ADB

Regional Flyway Initiative · Site Study

May 2026

RFI Priority Site · Tashgain Tavan Lakes

Prepared by Ding Li Yong & Mike Crosby, with additional input from Billy Fairburn, Kelvin Peh, Evelyn Pina-Covarrubias, Stefano Barchiesi and Radhika Bhargava

BirdLife International, University of Southampton, University of Singapore

Asian Development Bank

General Site Information

Country	Mongolia			
RFI Site Name	Tashgain Tavan Lakes			ID050
City/ Municipality, Province, Region	Tashgai Bag, Khalkhgol Soum, Dornod Aimag			
Geographical coordinates	47.37ºN, 118.45ºE		Area	53,304 ha
Key species	White-naped Crane, waterfowl species, including Swan Goose, Common Pochard, Falcated Duck, Stejneger's Scoter			
Key habitats (biomes)	Mongolian-Manchurian steppe biome.			
Key ecosystem services	Provisioning (water resources, livestock grazing, regulating and cultural services (tourism)			
Key drivers of change	Agricultural expansion, unsustainable livestock grazing			
Conservation status (mark all that applies)	■	Protected Area		Flyway Network Site
		Ramsar Site		Others _____
IBA/ KBA name (and number) and other designations	Tashgain Tavan Lakes			
Management Stakeholders	Dornod Provincial government, and Khalkhgol Soum government. Tashgai Bag government; Ministry of Environment and Climate Change			
With management plan?				
Project concept themes	Wetland management and biodiversity monitoring, rangeland management; nature-based tourism			
Length of project	5 years			
Sector/s	Livestock and rangeland management; tourism			
No. of potential beneficiaries				
Indigenous Peoples	■	No		Yes, _____
Anticipated Implementation Risks	Potential disturbance to wildlife from construction of new research and tourism infrastructure			
Estimated Project Budget (US$)	8,650,000			
Potential Source/s of Financing	■	Loan (to be identified)		Private Sector
	■	Grant (to be identified)		Public-Private Partnership

Table of Contents

Abbreviations

ADB	Asian Development Bank
AWC	Asian Waterbird Census
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
MAS	Mongolian Academy of Sciences
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
NSPA	Numrug Strictly Protected Area
NUM	National University of Mongolia
RFI	Regional Flyway Initiative
SPA	Strictly Protected Area
TTL	Tashgain Tavan Lakes
TESSA	Toolkit for Ecosystem Services Assessment
USD	United States Dollars
WCS	Wildlife Conservation Society
WSCC	Wildlife Science and Conservation Center Mongolia

Executive Summary

The wetlands of eastern Mongolia lies within the northern and central edge of the East Asian-Australasian Flyway (hereafter as the 'EAAF'); its diverse landscapes provide important staging and stopover habitat for internationally important concentrations of migrating waterbirds. Much of eastern Mongolia falls within the upper catchment of the Amur River Basin and is drained by tributaries of the Amur. The little-known Tashgai Tavan lakes (or Tashgai lakes) is recognised as an IBA and is a provincial-level nature reserve with jurisdiction under the Khalkgol soum government. Tashgai Tavain consists of a cluster of several small steppe lakes (e.g. Shuumar, Bayan, and Bayanburd) covering an area of more than 50,000 ha in the western foothills of the Khyangan mountains and is defined largely by feathergrass (*Stipa* spp.) steppe typical of the Mongolian-Manchurian steppe biome. There are also extensive stands of reedbeds, marshes and bogs. The steppes and wetlands of the Tashgain Tavan lakes landscape are recognised as among the most important staging and stopover sites for migratory waterbirds in eastern Mongolia, supporting globally significant populations of the Swan Goose *Anser cygnoid* (VU), White-naped Crane *Antigone vipio* (VU), Common Pochard *Aythya ferina* (VU) among other waterbirds, alongside a regionally important population of the Great Bustard *Otis tarda* (EN).

The remoteness and low population density in and around Khalkhgol, among the lowest in Dornod means that grassland here have been less intensively grazed than elsewhere in Mongolia. However, grazing pressure is expected to increase over time as local households increase their livestock herds, putting further pressure on the landscape from overgrazing, and increasing the risk of land degradation. The expansion of large scale (wheat) cultivation (affecting several thousand hectares) through large, industrial farms north-east of Tashgain Tavan is another major driver of change, not only by directly driving habitat loss, but also increasing habitat degradation and disturbance, while increasing agro-chemical pollution in the wetlands over time.

