



Regional Flyway Initiative · Site Study

May 2026

RFI Priority Site · Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)

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General Site Information

Country	Mongolia		
RFI Site Name	Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)		ID054
City/ Municipality, Province, Region	Boon Tsagaan Lake, Baatsagaan soum, Bayankhongor aimag Orog Lake, Bogd soum, Bayankhongor aimag Taatsiin Tsagaan Lake, Baruunbayan-Ulaan soum, Övörkhongai aimag		
Geographical coordinates	45.3°N, 100.12°E	Area	149,000 has
Key species	Dalmatian Pelican (staging), Hooded Crane (staging), Pallas's Fish Eagle, and several waterfowl species.		
Key habitats (biomes)	(alpine) desert lake and associated wetlands.		
Key ecosystem services	Flood hazard regulation, climate regulation, cultural services, and various provisioning services		
Key drivers of change	Overgrazing, climate change (driving desertification)		
Conservation status (mark all that applies)	☐ Protected Area	☐ Flyway Network Site	
	☐ Ramsar Site	☐ Others _____	
IBA/ KBA name (and number) and other designations	Three IBAs, namely Boon Tsagaan Lake, Taatsiin Tsagaan Lake and Orog Lake		
Management Stakeholders	MECC, MCST, MOFALI, Bayankhongor and Ovorkhangai aimag governments		
With management plan?			
Project concept themes	Grazing and livestock management, addressing desertification, tourism, biodiversity monitoring		
Length of project	5 years		
Sector/s	Agriculture, tourism		
No. of potential beneficiaries			
Indigenous Peoples	☐ No	☐ Yes, _____	
Anticipated Implementation Risks	Increase in tourism volume expected to increase pollution and disturbance to wildlife.		
Estimated Project Budget (US\$)	15,950,000		
Potential Source/s of Financing	☐ Loan (to be identified)	☐ Private Sector	
	☐ Grant (to be identified)	☐ Public-Private Partnership	

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Abbreviations

ADB	Asian Development Bank
AWC	Asian Waterbird Census
CAF	Central Asian Flyway
CSR	Conservation Status Review
DMC	Developing Member Country
EAAFP	East Asian-Australasian Flyway Partnership
IBA	Important Bird and Biodiversity Area
IUCN	International Union for the Conservation of Nature
KBA	Key Biodiversity Area
MECC	Ministry of Environment and Climate Change
MCST	Ministry of Culture, Sports, Tourism, and Youth
MOFALI	Ministry of Food, Agriculture, and Light Industry
NGO	Non-governmental Organization
NP	National Park
NR	Nature Reserve
NUM	National University of Mongolia
RBA	River Basin Authority
RFI	Regional Flyway Initiative
SPA	Strictly Protected Area
TESSA	Toolkit for Ecosystem Services Assessment
USD	United States Dollars
WMBD	World Migratory Bird Day
WSCC	Wildlife Science and Conservation Center of Mongolia

Executive Summary

The Valley of Lakes is a cluster of shallows, saline lakes sandwiched in the broad inter-montane depression between the Khangai and Gobi-Altai mountains in Mongolia's Gobi region. This arid-alpine landscape comprises four lakes; Boon Tsagaan Lake, Orog Lake, Taatsiin Tsagaan Lake and Adgiin Tsagaan Lake, and several smaller lakes although little of the surrounding desert-steppe landscapes is included within the Ramsar site boundaries. These lakes span two provinces, Bayankhongor and Ovorkhangai. These lakes are typically shallow with saucer shaped depth profiles and are fed by seasonal streams from the Khangai (to the north) and Gobi-Altai to the south, resulting in seasonal changes in extent, as they shrink it leaves behind areas of freshwater pools, marshes, salt marshes and salt pans, with some of the lakes drying out completely in years with low inflow. The Valley of Lakes one of the most significant wetland landscapes in southern Mongolia for migratory waterbirds with six species occurring regularly at levels >1% of the regional population, including Swan Goose *Anser cygnoides* (EN). Additionally, 23 threatened or near threatened migratory waterbird species are known to use the area including Baer's Pochard *Aythya baeri* (CR) and White-headed Duck *Oxyura leucocephala* (EN). Furthermore, 11 threatened or near threatened bird species are found at the site including Yellow-breasted Bunting *Emberiza aureola* (CR), Pallas's Fish-eagle *Haliaeetus leucoryphus* (EN), and Saker Falcon *Falco cherrug* (EN). Goitered Gazelle *Gazella subgutturosa* (VU) and two species of fish endemic to western Mongolia are known from this area.

The issues faced by the lake systems in the Valley of Lakes are multiple. The expanse of open water of all three major lakes has reduced significantly in recent history, likely driven by climate change, whilst fluctuating water levels arises due to upstream demand by the local population and for grazing livestock. The existing Bayanteeg coal mine (in Ovorkhangai) and the potential development of power generation facilities add another layer of risk and the potential to increase water demand in the area. At present the most significant issue affecting the Valley of Lakes landscape is overgrazing of livestock in an arid landscape that is high risk of desertification. The removal of vegetation and vehicular usage further contribute to land degradation. Livestock activity also contributes to nutrient pollution of water bodies.

There is considerable potential to improve site management and improve local resilience in the Valley of Lakes, alongside developing low intensity ecotourism in the landscape, while mitigating impacts on wildlife. Key priorities for improved management of the lakes and their surrounding landscapes are the strengthening and expansion of the site's management and zonation plan, to ensure that the ecologically most sensitive parts of the wetland are well zoned and protected and excluded from grazing. There is also scope for sustainable managing surrounding areas for livestock grazing and there should be a focus on protecting sensitive areas from nutrient pollution. Degraded arid areas may be restored with saxaul planting using approaches tested in China and Central Asia. Efforts should be made strengthen awareness and engagement among local communities of the sites' importance to biodiversity. The tourism potential of the site can be further explored and developed.

1. Background of the Regional Flyway Initiative

In July 2021, the Asian Development Bank made a commitment to develop a long-term Regional Flyway Initiative (RFI) in the East-Asian Australasian Flyway (EAAF) (Sovereign Project 55056-001) to protect and restore priority wetland ecosystems and the associated ecosystem services they provide in the EAAF, the most threatened migratory bird flyway globally. The Initiative is slated for implementation in nine ADB developing member countries (DMCs) in East, South and Southeast Asia: Mongolia, People's Republic of China (PRC), Bangladesh, Viet Nam, Cambodia, Philippines, Thailand, Malaysia and Indonesia. In 2023, the geographic scope of the RFI was further extended to two DMCs in Southeast Asia and the Pacific respectively, Lao PDR and Papua New Guinea.

The primary aim of the RFI is to enhance and expand the existing efforts in conserving and managing wetlands of the highest priority for migratory birds within the EAAF through innovative loan and grant financing, and at scale. Consultations and analyses over the development period help identify key interventions to strengthen the management of wetlands, enabling the implementation of nature-based solutions while strengthening biodiversity protection. Over time, the RFI seeks to leverage collaborative opportunities by developing partnerships among important stakeholders including national governments, civil society organizations, communities, regional organizations like the East Asian-Australasian Flyway Partnership (EAAFP), development agencies, the private sector, and other relevant entities.

Through the RFI Technical Assistance (TA) implemented over the RFI's development phase from 2021 to 2024, BirdLife International takes the lead in providing and coordinating technical support for development of the RFI. This is carried out in collaboration with the EAAFP and a consortium of international non-governmental organizations including Wetlands International and the Paulson Institute, as well as two universities, namely the University of Southampton, UK and the National University of Singapore. Over the development phase, the TA team undertook a site selection analysis to identify priority wetland sites in all 10 countries based on recent bird data benchmarked against internationally accepted criteria under the Convention on Wetlands of International Importance (or Ramsar Convention), EAAFP Flyway Network Sites and Important Bird and Biodiversity Areas (IBAs). The team further developed ecosystem services profiles for prioritised wetlands using a multi-pronged approach used the TESSA ecosystem services assessment tool, and data-driven modelling of water-based ecosystem services and stored carbon.

