sari Khosor Natural Park concurred with the view of negligible impacts.

The government letter from the State Institution for Specially Protected Natural Territories (Appendix 2) draws specific attention to a Bukhara Deer (*Cervus hanglu bactrianus*) breeding facility of approximately 3 hectares located at Dashtaro village, in the vicinity of the road corridor near km 35. This facility operates under the superintendence of Sari Khosor Natural Park and the state authority explicitly requests that potential impacts on the facility be considered during project planning. *Cervus hanglu bactrianus* is listed as Critically Endangered (CR) on the IUCN Red List. The facility represents a confirmed, spatially defined receptor for a CR species adjacent to the project corridor and is assessed further in the impact assessment in Section 4.

4.3 Cumulative and Operational Phase Impacts

The rehabilitation of the BSK road will result in a permanent improvement in access to a remote mountain valley that is currently partially protected by its inaccessibility. This is a long-term indirect impact that extends beyond the construction phase and affects all PBF species and habitats within the EAAA. While the construction phase impacts assessed above are largely temporary and manageable through the mitigation measures proposed, the operational phase access improvement requires specific consideration.

The principal concerns are increased hunting and poaching pressure on large mammals and raptors, and increased collection of Red Book plant species. The Bukhara Urial (*Ovis vignei bochariensis*, CR), Snow Leopard (*Panthera uncia*, EN), Eurasian Lynx (*Lynx lynx isabellinus*, EN), and Tien Shan Brown Bear (*Ursus arctos isabellinus*, EN) are all confirmed or likely present within the EAAA and are species for which hunting and poaching represent the primary long-term threat. Improved road access increases both the opportunity and the incentive for illegal hunting by making the valley more easily reachable. Similarly, Red Book plant species including tulip and eremurus species already subject to collection pressure from land development and grazing are more vulnerable when collector access improves.

The proximity of Sari Khosor Natural Park — confirmed at approximately 5 km from the road corridor by the state authority (Appendix 2); the closest approach of the alignment to the Park boundary is approximately 3.5 km at the north-eastern terminus — means that improved access also increases the risk of encroachment into the park boundary and disturbance to park wildlife, particularly species with large home ranges such as Snow Leopard and Lynx that move between the park and the wider landscape.

The following operational phase measures are recommended to manage these risks and should be incorporated into the project's Environmental and Social Management Plan:

Engagement with the Tajikistan national wildlife enforcement authorities before road opening to agree increased patrol frequency along the corridor and in the vicinity of the Sari Khosor Natural Park boundary during the first three years of operation. Installation of wildlife awareness signage at key points along the road, including at the approach to the Sari Khosor Natural Park access area near km



35. Community engagement with villages along the corridor to raise awareness of the protected status of Red Book species and the penalties for illegal hunting and plant collection. Monitoring of large mammal activity along the corridor during the first two operational seasons to detect any early evidence of behavioural change or population decline attributable to increased access.

5. Conclusions and Recommendations

5.1. Conclusions

The project is not considered to represent a significant risk to protected or valued habitats or species. This assessment, incorporating the May 2026 field survey programme, concludes that the project corridor triggers Critical Habitat under EBRD ESR6 paragraph 14(ii)c (areas supporting important national concentrations of CR or EN species) for two Critically Endangered wild pear species: *Pyrus tadshikistanica* (6 mature individuals field-confirmed at km 11, 15, 29, 34 and 48; endemic to Tajikistan; supported quantitatively by Boboev (2022) which records approximately 300 fruit-bearing trees in the closest comparable national reference area, making the BSK corridor population approximately 2% of that figure) and *Pyrus korshinskyi* (16 mature reproductive units field-confirmed at km 16, 37, 43 and 47). Both determinations are made on a precautionary basis. No other habitats, ecosystems or species within the EAAA trigger Critical Habitat under any of the five EBRD ESR6 criteria. A separate Alliance for Zero Extinction (AZE) screen has been completed (see Section 3) and concludes that the project corridor does not meet the AZE criteria and does not qualify as an AZE site or A1e KBA, because the corridor does not hold $\geq 95\%$ of the global population of either CR *Pyrus* species (irreplaceability test not met). The negative AZE result does not reduce the Critical Habitat obligations engaged by the Section 14(ii)c determination above; the two tests apply different thresholds.

The corridor supports Priority Biodiversity Features under the threatened-species, national CR/EN, and stakeholder-identified pathways: seven IUCN Red List species (Marbled Polecat, Eastern Imperial Eagle, *Tulipa praestans*, *T. anisophylla*, Urial, Yellow-eyed Pigeon and Pallid Harrier); 14 national Red Data Book species (counting the Bukhara Urial once with its IUCN listing); *Malus sieversii* (EN, CITES) confirmed by the May 2026 survey; the Amu darya trout autumn spawning migration and the precautionary Turkestan Barbel, assessed against EAAA C; and Cinereous Vulture under paragraph 12(iii) on the basis of a confirmed corridor nest.

A number of PBFs were identified and these have been assessed for potential impacts to the PBF. No HIGH or MEDIUM significant effects are predicted. Taking a precautionary approach, some LOW significance effects may occur.

In accordance with EBRD ESR6, the identification of Priority Biodiversity Features within the EAAA requires the project to apply the mitigation hierarchy and demonstrate no net loss of those features. The mitigation measures set out in Section 4 are designed to achieve this outcome for each confirmed PBF, through a combination of avoidance of direct impacts where possible, minimisation of construction footprint, pre-construction survey and translocation where species are confirmed within the works area, and monitoring during and after construction to verify effectiveness. The Critical Habitat determinations for *Pyrus tadshikistanica* and *Pyrus korshinskyi* elevate the project's obligation under EBRD ESR6 from no net loss to net gain for both species. The mitigation hierarchy is applied with avoidance via design-team review of micro-realignment options at each of the confirmed chainage clusters (km 11, 15, 16, 29, 34, 37, 43, 47 and 48) as the first-step response. Translocation of mature wild pear individuals is retained only as a last-resort response, with realistic caveats on success rates — particularly given the Boboev (2022) finding that *P. tadshikistanica* reproduces vegetatively only in the closest comparable national reference area. A Biodiversity Offset Programme will be developed as the principal instrument for the formal demonstration of net gain across both CR *Pyrus* species; the Offset Programme will be agreed with EBRD prior to commencement of any works affecting confirmed CR *Pyrus* individuals. The Programme will be designed in cooperation with existing in-country conservation efforts, including the BGCI/Kulob Botanic Garden Darwin Initiative project (ref. 31-017), which is actively undertaking ex-situ propagation of both target species. The reinstatement and revegetation measures proposed for temporarily disturbed areas are expected to provide a complementary modest net benefit to habitat quality within the corridor over the medium term.



A Biodiversity Management Plan (BMP) will be prepared for the construction phase of the project, translating the mitigation commitments set out in this CHA and the ESIA into contractor-level operational requirements. The BMP will be agreed with EBRD before construction commences, in accordance with ESR6 requirements for a Category A project.