Presently, there are limited management and conservation activities in Tashgain Tavan. Through consultation with government stakeholders and site managers, an immediate priority for improving the management of the Tashgain Tavan wetlands is the development of site management and zonation plan, to ensure that the most ecologically sensitive parts of this landscape are well protected and is guided by a strong evidence base for rangeland and wetlands management. This is expected to include increased enforcement on patrols against poaching activities targeted large mammals and birds. Additionally, there is an opportunity to work with the soum government, the Ministries of Environment and Climate Change (MECC) and Food, Agriculture and Light Industries (MOFALI) to strengthen engagement with herding households (estimated at least 200 households) and develop sustainable rangeland and livestock management practices to manage the long-term impacts of grazing on Tashgain Tavan's steppe and wetlands. The increasing popularity of Tashgain Tavan to international (birdwatching) tourists means that there is also scope for the development of local tourism capacity and infrastructure with a focus on specialised wildlife tourism, which over time, can be expected to generate substantial revenue for nature protection activities.

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 consortiumof 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 Yenisey 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 Tashgain Tavan Lakes

Location: The Tashgain Tavan Lakes are a series of small lakes located in the east of the Tamtsag depression, 30 km southwest of Sumber town, in Khalkhgol Soum, in the east of Dornod Aimag.

Area: 53,304 ha

Altitude: 714-823 metres a.s.l.

Geographical coordinates: 47.37ºN, 118.45ºE

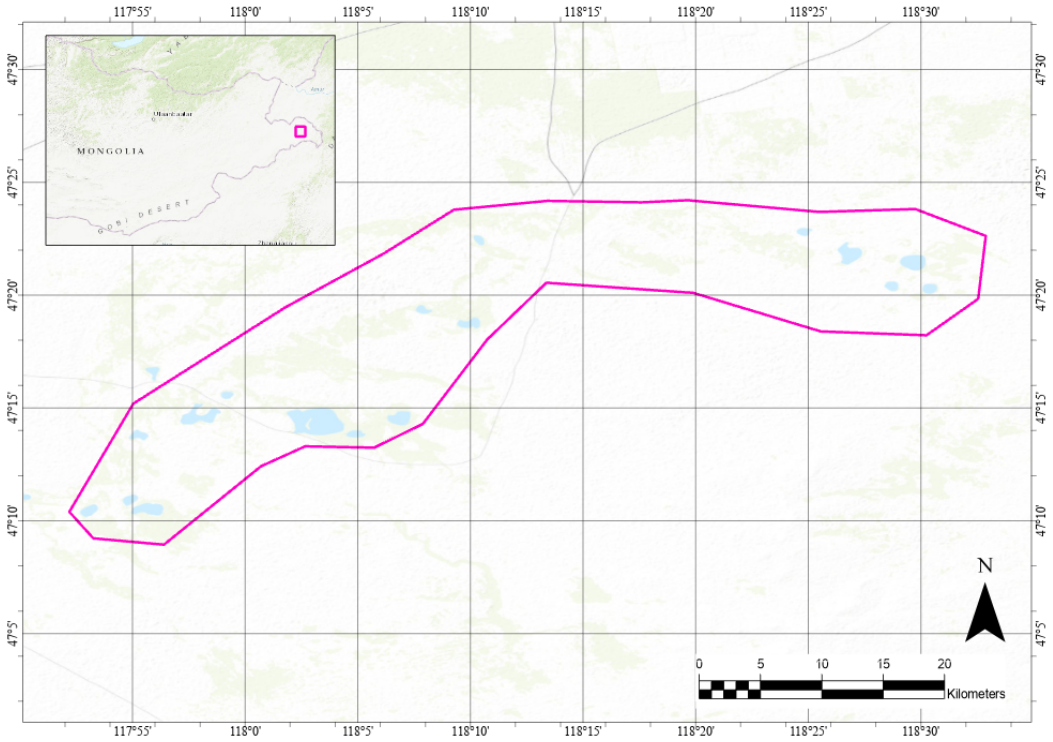

Figure 1. Map of the Tashgain Tavan wetlands, showing its location near to the international border with China (Map: Evelyn Pina Covarrubias)