In Mongolia, a total of 48 wetland sites were initially assessed through published data in the Mongolia IBA Inventory (see Batbayar & Tseevenmyadag 2005), a review of the peer-reviewed literature, and consultations with technical experts. Of these, a total of (12) wetlands were ranked, defined and identified to be RFI priority sites on the basis that they support more than 1% the flyway population of at least one EAAF migratory waterbird species. Four (4) of the RFI wetland sites identified lie with the Amur-Heilongjiang Basin in eastern Mongolia, most notably a cluster of sites around Dornod and Sukhbaatar provinces, including Mongol Daguur SPA, Khurkh-Khuiten, Buir and Tashgain Tavan lakes. Two of the RFI sites, including Terkhiin Tsagaan and Ogii Lakes lie within the catchment of the Yenisei River, with outflows into the Selenge River. The remaining wetlands identified are endorheic lakes in the Altai or Gobi region. At least 48 EAAF species exceeded the 1% threshold at the site level in Mongolia, including nearly the entire breeding and staging population of the Swan Goose (Batbayar et al. 2013; Damba et al. 2021).

2. Site profile of Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)

Location: The Valley of Lakes includes a scatter of saline lakes in the broad inter-montane depression between the Khangai mountains of central Mongolia and the Gobi-Altai mountains of southern Mongolia, at the foot of the Khara-Argalantu ridge of the Gobi-Altai (Figures 1a and b). The most important wetlands for waterbirds in this arid alpine landscape are, (i) Boon Tsagaan Lake, which is located in Baatsagaan soum in Bayankhongor Province, between Ikh Bogd Mountain in the south and the semi-desert steppe of the Gobi Lakes valley in the north, 135 km south-southwest of Bayankhongor city and 285 km west-southwest of Arvayheer town; (ii) Orog Lake, which is bordered to the south by the slopes of Ikh Bogd Mountain and lies 125 km south of Jargalan Town; (iii) Taatsiin Tsagaan Lake, which is located near Baga Bogd Massif of the Gobi-Altai Mountains, 160 km southwest of Arvayheer Town, the capital of Övörhangai Province; and (iv) Adgiin Tsagaan Lake, which is located about 60 km east of Boon Tsagaan Nuur and 125 km south of Bayankhongor City.

Area: 93,500 ha (Boon Tsagaan Lake) and 56,400 ha (Orog and Taatsiin Tsagaan lakes). Total area 149,000 ha.

Altitude: 1,217-1,478 m asl.

Geographical coordinates: 45.3°N, 100.12°E

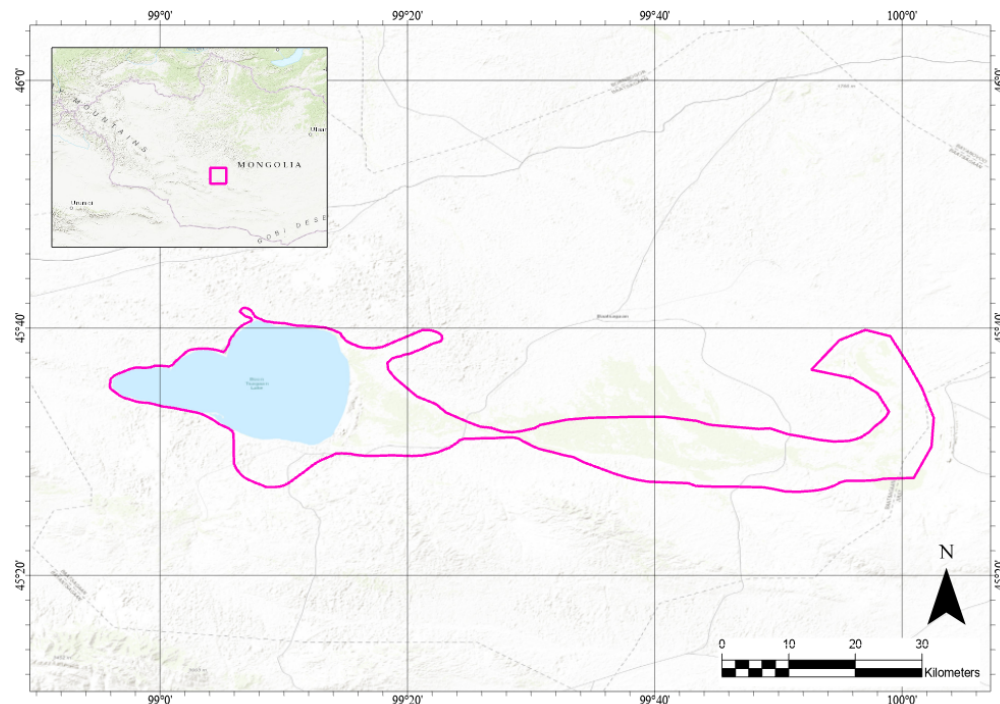


Figure 1. Map of Valley of Lake boundaries with inset map showing location of Boon Tsagaan Lake (Map: Evelyn Pina Covarrubias).

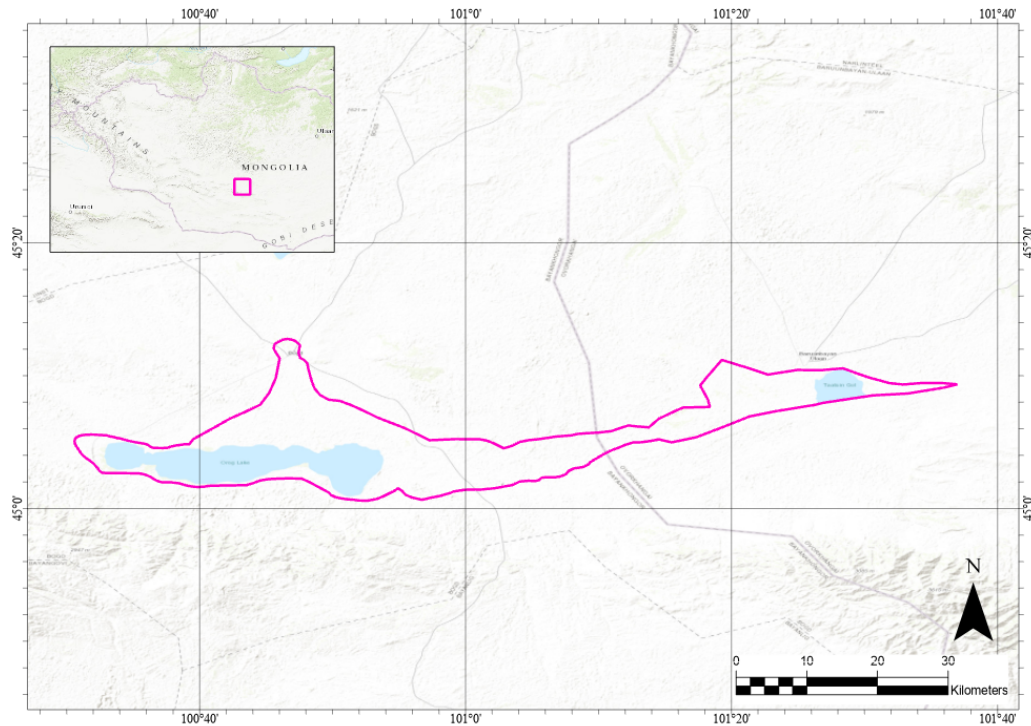


Figure 2. Map of Valley of Lake boundaries with inset map showing location of Orog (west) and Taatsiin Tsagaan (east) lakes (Map: Evelyn Pina Covarrubias).