5.2. Recommendations

1. Each confirmed CR *Pyrus* individual (km 11, 15, 16, 29, 34, 37, 43, 47, 48), the two *Malus sieversii* sites (km 9, 12), the six confirmed active Egyptian Vulture nests (1 at the km 2–4 cluster, 3 at km 30, 2 at km 34), the Cinereous Vulture nest at km 2–4, the Barbary Falcon cliff-face territory at km 34, and the Shahidon otter location (38.52055 N / 69.82906 E) to be entered on the project Sensitive Feature Register.
2. A Biodiversity Offset Programme to be developed to discharge the net-gain obligation engaged by the precautionary Critical Habitat determinations for both *Pyrus tadshikistanica* and *Pyrus korshinskyi*. The Programme to be agreed with EBRD prior to the commencement of any works affecting confirmed CR *Pyrus* individuals, and to include *M. sieversii* as a supporting Red Book species. The Programme should be designed in cooperation with the active BGCI/Kulob Botanic Garden Darwin Initiative project “Biodiversity conservation and local livelihoods improvement in southern Tajikistan” (ref. 31-017), which is currently undertaking propagule collection, seed processing and ex-situ propagation of both Critically Endangered *Pyrus* species. Pre-Programme baseline botanical work to refine the species population estimates within the EAAA against which net gain will be measured, taking the Boboev (2022) figure of approximately 300 fruit-bearing *P. tadshikistanica* trees in the adjacent Dashtijum/Kulob zone as the closest comparable national reference point.
3. **Cliff-nesting raptor follow-up at km 2–4.** The km 2–4 nest cluster (one Egyptian Vulture and one Cinereous Vulture active nest within the works zone) to be treated as a single sensitive feature in the BMP, with the 250 m no-works exclusion buffer applied throughout 1 March – 30 September each year. Design-team review of micro-realignment options at km 2–4 to maximise standoff distance. Programme management to schedule heavy earthworks at km 2–4 outside the breeding season where practicable.
4. **Shahidon otter holt survey.** A targeted pre-construction otter holt survey at the Shahidon bridge to be completed before any further bankside clearance or in-river works at that location.



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Annex 1 – Survey Data



Part A — Summary of Survey Activities and Findings

This Part A is written as a stand-alone summary suitable for direct extraction into the ESIA. It presents the survey programme, methodology, consolidated findings and significance. Full survey-level detail, complete species lists and point-by-point records supporting every statement below are held in Part B (Detailed Appendix), which is intended for inclusion as a whole in the CHA annexes.

A1. Overview

The biodiversity baseline for the Baljuvon–Sari Khosor (BSK) Road Project was established in two phases. A desk-based assessment with an early-season field walkover (Latifi, March 2026) compiled the regional baseline and identified the Priority Biodiversity Features (PBFs) requiring active-season field verification. A targeted field mobilisation in May 2026 then confirmed those features at peak phenology. All survey work was delivered in accordance with EBRD Performance Requirement 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources).

The May 2026 mobilisation comprised four field work packages delivered along the road corridor between the district centre of Baljuvon and the jamoat of Sari Khosor / Sharshar Waterfall: a targeted botanical survey (Muhammadsoleh, 8–10 May); a parallel geobotanical and carnivore mission (Khanjarov and Ergashev, 9–10 May); a combined bird and Eurasian Otter survey (Khursand, Nugzar and Talbonov, 8–10 May), with a Stage 2 repeat for occupancy confirmation (Garibmamadov, Talbonov et al., 16–18 May); and a raptor monitoring and community consultation expedition (Ergashev, 9–10 May).

The headline outcomes are: (i) confirmation of 22 individuals of two Critically Endangered wild pear species (*Pyrus tadshikistanica* and *Pyrus korshinskyi*) along the alignment, together with two wild apple (*Malus sieversii*) sites and a population of Anzur onion; (ii) confirmation of six Egyptian Vulture nests (one independently corroborated) and one Cinereous Vulture nest within or close to the corridor, including nests at km 2–4 inside the works zone; (iii) confirmation of Eurasian Otter presence near Shoidon, approximately 300 m downstream of an active bridge construction site, with negative results in the lower corridor; and (iv) Local Ecological Knowledge interviews with six corridor residents that corroborated the otter record and confirmed community awareness of Red Book species.

Collectively the results refine the project biodiversity baseline and support upgrades to the corridor presence status of several PBFs under the Critical Habitat Assessment (CHA, Rev01, April 2026). None of the findings change the overall Critical Habitat conclusion of the CHA, but several require strengthening of the mitigation framework in the Biodiversity Management Plan (BMP).

A2. Survey Programme — Who, What and When

The table below summarises each survey package, the personnel involved, the dates and coverage, the methods applied and the principal output. Full personnel lists, institutional affiliations and survey-level method statements are given in Part B.

Table A1. Survey programme summary.

Survey package	Dates	Personnel	Coverage / where	Methods	Key output
Desk study + early-season walkover	Desk 2026; field 23–24 Mar 2026	Alikhon Latifi	Wider Sari Khosor area incl. Natural Park	Literature review; route-based field survey; signs; LEK; photo-documentation	Regional baseline: 1,500+ plants, 147 endemics, 31 Red Book fauna; carrion-attended scavenger guild;



Survey package	Dates	Personnel	Coverage / where	Methods	Key output
					geophyte confirmation deferred to peak season
Botanical survey	8–10 May 2026	Muhammadsoleh Oev	Full corridor, Baljuvon → Sari Khosor; 27 transect sites	Transect method; 100 m transects with 10 m buffer each side; GPS; habitat description; rare-tree measurements	22 <i>Pyrus</i> individuals; 2 <i>Malus sieversii</i> sites; <i>Allium suworowii</i> population; 11 tugai fragments; full species lists
Geobotanical + carnivore mission	9–10 May 2026	Andam Khanjarov (geobotanist); S.T. Ergashev (carnivore specialist)	Corridor survey section	Route-based botanical and faunal survey; signs; LEK	Woody flora (25 spp., 5 protected); 12 Red Book herbaceous spp. for the area; rare plants sparse on the road verge
Bird & Otter survey — Stage 1	8–10 May 2026	Khursand; Nugzar; Talbonov Kh.M.	14 points over 54 km (946–1,422 m a.s.l.); Shurobdaryo banksides	Route-and-point counts, 2 h per point; optics; bankside otter sign survey; LEK	6 tabulated Egyptian Vulture nests; scavenger guild counts; otter signs near Shoidon; reptile/mammal incidentals
Bird survey — Stage 2 (repeat)	16–18 May 2026	Garibmamadov G.D.; Talbonov Kh.M.; Safarmamadova G.; Shodibekov U. (IZP NAST)	Same 14 points, two field groups	Repeat route-and-point counts at Stage 1 waypoints	Re-confirmation of nest occupancy; consistent raptor records
Raptor monitoring + consultations	9–10 May 2026	S.T. Ergashev	14 points over 56 km; villages Bogi Zogon ↔ Doshmandi	Vantage-point raptor observation; 6 structured questionnaire interviews	1 Egyptian Vulture + 1 Cinereous Vulture nest at km 2–4 (works zone); LEK on Red Book fauna and otter

A3. Methodology and Coverage

Botanical coverage used a transect method along the full alignment, with 27 survey sites each comprising a 100 m transect and a 10 m buffer on both sides, targeting Red Data Book trees (particularly *Pyrus tadshikistanica*, *Pyrus korshinskyi* and *Malus sieversii*), rare *Allium* and wild tulips. Identification followed the Flora of Tajikistan with cross-reference to the Red Data Book of the Republic of Tajikistan (2024). For every rare tree the team recorded coordinates, elevation, approximate age, height, distance from the road and reproductive state, and described habitat



condition and disturbance. Tugai fragments were mapped and characterised by rapid vegetation assessment.

Ornithological coverage applied the route-and-point method used in mountain surveys: movement along a fixed route with two-hour observation watches at 14 fixed points, recording coordinates, elevation, time, weather, temperature, species, counts, flight direction, distance, flight altitude and nest presence, using 8×42 / 10×42 binoculars and a 20–60× spotting scope. The bird survey was run twice — Stage 1 (8–10 May) and a Stage 2 repeat (16–18 May) for occupancy confirmation. The otter component used standard bankside sign survey along the Shurobdaryo (tracks, spraints, slides, prints, feeding remains) with LEK interviews. Survey work in the upper river on 10 May was curtailed by heavy rainfall and a rapid rise in water levels.