Description of site: This RFI site comprises several small lakes, including Shuumar, Bayan and Bayanburd lakes, with a total surface area of 53,304 ha located in the western foothills of the Khyangan (Greater Khinggan). Some of the lakes are encircled by *Phragmites* reedbeds and marshland, while others are partially covered by boggy meadows. The lakes are surrounded by steppe dominated by at least three species of feathergrass (*Stipa* spp.) and Sheep's fescue *Festuca ovina*, grasses typical of the Mongolian-Manchurian steppe biome, and there are agricultural fields where large numbers of waterbirds gather during the migration periods. The site is nearly contiguous with the large, Numrug Strictly Protected Area (SPA) located to the east.

Site administration, management and land tenure: The Tashgain Tavan Lakes was designated as an IBA in 2009 and is currently protected as a nature reserve at the provincial level, with jurisdiction under the Khalkhgol (district) government.

Social and economic values: The main land uses at the Tashgain Tavan Lakes are livestock grazing and hay collection, and a small area in the hills in the north of the site is used for agriculture. Steppe fires occur regularly during spring and autumn and, together with livestock grazing, are damaging the reed beds and remaining stands of willows *Salix* sp. The lakes are drying out because of the warming climate, and oil exploration in Tamtsag region is expected to lead to increased motor vehicle traffic, which could cause disturbance at the lakes. Illegal hunting of birds has been reported there. A large area of (relatively flat) grassland (several hundred hectares) north-west of the lakes have been recently cleared for (wheat) agriculture and it is expected that further agricultural expansion is planned here for large-scale farming.

3. Biodiversity value of the Tashgain Tavan Lakes

3.1. Key habitats

This RFI site comprises several small lakes, including Shuumar, Bayan and Bayanburd lakes, with a total surface area of 53,304 ha located in the western foothills of the Khyangan (Greater Khinggan). Some of the lakes are encircled by *Phragmites* reedbeds and marshland, while others are partially covered by boggy meadows. The lakes are surrounded by steppe dominated by at least three species of feathergrass (*Stipa* spp.) and Sheep's fescue *Festuca ovina*, grasses typical of the Mongolian-Manchurian steppe biome, and there are agricultural fields where large numbers of waterbirds gather during the migration periods.

3.2. Importance of Tashgain Tavan Lakes for migratory waterbird species

The Tashgain Tavan Lakes was identified as a candidate RFI site because it has supported internationally important populations of the migratory waterbirds listed (Table 1), defined as those species which have exceeded the 1% population estimates from the Conservation Status Review (CSR1) (Mundkur & Langendoen 2022). The data used to assess these species was compiled from Batbayar & Tseveenmyadag (2009), together with available bird data from the peer-reviewed literature such as Batbayar et al. (2013). A further review and ranking of candidate RFI sites (in order of importance) was conducted by a panel of national and international experts (EAAFP, Wetlands International and BirdLife) and which recommended its inclusion in the RFI portfolio for Mongolia. A series of field surveys conducted by WSCC in spring-summer 2025 discovered internationally significant congregations of waterbirds and further highlighted the importance of the lakes as staging sites for many species (Davaasuren B. et al. in prep.)

Table 1. List of migratory species (based on the EAAFP list of species) with globally significant congregations in Tashgain Tavan wetlands. See also Batbayar & Tseveenmyadag (2009)

Species name	IUCN status	1% threshold
Great Crested Grebe *Podiceps cristatus*	LC	Met
Swan Goose *Anser cygnoid*	EN	Met
Ruddy Shelduck *Tadorna ferruginea*	LC	Met
Common Shelduck *Tadorna tadorna*	LC	Met
Gadwall *Mareca strepera*	LC	Met
Common Pochard *Aythya ferina*	VU	Met
White-naped Crane *Grus vipio*	VU	Met
Demoiselle Crane *Anthropoides virgo*	LC	Met

The Tashgain Tavan Lakes support populations of the globally threatened and near threatened Swan Goose *Anser cygnoid* (EN), Common Pochard *Aythya farina* (VU), Baer's Pochard *A. baeri* (CR), Siberian Crane *Leucogeranus leucogeranus* (CR), White-naped Crane *Grus vipio* (VU), Hooded Crane *G. monacha* (VU), Northern Lapwing *Vanellus vanellus* and Relict Gull *Larus relictus* (VU). Siberian Crane is known to be a regular passage migrant to the site in small numbers.