Description of site: The saline lakes in this landscape are typically shallow, with a saucer-shaped depth profile, and they vary considerably in size both seasonally and from year to year. They all receive their inflow from rivers which rise in the Khangai Mountains, but with no permanent inflow from the Gobi-Altai. The lakes typically reach their maximum area in spring because of the inflow of melt water from the Khangai Mountains, and as they shrink it leaves behind areas of freshwater pools, marshes, salt marshes and salt pans, with some of the lakes drying out completely in years with low inflow. Today, the most important wetlands for waterbirds in this landscape are, (i) Boon Tsagaan Lake, which receives water from the Baidrag River, and has a large area of saxaul *Haloxylon ammodendron* forest along the southern shore of the lake and bushy steppe in the north and, (ii) Orog Lake, which receives inflow from the Tuin River, resulting in a large wetland on the north shore of the lake. To the south, Orog Lake is bordered by the slopes of Ikh Bogd Mountain, which supports desert steppe, and gives rise to several streams with associated wetlands. Taatsiin Tsagaan and Adgiin Tsagaan Lake once supported large congregations of waterbirds but have largely dried up in recent years.

Site administration, management and land tenure: The Valley of Lakes was designated as a Ramsar site in 1998, and as three separate IBAs (Boon Tsagaan Lake, Orog Lake and Taatsiin Tsagaan IBAs) identified by WSCC in 2009. These lakes and the surrounding areas are state owned and under the jurisdiction of the Ministry of Environment and Climate Change, and the management authorities of the Ramsar sites are Buuntsagaan - Orog Lake Basin Administration in Bayankhongor province and Ongi-Taats River Basin Administration in Ovorkhangai province.

Social and economic values: The main land use at the Valley of Lakes is livestock grazing, including of horses, goats, sheep and cattle in the freshwater marshes, and camels in the more arid areas. The availability of grazing land is important in an otherwise arid region, but it is causing the degradation of wetland vegetation and trampling of lakeside reed beds. The lakes are also used for fishing, and the site is considered to be suitable for the development of recreation and ecotourism, although there is presently little tourism infrastructure in this area.

3. Biodiversity value of Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)

3.1. Key habitats

The saline lakes in this landscape are typically shallow, with a saucer-shaped depth profile, and they vary considerably in size both seasonally and from year to year. They all receive their inflow from rivers which rise in the Khangai Mountains, but with no permanent inflow from the Gobi-Altai. The lakes typically reach their maximum area in spring because of the inflow of melt water from the Khangai Mountains, and as they shrink it leaves behind areas of freshwater pools, marshes, salt marshes and salt pans, with some of the lakes drying out completely in years with low inflow.

3.2. Importance of the Valley of Lakes for migratory waterbird species

The Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan) in the Mongolian Gobi was prioritised as an RFI site because it is known to support internationally important populations of the migratory waterbirds listed including six species which have exceeded the 1% population estimates based on the Conservation Status Review (CSR1; Table 1) (Mundkur and Langendoen 2022). The data used to assess these species was compiled from Batbayar and Tseveenmyadag (2009), together with the available bird count data from the peer-reviewed literature. A review and prioritization exercise of the list of candidate RFI sites was conducted by national and international (EAAFP, Wetlands International and BirdLife) ornithological experts, which confirmed that Valley of Lakes (including Boon Tsagaan, Orog Lake) retains its wetland habitats and outstanding importance for migratory waterbirds and recommended that it should be included as a high-priority wetland site for the RFI.

Table 1. List of migratory species (based on the EAAFP list of species) with globally significant congregations in the Valley of Lakes. See also Batbayar and Tseveenmyadag (2009) and Mundkur and Langendoen (2021).

Species name	IUCN	CSR1 score
Mute Swan <i>Cygnus olor</i>	LC	>10%
Whooper Swan <i>Cygnus cygnus</i>	LC	>1%

Greylag Goose <i>Anser anser</i>	LC	>1%
Swan Goose <i>Anser cygnoides</i>	EN	>10%
Common Shelduck <i>Tadorna tadorna</i>	LC	>1%
Ruddy Shelduck <i>Tadorna ferruginea</i>	LC	>1%
Great Cormorant <i>Phalacrocorax carbo</i>	LC	>1%
Dalmatian Pelican <i>Pelecanus crispus</i>	NT	>10%
Black Stork <i>Ciconia nigra</i>	LC	>1%
Eurasian Spoonbill <i>Platalea leucorodia</i>	LC	>1%
Great Crested Grebe <i>Podiceps cristatus</i>	LC	>1%
Ferruginous Duck <i>Aythya nyroca</i>	NT	>1%
Baer's Pochard <i>Aythya baeri</i>	CR	>1%
Grey Plover <i>Pluvialis squatarola</i>	VU	>1%
Caspian Tern <i>Hydroprogne caspia</i>	LC	>1%

The Valley of Lakes additionally supports populations of the following globally threatened and near threatened migratory waterbirds, White-headed Duck *Oxyura leucocephala* (EN), Dalmatian Pelican *Pelecanus crispus* (NT), Swan Goose *Anser cygnoides* (EN), Black-tailed Godwit *Limosa limosa* (NT), Bar-tailed Godwit *Limosa lapponica* (NT), Relict Gull *Larus relictus* (VU), Northern Lapwing *Vanellus vanellus* (NT), Eurasian Curlew *Numenius arquata* (NT), Broad-billed Sandpiper *Calidris falcinellus* (VU), Sharp-tailed Sandpiper *Ca. acuminata* (VU), Common Pochard *Aythya farina* (VU), Red-necked Stint *Calidris ruficollis* (NT), Asian Dowitcher *Limnodromus semipalmatus* (NT), Ruddy Turnstone *Arenaria interpres* (NT), Dunlin *Ca. alpina* (NT), Red Knot *Ca. canutus* (NT), Curlew Sandpiper *Ca. ferruginea* (VU), White-naped Crane *Antigone vipio* (VU), Red-breasted Goose *Anser ruficollis* (VU) and Black-legged Kittiwake *Rissa tridactyla* (VU).

3.3. Other notable biodiversity

In addition to the waterbirds, the Valley of Lakes is known to support populations of the globally threatened or near threatened; Yellow-breasted Bunting *Emberiza aureola* (CR), Pallas's Fish-eagle *Haliaeetus leucoryphus* (EN), Saker Falcon *Falco cherrug* (EN), Cinereous Vulture *Aegypius monachus* (NT), Himalayan Vulture *Gyps himalayensis* (NT), Bearded Vulture *Gypaetus barbatus* (NT), Steppe Eagle *Aquila nipalensis* (EN), Eastern Imperial Eagle *Aquila heliaca* (VU), Pallid Harrier *Circus macrourus* (NT), and Asian Houbara *Chlamydotis macqueenii* (VU). Further to the birdlife Goitered Gazelle *Gazella subgutturosa* (VU) and two species of fish endemic to western Mongolia are known from this area.

4. Ecosystem services

4.1. Ecosystem services provided by Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)

The Valley of Lakes landscape encompasses diverse wetland habitats and provides a variety of ecosystem services (Figure 3), including provisioning, regulating, and cultural services that are vital to communities within the site (Table 2). The results from the RFI workshop¹ highlight the top ecosystem services provided by the site, emphasising their essential and non-substitutable nature (Table 2). These provisioning services (genetic resources, and natural medicines and pharmaceuticals), regulating services (local climate regulation and flood hazard regulation), and cultural services (recreation and ecotourism) are considered essential or non-substitutable, benefitting the communities within the site. The provisioning of natural medicines and pharmaceuticals and regulating services such as local climate regulation and flood hazard regulation, are also benefitting the communities adjacent to and distant from the site.