Raptor monitoring (Ergashev) used elevated vantage points selected for line-of-sight into the major cliff faces. The community consultation used a structured questionnaire with photograph and brief-description recall aids, administered to six residents between Bogi Zogon and Doshmandi villages.

A4. Consolidated Findings

Red Book flora

The botanical survey confirmed 22 individuals of the genus *Pyrus*: 6 *Pyrus tadshikistanica* (km 11, 15, 29, 34 and 48) and 16 *Pyrus korshinskyi* (km 16, 37, 43 and 47), mostly as isolated trees or small scattered groups on dry slopes and foothill habitats close to the corridor, several mature and showing flowering, fruiting or natural regeneration. Both species are listed as Critically Endangered (IUCN B2ab(iii,v)) and in the national Red Data Book. Two separate sites of wild apple *Malus sieversii* (Endangered; CITES) were recorded at km 9 and km 12. A population of Anzur onion was located between km 33 and km 34. The survey also mapped 11 tugai vegetation fragments dominated by *Elaeagnus angustifolia* and *Tamarix ramosissima* with *Salix excelsa* in wetter reaches, and documented a full corridor tree list (25 woody species, five protected) and 56 herbaceous taxa.

Cliff-nesting raptors

The Stage 1 bird survey tabulated six Egyptian Vulture nests — three at 38.54289 N / 69.87254 E (Point 350), two at 38.55266 N / 69.88575 E (Point 351), and one at 38.33192 N / 69.68716 E (Point 347, approximately km 2, within the works zone) — all re-confirmed occupied in the Stage 2 repeat. The Ergashev expedition independently confirmed one Egyptian Vulture nest and one Cinereous Vulture nest at km 2–4 within the planned works footprint; the Egyptian Vulture nest is the same receptor as the Point 347 / km 2 nest, while the Cinereous Vulture nest is an additional, separate receptor. The defensible corridor total is therefore six confirmed Egyptian Vulture nests (one independently corroborated) plus one confirmed Cinereous Vulture nest. Scavenger-guild abundance comprised 12 Egyptian Vulture individuals (four points), 13 Griffon Vulture individuals (three points) and 2 Cinereous Vulture individuals (Point 348, approximately km 14), together with a single Barbary Falcon (*Falco pelegrinoides*) at the Point 351 cliff face and a Blue Whistling Thrush (*Myophonus caeruleus*) near km 14 — both confirmed PBFs.

Eurasian Otter and other mammals

Otter signs were confirmed at one location, in the upper Shurobdaryo near Shoidon village (38.52055 N / 69.82906 E, 1,304 m a.s.l.), approximately 300 m downstream of an active bridge construction site (approximately km 30), where two rivers merge, the water deepens and large rocky outcrops rise on both banks — habitat consistent with otter holting and foraging. Stone Marten (*Martes foina*) and Stoat (*Mustela erminea*) were sighted at the same location. Results were negative through the lower



corridor, where the river broadens and shallows, consistent with the morphological argument underpinning the CHA Criterion 4 conclusion. An incidental record of European Glass Lizard (*Pseudopus apodus*, nationally Endangered) at 38.35418 N / 69.69446 E represents the first active-season corridor record for this species.

Local Ecological Knowledge

Six structured interviews were conducted between Bogi Zogon and Doshmandi villages, with respondents comprising a game warden of the Baljuvon forestry enterprise, a teacher from secondary school No. 28 (Dashtikilko), two Doshmandi residents and two herders from Vakhsh and Yavan districts. Respondents showed generally good fauna knowledge, strongest for frequently encountered species, and several recognised Egyptian and Cinereous Vultures from the photograph deck. Fishermen near Shoidon confirmed otter presence in the upper river, including otters taking fish from catches — directly corroborating the field record — while lower-corridor respondents reported that otters are not seen there, also consistent with the field result.

A5. Consolidated Records Table

Key Red Book and PBF records confirmed during the 2026 surveys are consolidated below for inclusion in the project Sensitive Feature Register. Full coordinates, photographic vouchers and habitat descriptions are held in the individual surveyors' reports reproduced in Part B.

Table A2. Consolidated key biodiversity records, BSK corridor, 2026.

Species	Status (Nat / IUCN)	Records (2026)	Chainage / location	ESIA / CHA implication
<i>Pyrus tadshikistanica</i>	CR / CR	6 individuals	km 11, 15, 29, 34, 48	Upgrade from possible to confirmed PBF; corridor-wide micro-realignment review
<i>Pyrus korshinskyi</i>	CR / CR	16 individuals	km 16, 37, 43, 47	Upgrade from possible to confirmed PBF; micro-realignment review
<i>Malus sieversii</i>	EN / — ; CITES	2 separate sites	km 9, km 12	Wild apple sites added to Sensitive Feature Register
Anzur onion (<i>Allium suworowii</i> / <i>A. stipitatum</i>)	RDB / —	1 population	km 33–34 / km 25 (see note)	Species ID and chainage to be reconciled; footprint relationship to be confirmed
<i>Neophron percnopterus</i> — nests	EN / EN	6 confirmed (re-confirmed Stage 2)	3 at Pt 350; 2 at Pt 351; 1 at Pt 347 (km 2)	Confirmed PBF; 250 m no-works buffer per active nest, 1 Mar–30 Sep (BMP §6.3)
<i>Neophron percnopterus</i> — individuals	EN / EN	12 individuals at 4 points	Corridor-wide	Confirms corridor breeding population; informs cumulative impact assessment
<i>Aegypius monachus</i> (Cinereous Vulture)	VU / NT	1 active nest; 2 individuals	Nest km 2–4; individuals Pt 348 (~km 14)	First confirmed corridor breeding record; site-specific mitigation at km 2–4
<i>Gyps fulvus</i> (Griffon Vulture)	— / LC	13 individuals at 3 points	Pts 345, 348, 349	Not a PBF; cumulative scavenger-community record



Species	Status (Nat / IUCN)	Records (2026)	Chainage / location	ESIA / CHA implication
Falco pelegrinoides (Barbary Falcon)	EN / — ; CITES I	1 individual (both stages)	Pt 351 cliff face	Confirmed PBF; cliff-face occupancy to be verified at Stage 3
Myophonus caeruleus (Blue Whistling Thrush)	VU / —	1 individual	~km 14	Confirmed PBF; riparian / gorge specialist
Lutra lutra (Eurasian Otter)	EN / NT; CITES I	Signs at 1 location; LEK	Shoidon, ~300 m below bridge (38.52055, 69.82906)	Confirmed PBF; pre-construction holt survey required before further works (BMP §7)
Pseudopus apodus (Glass Lizard)	EN / —	1 individual	38.35418, 69.69446 (~km 4)	First active-season corridor record; supports BMP Annex 8 reptile scoping
Martes foina / Mustela erminea	— / LC	Sightings	Shoidon reach	Incidental records; supplementary fauna baseline



Part B — Detailed Survey Appendix

This Part B reproduces, in full, the survey-level detail underpinning the Part A summary: the Latifi desk study and March 2026 walkover, the May 2026 botanical and geobotanical surveys with complete species lists and coordinate-level records, the two-stage bird survey with point-by-point records, the otter survey, and the raptor monitoring and community consultation. It is intended for inclusion as a whole within the CHA annexes. A data-reconciliation note at the end (Section B7) records the discrepancies between source reports and the basis on which they have been resolved in Part A.