3.3. Other notable biodiversity

In addition to the waterbirds, the Tashgain Tavan Lakes support populations of the globally threatened Steppe Eagle *Aquila nipalensis* (EN), Great Bustard *Otis tarda* ssp. *dybowskii* (EN) and the near threatened Reed Parrotbill *Paradoxornis heudei* (NT). Adjacent areas of steppe taiga in the foothills of the Khyangan (Greater Khinggan) provides key habitat for populations of large mammals such as Mongolian Wolf *Canis lupus chanco*, Manchurian Moose *Alces alces cameloides*, Manchurian Wapiti *Cervus canadensis xanthopygus*, Siberian Roe Deer *Capreolus pygargus*, and Asian Badger *Meles leucurus*.

4. Ecosystem services

4.1. Ecosystem services provided by Tashgain Tavan Lakes

The Tashgain Tavan Lake landscape encompasses diverse wetland habitats and provides a variety of ecosystem services (Figure 2), including provisioning, regulating, and cultural services that are vital to communities within the site (Table 2). The results from the RFI workshop[1] highlight the top ecosystem services provided by the site, emphasising their essential and non-substitutable nature (Table 2). These provisioning service (fresh water), regulating services (local climate regulation and fire regulation), and cultural services (recreation and ecotourism, and social relations) are considered essential or non-substitutable, benefitting the communities within the site. All services, except recreation and ecotourism, are also benefitting the communities adjacent to the site.

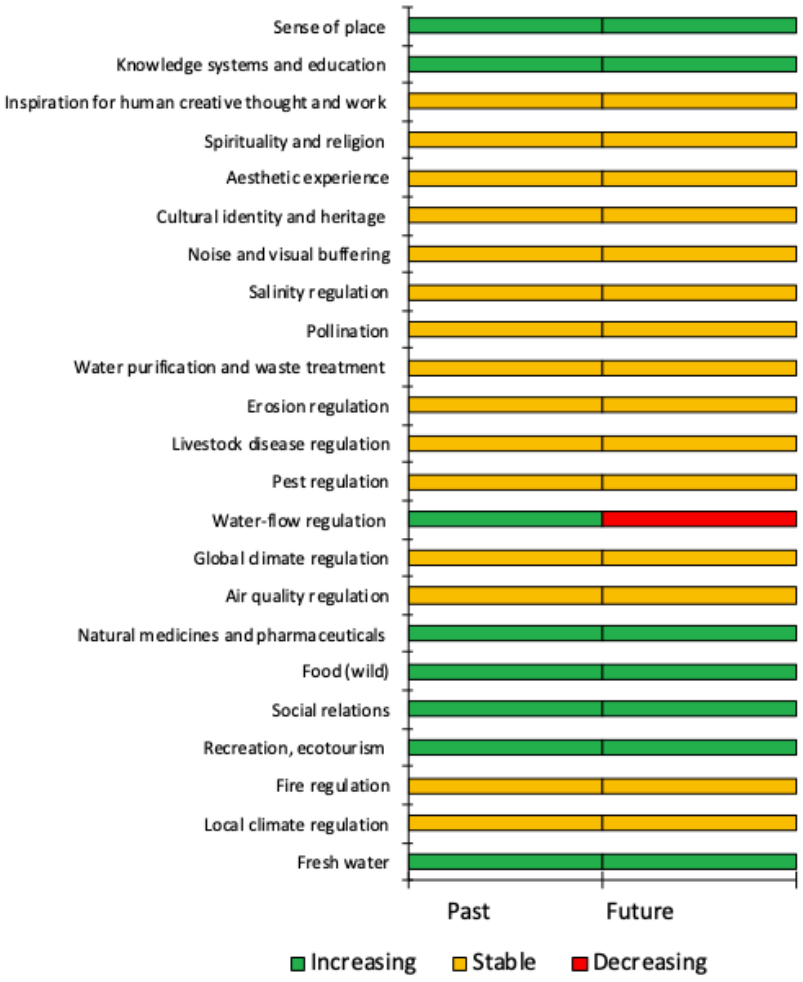

Figure 2. List of ecosystem services provided by Tashgain Tavan Lakes, as identified through stakeholder consultation at the Regional Flyway Initiative workshop.