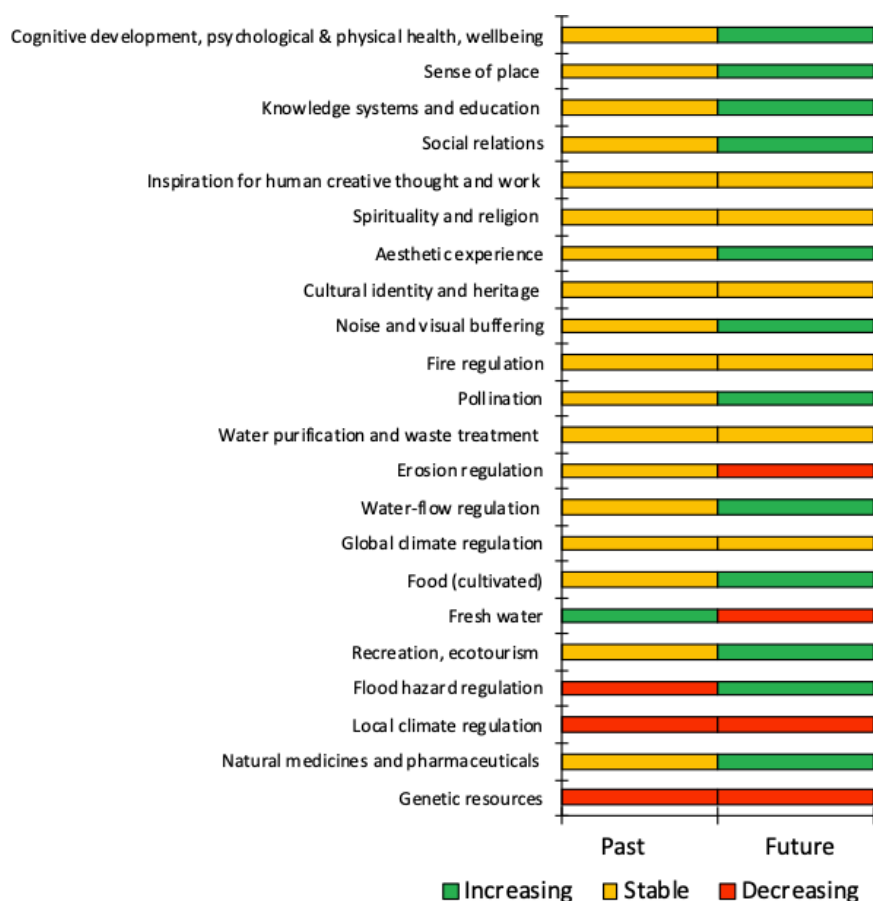


Figure 3. List of ecosystem services provided by Valley of Lakes (Boon Tsagaan Lake and surrounding landscapes), as identified through stakeholder consultation at the Regional Flyway Initiative workshop.

¹ Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

The Valley of Lakes landscape encompasses diverse wetland habitats and provides a variety of ecosystem services (Figure 4), including provisioning, regulating, and cultural services that are vital to communities within the site (Table 3). The results from the RFI workshop² highlight the top ecosystem services provided by the site, emphasising their essential and non-substitutable nature (Table 3). These provisioning services (fresh water, and natural medicines and pharmaceuticals), regulating service (erosion regulation), and cultural services (recreation and ecotourism, and social relations) are considered essential or non-substitutable, benefitting the communities within the site and those adjacent to the site.

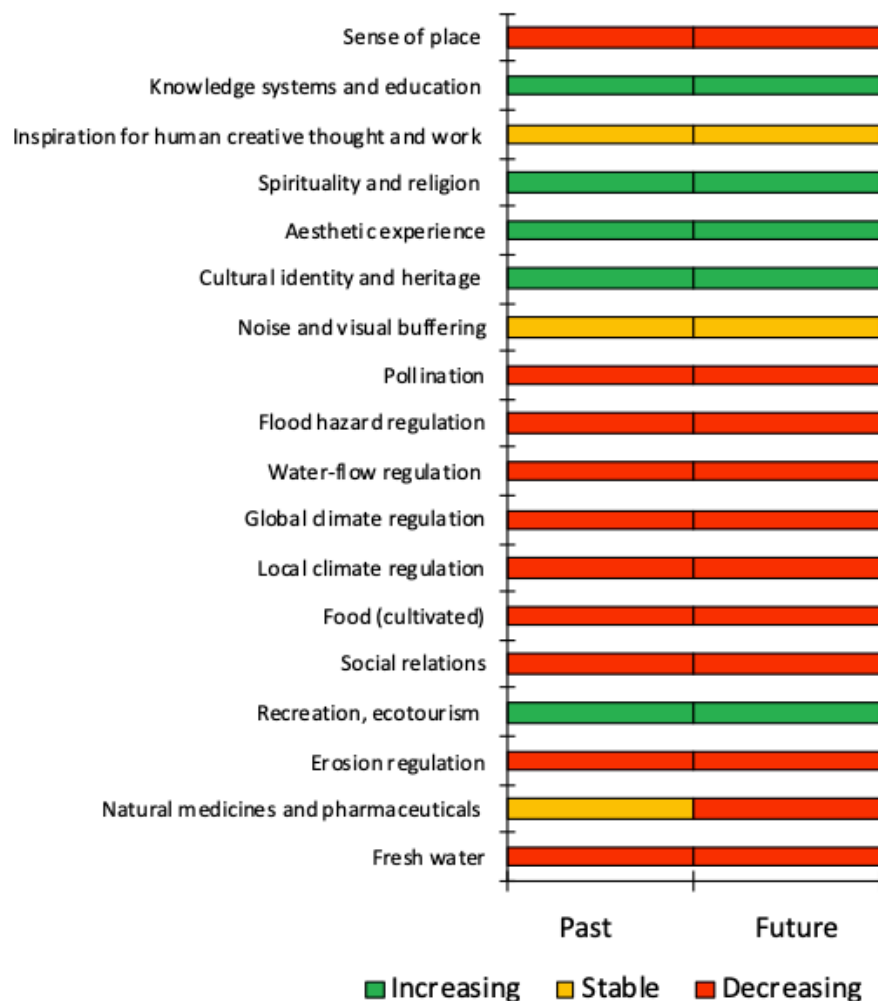


Figure 4. List of ecosystem services provided by Valley of Lakes (Orog Lake and surrounding landscapes), as identified through stakeholder consultation at the Regional Flyway Initiative workshop.

² Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

Table 2. List of top ecosystem services provided by Valley of the Lakes (A).

Ecosystem services	Essential or non-substitutable	Benefits to communities			Change	
		Within the site	Adjacent to the site	Distant to the site	Past	Future
Provisioning services						
Genetic resources	Yes	✓			Decrease	Decrease
Natural medicines and pharmaceuticals	Yes	✓	✓	✓	No change	Increase
Regulating services						
Local climate regulation	Yes	✓	✓	✓	Decrease	Decrease
Flood hazard regulation	Yes	✓	✓	✓	Decrease	Increase
Cultural services						
Recreation, ecotourism	Yes	✓			No change	Increase

Table 3. List of top ecosystem services provided by Valley of the Lakes (B).

Ecosystem services	Essential or non-substitutable	Benefits to communities			Change	
		Within the site	Adjacent to the site	Distant to the site	Past	Future
Provisioning services						
Fresh water		✓	✓		Decrease	Decrease
Natural medicines and pharmaceuticals		✓	✓		No change	Decrease
Regulating services						
Erosion regulation		✓	✓		Decrease	Decrease
Cultural services						
Recreation, ecotourism		✓	✓		Increase	Increase
Social relations		✓	✓		Decrease	Decrease

4.2. Global climate regulating services

The stakeholders at the RFI workshop³ did not identify global climate regulating services as important benefits provided by Valley of the Lakes. Therefore, these ecosystem services were not assessed.

³ Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

4.3. Flood mitigation services

The stakeholders at the RFI workshop⁴ did not identify flood mitigating services as important benefits provided by Valley of the Lakes. Therefore, these ecosystem services were not assessed.

5. Drivers of change and their potential impacts on Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)

5.1. Current drivers of change and their level of impact

Stakeholders at the RFI workshop⁵ identified 36 drivers of change impacting Valley of Lakes (A) and their corresponding levels of impact on the wetland site (Table 4). High-impact drivers include desertification; drought conditions; droughts; excess energy; habitat shift and alteration; livestock farming and grazing; loss of hydrological connectivity; mining and quarrying; oil, gas drilling and extraction of sand; storm and flooding; and temperature extremes. A medium impact is associated with activities of site managers; dams, hydrological modification, and water management/use; energy generation, including from hydropower dams, wind farms and solar panels; erosion and siltation/deposition; natural deterioration of important cultural wetland site values; pathogens; research, education, and other work-related activities; restoration for conservation; and other 'edge-effects' that degrade the wetland site values.

Stakeholders at the RFI workshop⁶ identified 25 drivers of change impacting Valley of Lakes (B) and their corresponding levels of impact on the wetland site (Table 5). High-impact drivers include activities of site managers; collecting terrestrial plants or plant products (non-timber); desertification; drought conditions; droughts; garbage and solid waste; habitat clearing; habitat shifting and alteration; housing and settlement; loss of keystone species; mining and quarrying; natural deterioration of important cultural wetland site values; storm and flooding; temperature extremes; water extraction/diversion within the wetland site or catchment; and other 'edge-effects' that degrade the wetland site values. A medium impact is associated with erosion and siltation/deposition; excess ponding of water on-site; industrial, mining and military effluents; livestock farming and grazing; recreation activities and tourism; research, education and other work-related activities; roads and railroads; and vandalism, destructive activities or threats to staff and visitors.

⁴ Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

⁵ Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

⁶ Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

Table 4. Drivers of change and their potential impact on the integrity of Valley of the Lakes (A) based on consultations with stakeholders.

Driver of change	Impact
Desertification	High
Drought conditions	
Droughts	
Excess energy	
Habitat shifting and alteration	
Livestock farming and grazing	
Loss of hydrological connectivity	
Mining and quarrying	
Oil and gas drilling; extraction of sand	
Storm and flooding	
Temperature extremes	
Activities of site managers	Medium
Dams, hydrological modification and water management/use	
Energy generation, including from hydropower dams, wind farms and solar panels	
Erosion and siltation/deposition	
Natural deterioration of important cultural wetland site values	
Other 'edge effects' that degrade the wetland site values	
Pathogens	
Research, education and other work-related activities	
Restoration for conservation	Low
Agricultural and forestry effluents	
Destruction of cultural heritage buildings, gardens, sites, etc.	
Excess ponding of water onsite	
Fishing, killing and harvesting of aquatic resources	
Habitat clearing	
Household sewage and urban wastewater from outside the wetland site	
Hunting, killing and collecting of terrestrial animals	
Increased fragmentation within the wetland site	
Introduced genetic material	
Invasive plant species	
Loss of cultural links, traditional knowledge and/or management practices	
Loss of keystone species	
Marine and freshwater aquaculture	
Recreational activities and tourism	
Tourism and recreation infrastructure	
Water extraction/diversion within the wetland site or catchment	

Table 5. Drivers of change and their potential impact on the integrity of Valley of the Lakes (B) based on consultations with stakeholders.

Driver of change	Impact
Activities of site managers	High
Collecting terrestrial plants or plant products (non-timber)	
Desertification	
Drought conditions	
Droughts	
Garbage and solid waste	
Habitat clearing	
Habitat shifting and alteration	
Housing and settlement	
Loss of keystone species	
Mining and quarrying	
Natural deterioration of important cultural wetland site values	
Other 'edge effects' that degrade the wetland site values	
Storm and flooding	
Temperature extremes	
Water extraction/diversion within the wetland site or catchment	
Erosion and siltation/deposition	Medium
Excess ponding of water onsite	
Industrial, mining and military effluents	
Livestock farming and grazing	
Recreational activities and tourism	
Research, education and other work-related activities	
Roads and railroads	
Vandalism, destructive activities or threats to staff and visitors	
Tourism and recreation infrastructure	Low

5.2. Potential alternative state of Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan) under current drivers of change

Stakeholders at the RFI workshop⁷ defined the most plausible future alternative state (scenario) for the site up to 2035 and converted this scenario into a net change in the cover of different types of wetland habitats within this site (current habitat cover vs future alternative cover; see Figures 5 and 6). This future scenario assumes that the current drivers of change affecting the site and the existing management practices will remain unchanged.

⁷ Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

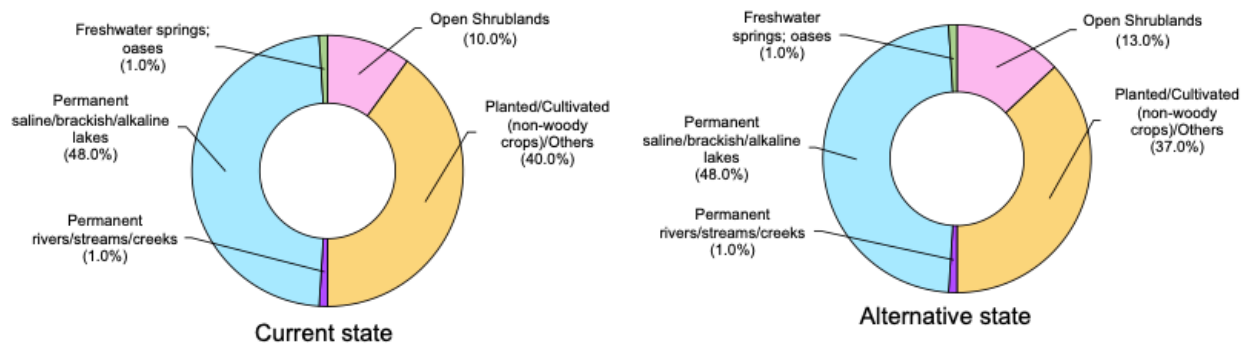


Figure 5. The proportional change in the extent of different habitat types between the current and alternative states of Valley of the Lakes (Boon Tsagaan Lake and surrounding landscapes).

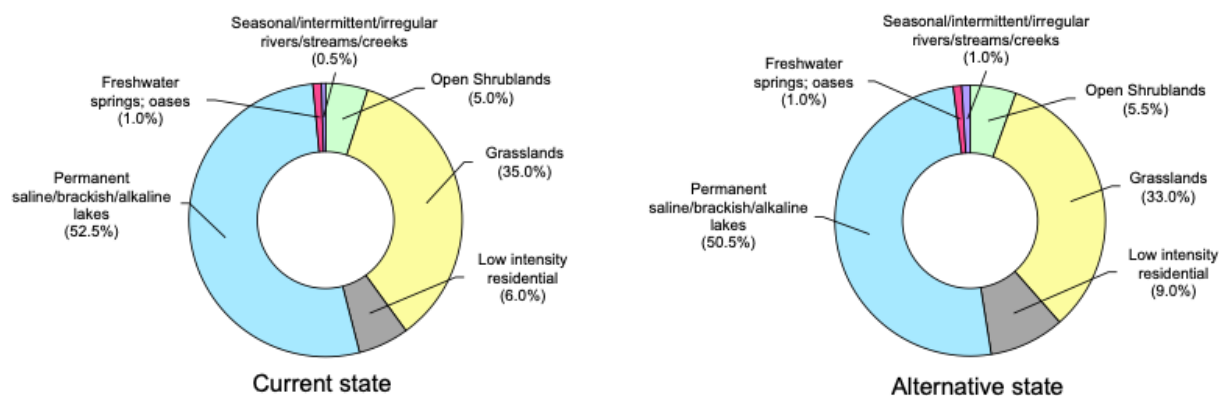


Figure 6. The proportional change in the extent of different habitat types between the current and alternative states of Valley of the Lakes (B).