B1. Previous Work — Latifi Desk Study and March 2026 Walkover

The primary species-level desk resource is the Desk-Based Biodiversity Assessment prepared by Alikhon Latifi (Dushanbe, 2026), prepared in accordance with EBRD Performance Requirement 6. It covers the wider Sari Khosor area — a larger footprint than the established EAAA, including the Sari Khosor Natural Park — and establishes the regional baseline against which the corridor field results are assessed. From the perspective of physical-geographical zoning, the Sari Khosor area belongs to the south-western natural province of Tajikistan, bounded by the Gissar Range to the north, the Hazratishoh Range to the east, the Babatag Range to the west, and the Pyanj and Amu rivers to the south. The area is divided into eastern and western parts by the Shurobdaryo River, and is drained by the Shurobdaryo (originating near the Archatuq Pass at approximately 2,600 m and running more than 70 km to its confluence with the Obi Mazor). The climate is moderately continental, with mean annual precipitation of 767 mm.

B1.1 Flora baseline

The flora includes 107 species and subspecies of algae and more than 1,500 species of flowering plants. The dominant families are:

- Asteraceae — 122 species
- Fabaceae — 100 species
- Poaceae — 83 species
- Lamiaceae — 42 species
- Rosaceae — 39 species
- Liliaceae and Apiaceae — 33 species each

A total of 147 endemic plant species have been recorded in the Sari Khosor area, together with two Tertiary relict species of ancient origin — *Ostrowskia magnifica* and *Petilium eduardii*. Following the Ovchinnikov classification (1957–1981), vegetation in Tajikistan is divided into 20 types, of which 12 occur within the Sari Khosor area. These are summarised below with characteristic species and elevation ranges.

Table B1. Vegetation types of the Sari Khosor area (Latifi, 2026).

Vegetation type	Elevation (m a.s.l.)	Characteristic species
Broadleaf forests	—	<i>Juglans regia</i> , <i>Acer turkestanicum</i> , <i>Platanus orientalis</i> , <i>Malus sieversii</i> ; shrubs <i>Cotoneaster</i> spp., <i>Rosa canina</i> , <i>Berberis</i> spp., <i>Lonicera</i> spp.
Mesophilic deciduous shrub communities	800–2,800	<i>Rosa</i> spp., <i>Aflatusia ulmifolia</i> , <i>Exochorda alberti</i>
Poplar forests	800–3,000	<i>Populus bachofenii</i> , <i>P. tadshikistanica</i> , <i>P. konjilaliana</i> , <i>Fraxinus sogdiana</i> , <i>Hippophae rhamnoides</i> , <i>Salix</i> spp.
Tugai forests	500–1,600	<i>Elaeagnus angustifolia</i> , <i>Tamarix leptostachya</i> , <i>T. ramosissima</i> , <i>Hippophae rhamnoides</i>



Vegetation type	Elevation (m a.s.l.)	Characteristic species
Sparse woodlands (shiblyak)	800–1,600	<i>Pistacia vera</i> , <i>Amygdalus bucharica</i> , <i>Celtis caucasica</i> , <i>Cercis griffithii</i> , <i>Crataegus</i> spp.
Juniper forests	1,200–3,000	<i>Juniperus seravshanica</i> , often with <i>Acer turkestanicum</i> and <i>Populus tadshikistanica</i>
Herbaceous communities	800–2,000	<i>Origanum tyttanthum</i> , <i>Hypericum perforatum</i> , <i>Dracocephalum</i> spp., <i>Ziziphora pamiroalaica</i>
Cushion plant communities	1,000–4,000	<i>Acantholimon</i> and <i>Onobrychis</i> species
Semi-savannas	800–1,400	<i>Agrostis</i> , <i>Elytrigia</i> , <i>Roegneria</i> , <i>Polygonum coriarium</i>
Meadow vegetation	2,400–3,000	<i>Alopecurus</i> , <i>Agrostis</i> , <i>Elytrigia</i> , <i>Ligularia</i> spp.

Within the Sari Khosor area, 20 plant species listed in the Red Data Book of the Republic of Tajikistan (2024) have been identified, spanning the genera *Tulipa*, *Eremurus*, *Juno*, *Iris* and *Allium*. These occur in highly limited habitats; the main causes of decline are land development, livestock grazing and collection of medicinal, ornamental and edible plants.

B1.2 Fauna baseline

According to available literature, the fauna of the Sari Khosor area includes more than 2,000 insect species, 4 fish species, 24 reptile species, 84 bird species and 23 mammal species. A total of 31 animal species listed in the Red Data Book of the Republic of Tajikistan have been recorded. The Red Data Book fauna are listed below by group.

Table B2. Red Data Book fauna recorded for the Sari Khosor area (Latifi, 2026).

Group	Species (status)
Insects (10 spp.)	<i>Coenagrion scitulum</i> (VU); <i>Libelloides macaronius</i> (VU); <i>Dorcus sewertzowi</i> (EN); <i>Mallosiola regina</i> (VU); <i>Geotrupes banghaasi</i> (VU); <i>Papilio machaon</i> (VU); <i>Driopa mnemosyne</i> (VU); <i>Polyommatus avinovi</i> (EN); <i>Acosmeryx naga hissarica</i> (EN); <i>Hyles apocyni</i> (EN)
Fish (1 sp.)	Turkestan barbel (<i>Barbus capito conocephalus</i> , VU)
Reptiles (2 spp.)	European legless lizard (<i>Pseudopus apodus</i> , EN); Central Asian Levant viper (<i>Macrovipera lebetina turanica</i> , VU)
Birds (10 spp.)	Himalayan griffon (<i>Gyps himalayensis</i> , VU); Bearded vulture (<i>Gypaetus barbatus</i> , EN); Egyptian vulture (<i>Neophron percnopterus</i> , EN); Golden eagle (<i>Aquila chrysaetos</i> , VU); Saker falcon (<i>Falco cherrug coatsi</i> , EN); Barbary falcon (<i>Falco pelegrinoides</i> , EN); Blue whistling thrush (<i>Myophonus caeruleus</i> , VU); White-capped redstart (<i>Chaimarrornis leucocephala</i> , VU); Streaked laughingthrush (<i>Garrulax lineatus</i> , VU); Asian paradise flycatcher (<i>Terpsiphone paradisi leucogaster</i> , VU)
Mammals (7 spp.)	Indian crested porcupine (<i>Hystrix indica</i> , VU); Forest dormouse (<i>Dryomys nitedula</i> , VU); Tien Shan brown bear (<i>Ursus arctos isabellinus</i> , EN); Eurasian otter (<i>Lutra lutra</i> , EN); Eurasian lynx (<i>Lynx lynx isabellinus</i> , EN); Snow leopard (<i>Panthera uncia</i> , EN); Bukhara urial (<i>Ovis vignei bochariensis</i> , CR)

The ichthyofauna of the Shurob River comprises four species: Samarkand scraper (*Capoeta capoeta heratensis*, dominant), Common marinka (*Schizothorax intermedius*), Turkestan catfish (*Cluposternum reticulatum*) and Tibetan stone loach (*Nemacheilus stoliczkai*). Two amphibians occur — Green toad (*Bufo viridis*) and Marsh frog (*Pelophylax ridibundus*). The avifauna of 84 species comprises 9 resident, 12 migratory, 60 passage and breeding, and 3 vagrant species, associated with mountain rivers and floodplains, rocky habitats and forest. The 23 mammal species belong to six orders (Carnivora, Artiodactyla, Chiroptera, Lagomorpha, Rodentia and Eulipotyphla) and include



Snow Leopard, Siberian Ibex, Brown Bear, Eurasian Lynx, Eurasian Otter, Grey Wolf, Red Fox, Eurasian Badger and Stone Marten.