[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

Table 2. List of top ecosystem services provided by Tashgain Tavan Lakes.

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	Yes	✓	✓		Increase	Increase
Regulating services						
Local climate regulation	Yes	✓	✓		No change	No change
Cultural services						
Fire regulation	Yes	✓	✓		No change	No change
Recreation, ecotourism	Yes	✓			Increase	Increase
Social relations	Yes		✓		Increase	Increase

4.2. Global climate regulating services

Global climate regulating services are not significant at Tashgain Tavan Lake because the landscape lacks peatlands.

4.3. Flood mitigation services

The stakeholders at the RFI workshop[2] did not identify flood mitigating services as important benefits provided by Tashgain Tavan Lake. Therefore, these ecosystem services were not assessed.

[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

5. Drivers of change and their potential impacts on Tashgain Tavan Lakes

5.1. Current drivers of change and their level of impact

Stakeholders at the RFI workshop[3] identified 17 drivers of change impacting the Tashgain Tavan lakes, and their corresponding levels of impact on the site (Table 3). High-impact drivers include droughts and drought-like conditions, which is in turn linked to fires; livestock farming and grazing is also a major driver of change, and its impact has increased over time with the volume of livestock kept by herders living around the lake systems. Annual and perennial non-timber crop production is expected to alter land use and is already led to large scale land use change in the landscape around Tashgain Tavan.

Medium-impact drivers consist of air-borne pollutants, which affect the ecosystem's health, and collecting terrestrial plants, which can disturb native vegetation. Additional medium-impact factors include dams within or upstream of the wetland, which alter the hydrological regime, as well as droughts, excess ponding of water, and fire suppression activities. Garbage and solid waste, housing and settlement developments, hunting terrestrial animals, invasive plant species, livestock farming, and loss of cultural links contribute to moderate habitat and cultural value degradation. The loss of hydrological connectivity, keystone species, and deterioration of cultural wetland values further moderately impact the site's integrity. Recreational activities, research, temperature extremes, utility lines, water extraction, and wood pulp production also add to the medium-level impacts on the wetland.

Table 3. Drivers of change and their potential impact on the integrity of Tashgain Tavan Lakes based on consultations with stakeholders.

Driver of change	Impact
Drought conditions	High
Droughts	
Fire and fire suppression	
Livestock farming and grazing	
Annual and perennial non-timber crop production	Medium
Collecting terrestrial plants or plant products (non-timber)	
Desertification	
Habitat shifting and alteration	
Hunting, killing and collecting of terrestrial animals	
Roads and railroads	
Storm and flooding	
Temperature extremes	
Agricultural and forestry effluents	Low
Erosion and siltation/deposition	
Garbage and solid waste	
Pathogens	
Recreational activities and tourism	

[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

5.2. Potential alternative state of Tashgain Tavan Lakes under current drivers of change

Stakeholders at the RFI workshop[4] defined the most plausible future alternative state (to 2035), and how this will translate to a net change in the cover of different types of wetland habitat types within this site (current habitat cover vs future alternative cover; Figure 3). The alternative state of the site assumes there will be no changes in the current drivers of change impacting the site, and the current management regime.