5.3. Expected changes in the ecosystem services of Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)

Stakeholders at the RFI workshop⁸ assessed future trends in the ecosystem services provided by the Valley of Lakes. Based on their local knowledge, they documented whether these services are expected to increase, decrease, or remain unchanged by 2035, assuming the current drivers of change affecting the site and the current interventions remain unchanged.

Figure 3 and Table 2 show that the provisioning of the genetic resources and regulating services such as local climate regulation has decreased in the past and are expected to continue decreasing in the future. The provisioning of natural medicines and pharmaceuticals and cultural services – recreation/ecotourism

⁸ Asian Development Bank. (2024, November 28-29). *Mongolia: Wetland Ecosystem Services Workshop* [Workshop]. Mongolia <https://events.development.asia/learning-events/mongolia-wetland-ecosystem-services-workshop>

– has remained constant in the past but are expected to increase in the future. Flood hazard regulating service has decreased in the past but is expected to increase in the future.

Figure 4 and Table 3 show that the benefits of fresh water, erosion regulation, and social relations have decreased in the past and is expected to continue decreasing in the future. Recreation and ecotourism have increased in the past and is expected to continue increasing in the future. The provisioning of natural medicines and pharmaceuticals has remained constant in the past but is expected to decrease in the future.

Mongolia has experienced a 7% decline rainfall over the period 1940-2005, whilst average temperatures rose by 2.4°C, though anecdotal evidence also suggests an increase in thunderstorms and high intensity rain events (World Bank Group 2021). Climate models suggest that under all emissions scenarios that Mongolia will warm more than the global average, and most models agree on the likelihood on a small increase in annual precipitation, with an increase in the intensity of extreme weather events (World Bank Group 2021). There is a strong likelihood of the increase of drought events and in recent history the extent of surface water, nationwide lake area shrank by around 7% over the 2000-2025 period, a trend which has been noticed since at least 1974. Many freshwater lakes and rivers are fed by glacial meltwater from the Altai, the glacial cover reduced by 30% between 1940-2011 (World Bank Group 2021). The fast population growth rate, increase in livestock, energy production and industry has increased the demand for water and these pressures need to be considered when developing project at areas such as Khar-Uls.

6. Capacity gaps and needs for the management of the Valley of Lakes (including Boon Tsagaan, Orog Lake and Taatsiin Tsagaan)

Thirteen (13) stakeholder groups were identified as important to the management of the wetlands in the Valley of Lakes (Table 6). Of immediate importance are stakeholders in the national and local governments who have jurisdiction over the management of the lake resources (and are also the Ramsar management authorities), and local herding communities who directly benefit from the lake.

Table 6. Stakeholder capacity needs in the Valley of Lakes.

Stakeholder group	Current role in wetland management (Positive or Negative)	Possible future role in wetland management	Current capacity for sustainable wetland management	Capacity development needed to improve wetland management	Form of capacity development (e.g. training, organizational strengthening)
Local herders	Overpopulation of animals, and pastureland degradation. Wildlife conflict.	Decrease the number of animals Rotate the pasture	Poor	Improved capacity on how to use wetlands sustainably	Training on wetland use and management
(Seasonal) tourists	Source of livelihood for local community	Source of livelihood for local community	Poor	Yes	-
Tourist companies	Support (by investing) the local economy	Expanding local investment through nature-based tourism	Poor	Yes	Treatment facility, waste management, places for camping
Soum government	Environmental and water law enforcement	Coordinating stakeholders	Poor	Yes	Training and improving human resources; ensuring compliance with standards
Aimag environment department	Enforcing comprehensive environment laws.	Environmental protection and ecosystem sustainability conservation	Poor	Yes	Ensure adequate number of rangers and environmental officers; regular reporting on

Stakeholder group	Current role in wetland management (Positive or Negative)	Possible future role in wetland management	Current capacity for sustainable wetland management	Capacity development needed to improve wetland management	Form of capacity development (e.g. training, organizational strengthening)
					environmental status/outlook
River basin authority	Enforcing the water law and regulations	Implementing RBA sustainability management	Poor	Yes	Capacity to improve specialists' skillsets. Understand research and studies to guide decision makers
National Metrology and Hydrology Agency	Doing monitoring	Identifying the water chemical composition, pastureland load capacity and climate conditions	Good	Yes	Lack of coordination with other organizations, prepare and provide reports and updates to the provincial level staff, and use better technology
Zoonotic disease agency	Undertake surveillance on disease spread risks	Prevent pandemic and outbreaks	Poor	Yes	Development of lab facilities
Research institutions	Monitoring wildlife and ecological studies	Monitoring wildlife and ecological studies (to guide wildlife management)	Medium	Yes	Undertake effective biodiversity studies for dissemination to local government officials, communities to improve site management. Also to build local capacity in biodiversity monitoring.

Stakeholder group	Current role in wetland management (Positive or Negative)	Possible future role in wetland management	Current capacity for sustainable wetland management	Capacity development needed to improve wetland management	Form of capacity development (e.g. training, organizational strengthening)
MECC	Enforcing environmental laws and standards	Ensuring environmental sustainability and climate adaptation	Medium	Yes	Implement evidence- based decisions, improve human resources and accurately identify [HR] functions'
Donor organizations	International convention	Make faster decisions	Medium	Yes	Improve coordination and share information
Conservation organizations	Limited	Research and monitoring	Poor	Yes	Technical support, through consultancies. Provide capacity building for local stakeholders.
Mining companies	Land degradation and water pollution. Reclamation and providing capital	Responsible mining practices improved	Poor	Yes	Improve the use of advanced tech, and reclamation in accordance with international standards

7. Opportunities for RFI interventions

7.1. Recommended Interventions

The Valley of Lakes landscape is likely to come under increasing pressure in the future due to the impacts of increased livestock grazing (and the increased water demand) and from the effects of climate change. Drought and desertification have been raised by stakeholders as high level concerns. These are likely exacerbated by overgrazing with livestock, land clearance, and vegetation collection. While livestock overgrazing has been raised as an issue; agricultural pollution is not seen as being a problem, but livestock defecation and nutrient run-off is likely a problem.

The Mongolian government's plan to construct a hydroelectric power plant on the Baidrag river between 2025 and 2029 is expected to significantly impact the Buuntsagaan Lake. In addition, ongoing activities along and upstream of the Baidrag River is likely to further increase pollution entering the lake.

The Bayanteeg Coal mine is located within close proximity (c 15 km) from the main watercourse that feeds into Taatsin Tsagaan Lake, there have been proposals for the development of a coal fired power station at the mine site. There are also suggestions that a hybrid solar / wind renewable powerplant has been proposed for this area. Both the proposals fossil fuel and the renewable energy plants could have negative environmental impacts.

Interventions proposed for the Valley of Lakes are largely focused on improving site management and zonation, grazing management and habitat restoration, with a focus on addressing desertification (Table 7). Livelihoods are considered through investigating the potential for ecotourism as the sites lie along major tourist routes from the Ulaanbaatar and the aimag capitals to the Great Gobi Strictly Protected Area and the Gobi Gurvansaikhan National Park.

Table 7. List of proposed interventions for Valley of Lakes and possible project indicators.