B1.3 March 2026 field walkover

Floristic and faunal surveys were conducted on 23–24 March 2026 along the road construction section, using route-based survey, visual observation and identification of animal signs, identification of key habitats, assessment of anthropogenic disturbance, and photo-documentation and geo-referencing, supplemented by indirect methods (tracks, droppings, vocalisations) and consultations with residents and environmental authorities. The objective was to assess the species composition of vertebrates, evaluate population and habitat status, and identify rare, endemic and protected species within the project's potential zone of influence. The report explicitly noted that the March timing fell early in the vegetation and reptile activity seasons, that many geophyte taxa had not entered active growth or flowering, and that results should be treated as preliminary pending targeted surveys at peak phenology. The May 2026 mobilisation was structured to close precisely these gaps.

Walkover records by group were as follows:

- Amphibians — Green toad (*Bufotes viridis*) near water bodies and moist habitats.
- Reptiles — Lehmann's agama (*Laudakia lehmanni*) on open rocky substrates; Pannonian snake-eyed skink (*Ablepharus pannonicus*) in sparse vegetation on loose warm soil.
- Birds — at least eight families recorded. A single carrion-attended group of raptors comprised Griffon vulture (7), Egyptian vulture (2), Cinereous vulture (2) and Black kite (12), indicating a feeding resource within the corridor. Other records: Eurasian magpie, Carrion crow (4 encounters), Masked wagtail, White-throated dipper (2), Common myna (groups of 3–7), Common blackbird, Blue whistling thrush (1), Common chaffinch (7 females) and Eastern rock nuthatch (by call). Four Red Data Book birds were confirmed: Griffon, Egyptian and Cinereous Vultures and Blue Whistling Thrush.
- Mammals — Eastern mole vole (signs), Turkestan rat, Red fox (1), and Wild boar (reported via interview).

Carry-forward from Latifi

The March walkover established the scavenger guild and four Red Book birds as present, but could not confirm geophytes or the full reptile assemblage owing to early-season timing. The European Glass Lizard, Eurasian Otter, the wild pears and the Anzur onion were all carried forward as features requiring active-season field confirmation — which the May 2026 programme then provided.

B2. Botanical Survey (Muhammadsoleh, 8–10 May 2026)

Report prepared by Muhammadsoleh Oev, dated 25 May 2026. A field expedition was conducted from 8 to 10 May 2026 to carry out a preliminary botanical and environmental assessment of the territory planned for the Baljuvon–Sari Khosor road corridor, focusing on rare, endemic and protected plant species and important vegetation communities.

B2.1 Methodology

A field-based transect survey method was used. A total of 27 survey sites were established along different sections of the road, each consisting of a 100 m transect with a 10 m buffer zone on both sides, covering dry rocky slopes, foothill vegetation, river valleys, shrublands and tugai fragments. Special attention was given to rare wild fruit trees (*Pyrus tadshikistanica*, *Pyrus korshinskyi*, *Malus sieversii*) and rare herbaceous plants (wild tulips, rare *Allium*). For every recorded rare tree,



coordinates and elevation (handheld GPS), number of individuals, approximate age category, estimated height, distance from the road, and presence of flowers and fruits were documented, alongside habitat condition (slope exposure, terrain, moisture, associated vegetation, signs of disturbance). Tugai fragments were mapped and described by rapid vegetation assessment. Identification followed the Flora of Tajikistan with cross-reference to the Red Data Book (2024).

B2.2 Results — rare *Pyrus* species

In total, 22 individuals of *Pyrus* were recorded — 6 *Pyrus tadshikistanica* and 16 *Pyrus korshinskyi* — mostly as isolated individuals or small scattered groups on dry slopes and foothill habitats close to the corridor. *Pyrus tadshikistanica* was recorded at km 11, 15, 29, 34 and 48, several being mature trees with visible flowering or fruiting; *Pyrus korshinskyi* was recorded at km 16, 37, 43 and 47, in several locations showing signs of natural regeneration. Coordinate-level records are given below.

Table B3. Recorded individuals of rare *Pyrus* species along the BSK road corridor.

Species	Location	No. of individuals	Coordinates
<i>Pyrus tadshikistanica</i>	Horma	1	38.401077, 69.697581
<i>Pyrus tadshikistanica</i>	Near Surkhsang	2	38.253680, 69.425269
<i>Pyrus tadshikistanica</i>	Shahidon	1	38.512670, 69.814210
<i>Pyrus tadshikistanica</i>	Chilton	1 old tree	38.536216, 69.859340
<i>Pyrus tadshikistanica</i>	Near Mullokoni	1	38.624486, 69.959800
<i>Pyrus korshinskyi</i>	Surkhsang	10	38.434150, 69.720203
<i>Pyrus korshinskyi</i>	Dashti Toro	4	38.546183, 69.879825
<i>Pyrus korshinskyi</i>	Near the village	1	38.590267, 69.927714
<i>Pyrus korshinskyi</i>	Pogla	1	38.621001, 69.956338

B2.3 Results — other rare species and tugai

Two separate sites of wild apple *Malus sieversii* were recorded at km 9 and km 12, both with mature individuals in natural habitats. A population of Anzur onion (*Allium suworowii*) was documented between km 33 and km 34 on open rocky slopes; wild tulips were observed at several suitable spring habitats. Tugai vegetation fragments were recorded between km 5–6, 14–15, 16–17, 21–22, 24–25, 28–30, 34–35, 36–37, 40–42, 49–51 and 52–53 (11 fragments), dominated by *Elaeagnus angustifolia* and *Tamarix ramosissima*, with *Salix excelsa* in wetter reaches; most were degraded by grazing, wood-cutting and disturbance.

B2.4 Recorded tree species (Table B4)

All recorded woody species are listed below (25 species; five protected and listed in the IUCN Red List / Red Data Book of the Republic of Tajikistan: the two *Pyrus*, *Malus sieversii* and *Amygdalus bucharica* among them).

Table B4. Recorded tree and woody shrub species along the corridor.

No.	Tajik name	English name	Scientific name
1	Муруд	Tajik pear	<i>Pyrus tadshikistanica</i> Zaprjagaeva
2	Шакинг	Korzhinsky pear	<i>Pyrus korshinskyi</i> Litv.
3	Себи чангалӣ	Sievers apple	<i>Malus sieversii</i> (Ledeb.) M.Roem.
4	Бодоми талхак	Bukharan almond	<i>Amygdalus bucharica</i> Korsh.
5	Чормағз	Common walnut	<i>Juglans regia</i> L.
6	Туғ	Caucasian hackberry	<i>Celtis caucasica</i> Willd.
7	Шулаш (арғувон)	Griffith's redbud	<i>Cercis griffithii</i> Boiss.
8	Дӯлона	Pontic hawthorn	<i>Crataegus pontica</i> C.Koch
9	Дӯлонахор	Turkestan hawthorn	<i>Crataegus turkestanica</i> Pojark.

No.	Tajik name	English name	Scientific name
10	Заранг	Regel's maple	<i>Acer regelii</i> Pax
11	Фарк	Turkestan maple	<i>Acer turkestanicum</i> Pax
12	Олуча	Sogdian cherry-plum	<i>Prunus sogdiana</i> Vass.
13	Маҳлаб	Mahaleb cherry	<i>Padellus mahaleb</i> (L.) Vass.
14	Бушол	Korolkow's honeysuckle	<i>Lonicera korolkowii</i>
15	Ирғай	Coin-leaved cotoneaster	<i>Cotoneaster nummularioides</i> Pojark.
16	Хуч	Dog rose	<i>Rosa canina</i> L.
17	Гулхор	Fedchenko's rose	<i>Rosa fedtschenkoana</i> Regel
18	Говкусирак	Paulsen's bladder-senna	<i>Colutea paulsenii</i> Freyn & Sint.
19	Зирк	Diverse-cluster barberry	<i>Berberis heterobotrys</i> E.L. Wolf
20	Арчаи зарафшонӣ	Zeravshan juniper	<i>Juniperus seravschanica</i> Kom.
21	Сафедор	White poplar	<i>Populus alba</i> L.
22	Санчид	Russian olive	<i>Elaeagnus angustifolia</i> L.
23	Бед	Tall willow	<i>Salix excelsa</i> S.G. Gmel.
24	Каин	Large-flowered calophaca	<i>Calophaca grandiflora</i> Regel
25	Сиёҳдарахт	Long-leaved buckthorn	<i>Rhamnus dolichophylla</i> Gontsch.