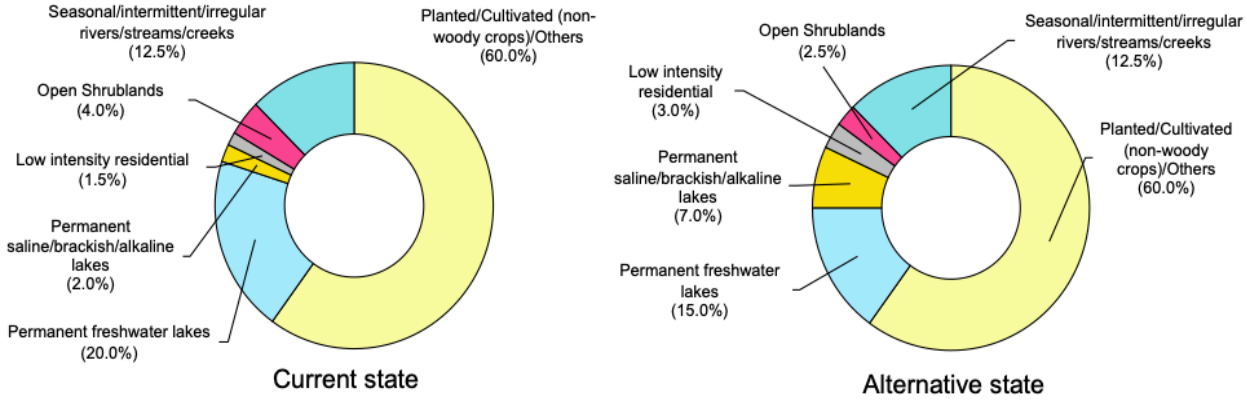

Figure 3. The proportional change in the extent of different habitat types between the current and alternative states of Tashgain Tavan Lakes.

5.3. Expected changes in the ecosystem services of Tashgain Tavan Lakes

Stakeholders at the RFI workshop[5] assessed future trends in the ecosystem services provided by Tashgain Tavan Lake. 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 2 and Table 2 shows that the provisioning of fresh water and the cultural services – ecotourism/recreation and social relations – have increased in the past and are expected to continue increasing in the future, while the regulating services – fire regulation and local climate regulation – have remained unchanged in the past and are expected to remain stable in the future.

[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. Capacity gaps and needs for the management of Tashgain Tavan Lakes

Five stakeholder groups were identified as important to the management of Tashgain Tavan Lakes. Current capacities in site management, policymaking, law enforcement, and project coordination. Opportunities for capacity development include ecological education, herding practices, project management and financing, and human resources.

Table 4. Stakeholder capacity needs in the Tashgain Tavan lakes landscape

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 in TTL	Herding; managing grazing livestock (negative)	Sustainable herding practices based on best practices (in livestock husbandry)	Medium	Ecological education and training	Training workshops on sustainable grazing and animal husbandry practices Workshops and programmes on biodiversity-friendly agricultural practices.
(Wheat) farmers and agricultural companies	Crop farming – clearance of grassland (negative)	Implementing management	Medium	Herding practices in proportion to the pastureland load capacity Ecological education and awareness and better organization structure promotion and training	
Government organizations (central govt)	Policymaking and implementation (positive)	Ensure that policies are not detrimental to biodiversity; safeguards in place	Medium	Training in project management/ financing and budgets	Training programmes and workshops.
Soum government	Law enforcement and	Enforcing laws and improving site management	Medium	Strengthen human resources and capacity	

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)
	coordination (positive)				
Conservation organizations	Coordination of international programs and projects (positive)	Raise awareness and profile of the site	Medium	Strengthen human resources and capacity	Training programmes to strengthen coordination and organizational structure

7. Opportunities for RFI interventions

7.1. Recommended Interventions

The steppes and wetlands of the Tashgain Tavan lakes landscape are increasingly recognised as among the most important staging and stopover sites for migratory waterbirds in eastern Mongolia. Whilst its remoteness and low population density means that the grasslands here have been less intensively grazed than elsewhere in Dornod, grazing pressure is expected to increase over time as local households increase their livestock herds, putting further pressure on the landscape, and increasing the risk of land degradation. The expansion of large scale (wheat) cultivation (affecting several thousand hectares) and will likely increase the degree of agro-chemical pollution in wetlands while driving habitat degradation. An immediate priority for improved management of the Tashgain Tavan is the development of an evidence-based site management and zonation plan, to ensure that the ecologically most sensitive parts of this landscape, especially the steppe landscape immediately surrounding the several lake systems remain sustainable managed for grazing activities, which over time will reduce the risk of land degradation and pollution of water resources.

Table 5. List of proposed interventions for Tashgain Tavan wetlands and possible project indicators.