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
<i>Component 1. Strengthening site management and protection of key lakes (Boon Tsagaan, Taatsiin Tsagan and Orog lakes) and its surrounding wetland-steppe landscape</i>					
Undertake a scoping study of existing interventions and threats at key lakes and surrounding grasslands, including targeted assessment on long-term threats (from climate change, overgrazing,	Assessment and scoping guidance to provide basis for proposed RFI interventions. Threats faced by the lake ecosystem better understood, and	Assessment report with key threats identified and recommendations for improved management published and disseminated to key stakeholders.	100,000	2 years	MECC Bogd, Baatsagaan Barunbayan Ulaan soum governments Bayankhongor and Ovorkhangai

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
and tourism development)	potential interventions identified.	Number of stakeholder meetings conducted in the scoping study. Number of stakeholder groups engaged in the scoping study, ensuring a participatory assessment of existing interventions and threats.			aimag government Conservation organisations (e.g. WSCC Mongolia) ADB
Strengthen site management of Valley of Lakes Ramsar Site including the development of a comprehensive management plan	Valley of Lakes is better managed through the development of the site management plan, zonation plan defines sensitive areas where grazing activities is excluded, or highly regulated, and installation of boundary markers of sensitive zones Zoned areas that are ecologically sensitive better enforced against intensive grazing and marked.	Site management plan over short to medium-term developed, in consultation with key stakeholders, including communities inside the Ramsar site through participatory mapping. Number of stakeholder consultation meetings organized with local government and herding households (about 100 households at each lake landscape) Zonation plan defines sensitive areas where grazing activities should be excluded, or highly regulated. Number of meetings and workshops to strengthen engagement local stakeholders for participatory mapping for zonation, understand local livelihood needs, and engage national stakeholders. Management plan for Ramsar Site (Valley of	200,000	3 years	MECC Bayankhongor aimag government (for Boon Tsagaan and Orog) Ovorkhangai aimag government (for Taatsiin Tsagaan) Bogd, Baatsagaan Barunbayan Ulaan soum governments Local community groups Conservation organisations

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		Lakes developed through participatory processes involving and represented households within site. Establishment and installation of boundary markers of sensitive zones.			
<i>Component 2. Expand grassland and vegetation management and restoration in the landscapes (linked to component 1)</i>					
Undertake a comprehensive assessment of grazing pressure, vegetation cutting and land degradation in Valley of Lakes and the landscape immediately surrounding the site. Assessments to include information on water/nutrient pollution (from livestock defecation) and to identify polluting areas for management.	Valley of Lakes is better managed through remote sensing and participatory mapping of overgrazed areas, development of a roadmap and action plan for grassland restoration activities and grazing management, and production of a grassland/vegetation degradation map of Valley of Lakes	Map of grassland / vegetation degradation of Valley of Lakes produced. Action plan for grassland restoration activities drafted guided by remote sensing, participatory mapping of overgrazed areas, and grassland/vegetation degradation maps of the Valley of Lake, and hotspot mapping of overgrazing and water/nutrient pollution (from livestock defecation) Number of stakeholder groups engaged, targeting the local government and households (about 200 households) Number of meetings and workshops organized to strengthen	100,000	2 years	MOFALI MECC Bayankhongor aimag government (for Boon Tsagaan and Orog) Ovorkhangai aimag government (for Taatsiin Tsagaan) Bogd, Baatsagaan Barunbayan Ulaan soum governments Local community groups Conservation organisations

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		engagement local stakeholders for participatory mapping for zonation, understand local livelihood needs, and engage national stakeholders.			
Restore the degraded and overgrazed/ over-exploited areas of grassland (desert steppe) / vegetation (see also component 4 on grazing management, and sustainable herding practices)	Degraded areas of steppe grassland / vegetation damaged resulting from overgrazing restored.	Nurseries for vegetation restoration established. At least two pilot plots for grassland restoration established. At least 1,000 ha of degraded desert steppe restored over a five-year period.	200,000	5 years	
<i>Component 3. Wildlife research, monitoring and control.</i>					
Strengthen the wildlife protection and enforcement at Valley of Lakes	Improved wildlife protection and enforcement through co-management framework, increased patrol and enforcement efforts for landscape, wildlife protection and encroachment activities, and increased capacity of local rangers	Co-management framework with local communities developed. Number of households (target of at least 50% households in site) engaged and actively participating in co-management activities. Training program and modules on patrol and enforcement and using SMART approaches developed. Number of training activities conducted Number of local rangers trained on	250,000	5 years	MECC Bayankhongor aimag government (for Boon Tsagaan and Orog) Ovorkhangai aimag government (for Taatsiin Tsagaan) Bogd, Baatsagaan Barunbayan Ulaan soum governments

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		patrolling and enforcement.			Research institutions
Strengthen biodiversity and wetland monitoring, with a focus on threatened waterbird species and species in significant congregations	Better monitoring of biodiversity and wetland ecosystems in the landscape through a locally engaged biodiversity monitoring program and increased awareness of Dalmatian Pelican, geese species (as examples) and migratory waterbird conservation amongst local households.	Monitoring mechanism for the site established and synergized with existing management frameworks Number of monitoring activities conducted using the established biodiversity and wetland monitoring scheme. A locally led conservation group organized Number of awareness-raising activities (including workshops) on importance of nature protection, with a focus on charismatic bird species, implemented targeting at least 200 households Number of stakeholder groups engaged in the awareness-raising activities.	100,000	5 years	Local community groups Conservation organisations (including WSCC)

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Scale-up research on biodiversity and ecology to strengthen evidence base for management plan development (see component 1, 2)	Valley of Lakes is better management through Improved understanding of migratory species movements (and movement ecology in Valley of Lakes), strengthened local research capacity on wetland ecology, and improved knowledge of landscape and regional connectivity of migratory bird populations. Long-term data on changes in landscape and wetland quality to guide site management cycle.	Training programmes (including workshops) on grassland and wetland ecology, with a focus on charismatic bird and wildlife species developed Number of training activities implemented Number of stakeholders trained. Number of published research reflecting improved knowledge of landscape and regional connectivity of migratory bird populations.	200,000	3 years	Bogd, Baatsagaan Barunbayan Ulaan soum governments Research institutions (including universities) Conservation organisations (including WSCC, BirdLife)
<i>Component 4. Improving tourism infrastructure and local capacity for (low density) specialized, nature-based tourism</i>					
Conduct a tourism expansion feasibility study for Valley of Lakes landscapes (current tourism volume remains low)	Assessment and scoping guidance to provide basis for proposed ecotourism potential of the lake landscape, the impact of tourism expansion and management measures	Assessment report and recommendations for ecotourism potential published and disseminated to key stakeholders. Number of stakeholder meetings conducted in the scoping study. Number of stakeholder groups engaged in the scoping study, ensuring a participatory	100,000	1 year	MCST Research institutions Tourism operators ADB

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		assessment of existing tourism potential of lake.			
Establish basic infrastructure for specialized nature-based tourism including observation hides and shelters (low impact infrastructure) at selected lakes (e.g. Boon Tsagaan, currently most popular for tourists) (dependent on tourism assessment)	Impact of habitat degradation caused by tourism activities in the landscape reduced through well-regulated establishment of tourism facilities, strengthened local capacity, and microfinancing mechanisms.	Provincial-level tourism plans and strategies updated in coordination with MCST, MECC, aimag governments and tourism stakeholders. Training program on targeted sustainable tourism concepts developed. Number of training activities implemented Number of stakeholders trained Nature-based strategy and business plans and packages on specialized wildlife/nature tourism developed Number of tested business plans and packages with tourism operators (including international bird and wildlife tour companies). Microfinance schemes are set up to provide loans to small businesses involved with tourism. Number of small businesses benefiting from microfinancing.	500,000	3 years	MCST MECC Bayankhongor aimag government (for Boon Tsagaan and Orog) Ovorkhangai aimag government (for Taatsiin Tsagaan) Bogd, Baatsagaan Barunbayan Ulaan soum governments Tourism operators Conservation organisations (WSCC)