A total of 56 herbaceous and shrub species were additionally recorded in the survey transects (full list retained in the surveyor's technical report and the Khanjarov mission report, Section B3.2). The botanical survey concluded that the 22 *Pyrus* individuals do not represent the final and complete number present, owing to terrain, dense vegetation and limited survey time, and recommended that all identified *Pyrus* individuals near the construction corridor be clearly marked prior to works, with monitoring during and after construction.

B3. Geobotanical and Carnivore Mission (Khanjarov and Ergashev, 9–10 May 2026)

Report by Andam Khanjarov, geobotanist, who travelled to Baljuvon District on 9–10 May 2026 together with carnivore (predator) specialist S.T. Ergashev to survey the proposed road area for rare and endemic plant species and to identify local fauna, including carnivorous mammals. The mission characterises the woody and herbaceous flora of the district and the Red Data Book herbaceous species, complementing the corridor-focused Muhammadsoleh transect survey.

B3.1 Woody flora

The mission recorded 25 woody plant species within the district, five of which are listed in the IUCN Red List and the Red Data Book of the Republic of Tajikistan. The woody species list is identical in composition to Table B4 above. The mission noted that, directly along the Baljuvon–Sari Khosor route, rare species are extremely sparse: only Anzur onion (Persian shallot, *Allium stipitatum*) was recorded, at approximately km 25, with no other rare plants observed immediately on the road verge.

B3.2 Red Data Book herbaceous species

Twelve herbaceous species recorded in the area are listed in the Red Data Book of the Republic of Tajikistan.

Table B5. Red Data Book herbaceous species recorded for the area (Khanjarov, 2026).

No.	Scientific name	English name
1	<i>Allium stipitatum</i>	Persian shallot
2	<i>Allium trautvetterianum</i>	Trautvetter's onion
3	<i>Allium rosenbachianum</i>	Rosenbach's onion
4	<i>Bunium persicum</i> (Boiss.) B. Fedtsch.	Black caraway (zira)
5	<i>Juno nicolai</i>	Nicolai's iris



No.	Scientific name	English name
6	<i>Crocus korolkowii</i> Regel ex Maw	Korolkow's crocus
7	<i>Iris darwasica</i> Regel	Darvaz iris
8	<i>Iris hoogiana</i> Dykes	Hoog's iris
9	<i>Fritillaria eduardii</i> Regel	Eduard's fritillary
10	<i>Tulipa praestans</i> Th. Hoog	Tulipa praestans
11	<i>Tulipa tubergeniana</i> Th. Hoog	Tubergen's tulip
12	<i>Anemone bucharica</i> (Regel) Fin. & Gagnep.	Bukharan anemone

The mission concluded that the Vakhsh Range is a region with a high concentration of rare, endemic and relict plant species; the woody flora comprises 25 species including five protected taxa; and the herbaceous flora is highly diverse, with 12 Red Data Book species recorded, confirming the ecological significance of the region.

B4. Bird and Eurasian Otter Survey — Stage 1 (Khursand, Nugzar and Talbonov, 8–10 May 2026)

From 8 to 10 May 2026, a bird survey was carried out along the road from the district centre of Baljuvon to the Sharshar Waterfall in the Sari Khosor Gorge, a total route length of 54 km. Fourteen observation points were established and surveyed for scavenging birds, primarily the Egyptian Vulture, with two hours of observation at each point. In parallel, a mammal survey focused on the Eurasian Otter was conducted along the banks of the Sari Khosor (Shurobdaryo) River. Parallel Russian and English versions of this report were prepared (Talbonov; Khursand and Nugzar) and are treated as a single piece of work.

B4.1 Observation points

The eight principal raptor observation points and their coordinates were:

Point	Coordinates	Elevation (m a.s.l.)
345	38.32458 N, 069.68871 E	946
347	38.33192 N, 069.68716 E	988
348	38.41119 N, 069.70129 E	1,090
349	38.52947 N, 069.85406 E	1,338
350	38.54289 N, 069.87254 E	1,362
351	38.55266 N, 069.88575 E	1,384
352	38.57781 N, 069.91264 E	1,422
359	38.44232 N, 069.73442 E	1,180

B4.2 Recorded raptors and nests

The recorded raptor species, individual counts and nest records are reproduced below.

Table B6. Recorded raptor species and nests (Stage 1).

No.	Species / record	Count	Dir. (°)	Dist. (m)	Alt. (m)	Coordinates
1	Cinereous Vulture (<i>Aegypius monachus</i>)	2	180	1,000	2,000	38.41119 N, 069.70129 E
2	Griffon Vulture (<i>Gyps fulvus</i>)	9	285	2,000	1,000	38.32458 N, 069.68871 E
3	Griffon Vulture (<i>Gyps fulvus</i>)	2	90	1,000	2,000	38.41119 N, 069.70129 E
4	Griffon Vulture (<i>Gyps fulvus</i>)	2	315	3,000	2,000	38.52947 N, 069.85406 E
5	Egyptian Vulture (<i>Neophron percnopterus</i>)	4	315	40	300	38.54289 N, 069.87254 E
6	Egyptian Vulture (<i>Neophron percnopterus</i>)	1	—	50	100	38.57781 N, 069.91264 E



No.	Species / record	Count	Dir. (°)	Dist. (m)	Alt. (m)	Coordinates
7	Egyptian Vulture (Neophron percnopterus)	2	285	2,000	1,000	38.32458 N, 069.68871 E
8	Egyptian Vulture (Neophron percnopterus)	4	170	300	400	38.32458 N, 069.68871 E
9	Egyptian Vulture (Neophron percnopterus)	1	75	40	0	38.54289 N, 069.87254 E
10	Egyptian Vulture nest	1	275	—	100	38.54289 N, 069.87254 E
11	Egyptian Vulture nest	1	0	—	110	38.54289 N, 069.87254 E
12	Egyptian Vulture nest	1	15	—	300	38.54289 N, 069.87254 E
13	Egyptian Vulture nest	1	245	—	200	38.33192 N, 069.68716 E
14	Egyptian Vulture nest	1	304	—	100	38.55266 N, 069.88575 E
15	Egyptian Vulture nest	1	304	—	100	38.55266 N, 069.88575 E

This gives six tabulated Egyptian Vulture nests: three at Point 350 (38.54289 N / 69.87254 E), two at Point 351 (38.55266 N / 69.88575 E) and one at Point 347 (38.33192 N / 69.68716 E, approximately km 2, within the works zone).

B4.3 Eurasian Otter survey — daily results

The mammal expedition (8–10 May 2026) targeted aquatic mammals, in particular the Eurasian Otter, by surveying the banks of the Sari Khosor River for signs of activity (tracks, spraints and other traces).

8 May 2026:

- 38.33805, 69.68967 (963 m) — only tracks of Red Fox (*Vulpes vulpes*) detected.
- 38.35418, 69.69446 (971 m) — European Glass Lizard / Sheltopusik (*Pseudopus apodus*) observed.
- 38.41136, 69.70124 (1,085 m) — nothing detected.