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Strengthen the capacity of local communities and businesses for nature-based tourism (dependent on tourism assessment findings)	Impact of habitat degradation caused by tourism activities in the landscape reduced through increased local capacity of local communities and businesses for nature-based tourism.	Framework for benefits-sharing from nature-based tourism enhanced for households in Uvs Lake. Training program on nature-based tourism developed Number of stakeholders trained on tourist management (target of 50 stakeholders)	300,000	5 years	
Establish new tourism infrastructure targeting specialized nature tourists. (dependent on tourism assessment)	Impact of habitat degradation caused by tourism activities in the landscape reduced through well-regulated establishment of tourism facilities for accommodation (ger camps, sanitary facilities) and access roads and waste management.	Number of tourism establishments developed in line with the assessment study results and sustainability plan for Boon Tsagaan Lake. Number of waste management infrastructure constructed to manage tourism waste. Number of stakeholders engaged in sustainable tourism-related activities Number of stakeholder groups engaged developing the well-regulated establishment of local tourism Number of people benefiting from the upgraded tourism infrastructure	500,000	3 years	MCST Bogd, Baatsagaan Barunbayan Ulaan soum governments Tourism operators Local community groups

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		Volume of solid waste managed properly.			
<i>Component 5. Strengthening community-based management in the Valley of Lakes to address overgrazing and desertification (see Component 2)</i>					
Strengthen the local capacity in sustainable rangeland management, and management of livestock	Improved conditions at all key lake sites against baselines (reduced organic pollution from animal waste) Improved condition of grassland (pasture) in zoned areas and adjacent landscapes against baselines.	Number of stakeholder consultation meetings organized, targeting at least 100 households per site Number of meetings and workshops to engage local people on rangeland management, sustainable grazing practices (and use of veterinary drugs harmful to wildlife, e.g. birds-of-prey) Training programmes focusing on community-based rangeland management, including livestock grazing regimes (e.g. rotational grazing) established (300 households trained) developed Number of stakeholders trained in sustainable rangeland management and herding practices. Number of trained stakeholders adopting sustainable rangeland management and herding practices	500,000	5 years	MOFALI Bayankhongor aimag government (for Boon Tsagaan and Orog) Ovorkhangai aimag government (for Taatsiin Tsagaan) Bogd, Baatsagaan Barunbayan Ulaan soum governments Conservation and development organisations

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Restore actively the degraded, arid areas (included dried lake beds) with tree planting	Degraded and arid areas restored through mapping of areas at high risk of desertification (including areas degraded by overgrazing identified) and targeted tree planting with Saxaul (<i>Haloxylon</i> spp.) trees	Landscapes mapped up for restoration and tree planting. At least 40% of highly degraded areas planted with Saxaul, or up to 1,000 ha. Number of stakeholders engaged in restoring degraded areas. Nurseries for vegetation restoration established.	500,000	4 years	MECC Bayankhongor aimag government (for Boon Tsagaan and Orog) Ovorkhangai aimag government (for Taatsiin Tsagaan) Bogd, Baatsagaan Barunbayan Ulaan soum governments Research institutions (desertification experts)
Scale up of sustainable rangeland use/grazing activities. Strengthen the resilience of herding households against desertification (and drought conditions)	Improved condition of grassland and shrubland in degraded areas at risk of desertification (in zoned areas) against baselines through microfinance mechanism (for local loans and grants), incentives (and compliance mechanisms) for best practices in grazing and rangeland management, and	Number of stakeholder consultation meetings organized, targeting XX households. Microfinancing mechanism established At least 300 households benefiting from small grants and microloans on animal husbandry and livestock management practices. Number of exchange visits for herding households to other landscapes with good grazing and livestock management in place.	500,000	5 years	MOFALI MECC Bayankhongor aimag government (for Boon Tsagaan and Orog) Ovorkhangai aimag government (for Taatsiin Tsagaan)

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
	benchmarking activities.	At least 20,000 ha of desert steppe under improved grazing management. Incentives (and compliance mechanisms) for best practices in grazing and rangeland management created. Number of stakeholders trained and engaged who adopted sustainable rangeland use/ grazing activities			Bogd, Baatsagaan Barunbayan Ulaan soum governments Conservation and development organisations ADB
Total investment for five years			15,950,000		

7.2. Potential Financing

The estimated project cost is USD 15,950,000 over a 5-year period. This project supports the development of plans for site management, zonation, a nature-based tourism strategy, and creation of a co-management framework, training programs on patrol and enforcement, biodiversity monitoring, nature-based tourism, community-based rangeland management, and solid waste management, establishment of infrastructure for tourism and waste management, and creation of microfinance mechanisms.

7.3. Proposed Institutional Arrangements

The proposed project is expected to be implemented over a period of at least five (5) years, with the main project components focusing on improving management of the wetlands and immediate landscapes around Boon Tsagaan, Taatsiin Tsagaan and Orog lakes, biodiversity monitoring, enhancing rangeland and grazing management practices (led by MECC, MOFALI and the soum government) for local grazing households, and supporting the development of locally-managed tourism infrastructure, and addressing land degradation and desertification. Conservation and research organisations such as the Wildlife Science and Conservation Center of Mongolia can be expected to play a major technical role in the wildlife monitoring and capacity building components.

7.4. Project Beneficiaries

This proposed project is expected to undertake activities to promote gender inclusion and participation in livelihood activities, through capacity building activities for local households.

7.5. Anticipated Implementation Risks

Environment: Nature-based tourism has been identified as a key project concept theme. The proposed interventions include establishing tourism infrastructure to improve the tourism experience at Valley of Lakes. Building these infrastructures, however, would generate noise that may disturb wildlife near ecologically sensitive wetland areas. Moreover, increasing tourism activities bring other human-induced impact, such as waste pollution. Planning with the stakeholders is critical before any infrastructure development and tourism management.

Social Safeguards: Regulation on grazing management may lead to short-term loss of income for some households. Scoping studies will be needed to assess the impact of these regulations on domestic incomes and the challenges of implementing these restrictions in a complex environment.

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Annex 1. Supplementary information on flood mitigation services

Table A1. Key habitat types in Valley of the Lakes (Boon Tsagaan Lake) based on stakeholder-based assessment at the Regional Flyway Initiative workshop in November 2024.

Habitat type	Current state		Alternative state (2035)	
	Area (ha)	Cover (%)	Area (ha)	Cover (%)
Open Shrublands	9352.7	10.0	12158.6	13.0
Planted/Cultivated (non-woody crops)/Others	37411.0	40.0	34605.2	37.0
Permanent rivers/streams/creeks	935.3	1.0	935.3	1.0
Permanent saline/brackish/alkaline lakes	44893.2	48.0	44893.2	48.0
Freshwater springs; oases	935.3	1.0	935.3	1.0
Total	93527.5	100.0	93527.5	100.00

Table A2. Key habitat types in Valley of the Lakes (Orog Lake) based on stakeholder-based assessment at the Regional Flyway Initiative workshop in November 2024.

Habitat type	Current state		Alternative state (2035)	
	Area (ha)	Cover (%)	Area (ha)	Cover (%)
Open Shrublands	2821.4	5.0	3103.5	5.5
Grasslands	19749.7	35.0	18621.2	33.0
Low intensity residential	3385.7	6.0	5078.5	9.0
Permanent saline/brackish/alkaline lakes	29624.6	52.5	28496.0	50.5
Freshwater springs; oases	564.3	1.0	564.3	1.0
Seasonal/intermittent/irregular rivers/streams/creeks	282.1	0.5	564.3	1.0
Total	56427.8	100.0	56427.8	100.00