9 May 2026:

- Near Shoidon village (38.52862, 69.82906; 1,373 m) — a bridge is under construction; approximately 300 m downstream, where two rivers merge, the water deepens and large rocky outcrops rise on both banks. At 38.52055, 69.82906 (1,304 m), otter tracks were found, and a Stone Marten (*Martes foina*) and a Stoat (*Mustela erminea*) were also sighted.
- 38.5453, 69.77348 (1,366 m) — 4 agama lizards observed.
- 38.48111, 69.77348 (1,159 m) — nothing detected owing to high current velocity.

In the lower part of the gorge the river spreads broadly, giving largely unfavourable conditions for otters.

10 May 2026:

- Work in the upper river was hampered by rainy weather and a sharp rise in water levels, making further surveys impossible.

Interviews with local residents indicated that otters are not observed in the lower river, while near Shoidon local fishermen reported instances of an otter attempting to take fish from their catches.

B5. Bird Survey — Detailed Point Records (Stage 1 and Stage 2)

A more detailed field report records the full species composition at each point across both survey stages. Stage 1 (8–10 May 2026) covered four points on 8 May, five on 9 May and five on 10 May. Stage 2 (16–18 May 2026) was a repeat survey by a four-person team from the Institute of Zoology and Parasitology of the National Academy of Sciences of Tajikistan (IZP NAST): Garibmamadov G.D. (Senior Research Fellow, Cand. Biol. Sci.), Talbonov Kh.M. (Senior Research Fellow, Cand. Biol. Sci.),



Safarmamadova Gavkhar (PhD candidate) and Shodibekov Umed (Doctoral candidate). For Stage 2 the team divided into two groups — Group 1 (Talbonov, Shodibekov) surveyed Points 1–8; Group 2 (Garibmamadov, Safarmamadova) surveyed Points 9–14.

B5.1 Stage 1 — 8 May 2026

Point 1 — 38.32458 N, 069.68871 E; 946 m; km 1.5; 11:00–14:00; clear, +27 °C.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Griffon Vulture	<i>Gyps fulvus</i>	9	285	2000	1000
2	Egyptian Vulture	<i>Neophron percnopterus</i>	2	285	2000	1000
3	Pallid Harrier	<i>Circus macrourus</i>	2	-	-	-
4	Red-rumped Swallow	<i>Cecropis daurica</i>	5	-	-	-
5	European Roller	<i>Coracias garrulus</i>	3	-	-	-
6	Common Buzzard	<i>Buteo buteo</i>	1	-	-	-
7	Carrion Crow	<i>Corvus corone</i>	1	-	-	-
8	Eurasian Magpie	<i>Pica pica</i>	2	-	-	-
9	House Sparrow	<i>Passer domesticus</i>	10	-	-	-

Point 2 — 38.37446 N, 069.69367 E; 980 m; km 8; 14:30–16:30; clear, +31 °C. One bird recorded: Carrion Crow (*Corvus corone*), 1.

Point 3 — 38.33192 N, 069.68716 E; 988 m; km 2; 16:30 onwards; clear, +30 °C. Egyptian Vulture nest observed.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Egyptian Vulture nest	<i>Neophron percnopterus</i>	1	245	300	500
2	Egyptian Vulture	<i>Neophron percnopterus</i>	4	-	300	200

Point 4 — 38.41119 N, 069.70129 E; 1,090 m; km 13; 17:00–19:00; clear, +27 °C.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Griffon Vulture	<i>Gyps fulvus</i>	2	90	1000	2000
2	Cinereous Vulture	<i>Aegypius monachus</i>	2	180	1000	2000
3	European Roller	<i>Coracias garrulus</i>	3	-	-	-
4	Carrion Crow	<i>Corvus corone</i>	2	-	-	-
5	Common Myna	<i>Acridotheres tristis</i>	15	-	-	-

B5.2 Stage 1 — 9 May 2026

Point 5 — 38.52947 N, 069.85406 E; 1,338 m; 07:00–09:00; clear, +15 °C.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Griffon Vulture	<i>Gyps fulvus</i>	2	315	3000	2000
2	Common Raven	<i>Corvus corax</i>	2	-	-	-
3	Carrion Crow	<i>Corvus corone</i>	4	-	-	-
4	Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i>	14	-	-	-
5	Common Blackbird	<i>Turdus merula</i>	1	-	-	-
6	White Wagtail	<i>Motacilla alba</i>	2	-	-	-

Point 6 — 38.54289 N, 069.87254 E; 1,362 m; 09:30–11:30; clear, +22 °C. Three Egyptian Vulture nests recorded.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Egyptian Vulture nest	<i>Neophron percnopterus</i>	1	275	400	450



No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
2	Egyptian Vulture nest	Neophron percnopterus	1	0	450	550
3	Egyptian Vulture nest	Neophron percnopterus	1	15	600	700
4	Egyptian Vulture	Neophron percnopterus	1	75	40	0
5	Egyptian Vulture	Neophron percnopterus	4	315	40	300
6	Carrion Crow	Corvus corone	1	-	-	-
7	Common Nightingale	Luscinia megarhynchos	1	-	-	-
8	Spotted Flycatcher	Muscicapa striata	1	-	-	-
9	White Wagtail	Motacilla alba	3	-	-	-
10	Little Ringed Plover	Charadrius dubius	1	-	-	-
11	Common Sandpiper	Actitis hypoleucos	1	-	-	-

Point 7 — 38.55266 N, 069.88575 E; 1,384 m; 12:00–14:00; clear, +27 °C. Two Egyptian Vulture nests recorded.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Egyptian Vulture nest	Neophron percnopterus	1	304	700	750
2	Egyptian Vulture nest	Neophron percnopterus	1	304	750	800
3	Barbary Falcon	Falco peregrinus babylonicus	1	-	100	20
4	White Wagtail	Motacilla alba	2	-	-	15

Point 8 — 38.57781 N, 069.91264 E; 1,422 m; 14:20–16:20; clear, +27 °C.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Egyptian Vulture	Neophron percnopterus	1	-	50	100
2	Common Raven	Corvus corax	1	-	-	-
3	Carrion Crow	Corvus corone	28	-	-	-
4	Eurasian Golden Oriole	Oriolus oriolus	2	-	-	-

Point 9 — 38.61077 N, 069.94663 E; 1,471 m; 16:40–18:40; clear, +26 °C. One bird recorded: Carrion Crow, 1.

B5.3 Stage 1 — 10 May 2026

Point 10 — 38.38088 N, 069.59395 E; 1,566 m; 07:30–09:30; clear, +27 °C.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Eurasian Golden Oriole	Oriolus oriolus	2	-	-	-
2	Common Nightingale	Luscinia megarhynchos	1	-	-	-
3	Common Blackbird	Turdus merula	1	-	-	-
4	Carrion Crow	Corvus corone	2	-	-	-
5	Eurasian Magpie	Pica pica	1	-	-	-
6	Common Raven	Corvus corax	2	-	-	-
7	Eurasian Hoopoe	Upupa epops	1	-	-	-

Point 11 — 38.38088 N, 069.59395 E; 1,566 m; km 54; 09:40–11:40; foggy and rainy, +12 °C. No birds observed.

Point 12 — 38.51245 N, 069.81502 E; 1,267 m; km 25; 13:30–15:30; overcast, mountain fog, +18 °C.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Common Myna	Acridotheres tristis	20	-	-	-
2	Brown Shrike	Lanius cristatus	3	-	-	-
3	Eurasian Hoopoe	Upupa epops	1	-	-	-
4	Carrion Crow	Corvus corone	3	-	-	-



5	Spotted Flycatcher	Muscicapa striata	2	-	-	-
6	Common Nightingale	Luscinia megarhynchos	1	-	-	-
7	Eurasian Golden Oriole	Oriolus oriolus	1	-	-	-
8	Passerines sp.		16	-	-	-

Point 13 — 38.47991 N, 069.77149 E; 1,164 m; km 18; 15:40–17:40; overcast, mountain fog, +18 °C. Carrion Crow (2); Passerines sp. (3).

Point 14 — 38.44232 N, 069.73442 E; 1,180 m; km 14; 17:50–19:50; overcast, mountain fog, +18 °C.

No.	Species (English)	Latin name	Count	Dir. (°)	Dist. (m)	Alt. (m)
1	Blue Whistling Thrush	Myophonus caeruleus	1	-	-	-
2	Common Raven	Corvus corax	1	-	-	-
3	Eurasian Hobby	Falco subbuteo	2	-	-	-

B5.4 Stage 2 — repeat survey, 16–18 May 2026

Group 1 (Talbonov, Shodibekov) re-surveyed Points 1–8 on 16 May; Group 2 (Garibmamadov, Safarmamadova) re-surveyed Points 9–14 over 16–18 May. Records were consistent with Stage 1; the nest sites were re-confirmed occupied. Selected notable Stage 2 records: Point 3 (km 2) — the nests were noted to be built in a ravine formed by a landslide; Point 9 (38.54289 N, km 30) — three Egyptian Vulture nests in fissures in rocky cliffs with wind-eroded cavities; Points 10, 11 and 13 — two Egyptian Vulture nests each re-confirmed; a single Barbary Falcon again recorded at the Point 10 / Point 351 cliff face. Full Stage 2 point tables mirror the Stage 1 records above and are retained in the surveyors' technical report.

B6. Raptor Monitoring and Community Consultations (Ergashev, 9–10 May 2026)

On 9–10 May 2026 a field expedition monitored populations of rare and endangered raptor species listed in the Red Book of Tajikistan and the IUCN Red List. Target species included Egyptian Vulture (*Neophron percnopterus*), Cinereous Vulture (*Aegypius monachus*), Bearded Vulture (*Gypaetus barbatus*), Golden Eagle (*Aquila chrysaetos*), Barbary Falcon (*Falco pelegrinoides*), Blue Whistling Thrush (*Myophonus caeruleus*) and Little Forktail (*Microcichla scouleri*). The expedition covered a 56 km route from Baljuvon to the jamoat of Sari Khosor, with 14 key observation points selected for landscape features, potential target-species habitat and maximum visibility.

B6.1 Raptor findings

At observation points within the section between km 2 and km 4 of the route, two raptor nests were identified — one Egyptian Vulture and one Cinereous Vulture. This section falls within the zone of the planned road works, raising particular concern; the report recommends developing measures to minimise impact, possibly by adjusting the works schedule or methodology to avoid disturbing the birds during the critical breeding period. National breeding-population reference estimates cited in support of the PBF assessment are: Cinereous Vulture 40–50 pairs; Bearded Vulture 70–80 individuals; Barbary Falcon 20–25 pairs.

Relationship to the Khursand/Nugzar/Talbonov nests

The Ergashev Egyptian Vulture nest at km 2–4 is the same receptor as the Point 347 / km 2 nest tabulated in Section B4.2 (38.33192 N / 69.68716 E). The Ergashev Cinereous Vulture nest is a separate, additional receptor at the same southern cliff-face cluster. The two bird teams otherwise recorded non-overlapping nest sites (Ergashev in the south; Khursand/Nugzar/Talbonov at the northern points). See Section B7.



B6.2 Community consultations

The second day was dedicated to gathering information from the local population. Between the villages of Bogi Zogon and Doshmandi, a structured questionnaire survey was carried out with six local residents (items 5 to 10 of the questionnaire). The limited number reflected the small number of households along the route and the weather. Interviews assessed respondents' knowledge of rare fauna (particularly mammals and birds) and gathered information on observations or environmental changes relevant to the road works. The six participants were:

- A game warden of the Baljuvon forestry enterprise;
- A teacher of secondary school No. 28 in the village of Dashtikilko;
- A herder driving livestock from Vakhsh district;
- A resident of Doshmandi village;
- A resident of Doshmandi village;
- A herder driving livestock from Yavan district.

Most respondents demonstrated reasonably good knowledge of local fauna, strongest for frequently encountered species (mountain goats, foxes, wild boar and various birds). With the aid of photographs and brief descriptions, many were able to recognise the Egyptian Vulture and Cinereous Vulture despite their rarity, confirming a useful level of community awareness of Red Book species. The expedition also photographed a confirmed Egyptian Vulture nest and a presumed second nest location.

B7. Data Reconciliation Notes

Three discrepancies between the source reports were identified and resolved as follows for the purposes of the Part A summary and the CHA. They are recorded here in full so that the basis of each decision is auditable.

B7.1 Anzur onion — species and chainage

Muhammadsoleh records the Anzur onion population as *Allium suworowii* between km 33 and km 34, whereas Khanjarov records *Allium stipitatum* (Persian shallot) at approximately km 25. Both are "Anzur" onions, but the species determination and the chainage differ. Pending field reconciliation and status confirmation against the 2024 Red Data Book, both records are retained in Table A2 with the discrepancy flagged.

B7.2 Egyptian Vulture nest count

The consolidated field summary cited "seven Egyptian Vulture nests" by adding the Ergashev km 2–4 nest to the six nests tabulated by Khursand/Nugzar/Talbonov. This double-counts the km 2 nest, which both teams recorded (it is the same receptor at 38.33192 N / 69.68716 E). The defensible confirmed figure carried into the CHA is therefore six Egyptian Vulture nests (one independently corroborated) plus one Cinereous Vulture nest. In addition, two further Egyptian Vulture nests referenced only in the detailed point narrative near km 36 (38.57781 N / 69.91264 E, Point 352 / Point 11) and two near 38.38088 N / 69.59395 E are not tabulated in either stage; these are held as provisional and deferred to the Stage 3 follow-up for verification.



COMMITTEE FOR ENVIRONMENTAL PROTECTION UNDER THE
GOVERNMENT OF THE REPUBLIC OF TAJIKISTAN

* * *

STATE ESTABLISHMENT “SPECIALLY PROTECTED NATURAL
AREAS”

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No 202 dated “13” 12 2024 year
To _____ dated “ ” 2024 year

State Unitary
Enterprise “Design
Institute for Transport
Infrastructure”

The Establishment has considered your letter of inquiry dated 10 December 2024, No.333 on the verification of potential impact from the implementation of the “Baljuvon-Sari Khosor Road Rehabilitation Project” on the natural area of the “Sari Khosor” Natural Park, and hereby brings to your notice that this park is located within the administrative territory of Baljuvon district, taking place at 5 km distance far from the corridor of Baljuvon-Sari Khosor Road to be build. The “Sari Khosor” Natural Park is one of the objects referred to the specially protected natural areas, and it is under a special regime of protection.

It should be noted that in general during the implementation of the project, certain components of the environment such as atmospheric air, land/soil, and flora experience impact in different forms, like physical impact, noise, vibration. However, considering that the “Sari Khosor” Natural Park is located at more than 5 km distance far, the probability of impacts on this natural area is rated as negligible.

At the same time, we are informing you, that within the territory of Dashtaro village, which is located in the vicinity of the Baljuvon-Sari Khosor Road to be build, there is a Bukhara Deer breeding farm with an area of 3 hectares in running, which is considered as one of the remote objects under the “Sari Khosor” Natural Park’s superintendence.

In view of all above stated and the requirements of acting legislation in the respect of specially protected natural areas, we proposed to take into account the probability of potential impacts on the mentioned breeding farm, while planning the construction and rehabilitation of the subject road, and provide for the necessary action measures.

Chairperson

[signed]

Kh.Shamsiddinzoda