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Component 1. Strengthening site management and protection of the Tashgai Tavan lake systems and grassland landscape					
Undertake scoping study of existing interventions and threats at Tashgai wetlands and surrounding grasslands landscapes, including targeted assessment on long-term threats (from climate change, steppe fires, overgrazing).	Assessment and scoping guidance to provide basis for proposed RFI interventions. Threats faced by the lake ecosystem better understood, and potential interventions identified.	Assessment report with key threats identified and recommendations for improved management 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 assessment of existing interventions and threats.	100,000	1 year	Khalkgol soum and Tashgai bag government Dornod aimag government MECC Protected area management board Conservation organizations (WSCC) Agricultural companies ADB
Strengthen and expand site management of Tashgai Tavan including the development of a comprehensive management plan and zoning plan	TTL is better managed through the development of the site management plan, installation of boundary markers for the protected area, and implementation	Site management plan over short to medium-term for TTL with measures to mitigate fire risk during the dry season developed, in consultation with key stakeholders,	200,000	3 years	Khalkgol soum and Tashgai bag government Dornod aimag government MECC

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
	of measures to address and mitigate fire risk during the dry season. TTL designated as a Ramsar site.	including communities inside the TTL through participatory mapping. Number of stakeholder consultation meetings organised with local government and herding communities to strengthen engagement local stakeholders for participatory mapping for zonation, understand local livelihood needs, and engage national stakeholders. Management plan for TTL developed through participatory processes involving all herding families within site. Establishment and installation of boundary markers of protected area.			TTL and NSPA Protected area management board Conservation organizations

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Component 2. Wildlife protection and monitoring, with a focus on White-naped Crane, Swan Goose and other waterbirds					
Strengthen the legal protection and enforcement in the Tashgain Tavan Lakes Nature Reserve	Improved wetland protection and enforcement in the TTL Nature Reserve 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 patrolling and enforcement.	200,000	3 years	Khalkgol soum and Tashgai bag government TTL and NSPA Protected area management board Conservation organizations NEASPEC's programme for White-naped Crane
Strengthen biodiversity and wetland monitoring, with a focus on waterbird species, focal species such as White-naped Crane and Swan Goose	Better monitoring of biodiversity and wetland ecosystems in the landscape through a locally engaged biodiversity monitoring program and increased awareness of	Monitoring mechanism for the site established Number of monitoring activities conducted using the established biodiversity and wetland	100,000	5 years	

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
	White-naped Crane, and migratory waterbird conservation amongst households	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. Number of stakeholder groups engaged in the awareness-raising activities.			
Scale-up research activities on wildlife and grassland ecology; data collection and monitoring of wetland ecosystems to guide management plan development (see component 1)	TTL is better managed through improved understanding of migratory species movements (and movement ecology), strengthened knowledge base on land use change, steppe and lotic wetland ecology (of Tashgai lakes), and improved knowledge of landscape and regional	Number of training programmes (including workshops) on wildlife and grassland ecology, with a focus on charismatic bird and wildlife species. Number of training activities implemented Number of local researchers and	250,000	5 years	MECC Khalkgol soum and Tashgai bag government TTL and NSPA Protected area management board Research institutions (incl. academy of sciences) Conservation organizations (including WSCC)

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
	connectivity of migratory bird populations. Long-term data on changes in landscape and wetland quality to guide site management cycle.	stakeholder groups trained Number of published research reflecting improved knowledge of landscape and regional connectivity of migratory bird populations. Number of research infrastructure maintained, including construction of specialized research facilities (e.g. ringing station)			
Component 3. Upscaling tourism infrastructure and local capacity to strengthen nature-based tourism in Tashgai Tavan wetlands and steppe landscape					
Establish basic tourism infrastructure at Tashgain Tavan lakes, including shelters and observation tower.	Impact of habitat degradation caused by tourism activities in the landscape reduced through specialized and planned nature-based tourism.	Provincial-level tourism plans and strategies updated for Dornod, in coordination with MCST, MECC and relevant tourism stakeholders. Number of training activities to strengthen local capacity for sustainable	500,000	2 years	MCST MECC Khalkgol soum and Tashgai bag government TTL Protected area management board

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		specialized tourism Number of stakeholders engaged in tourism-related activities Number of infrastructures established and maintained Number of stakeholder groups engaged in the upgrading of tourism infrastructure and local planning Number of people benefiting from the upgraded tourism infrastructure (at least XX households in TTL and in Sumber town).			Conservation organizations Tourism operators in Ulaanbaatar and Choibalsan International development agencies
Strengthen the capacity of local communities and businesses for nature-based tourism	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.	Nature-based tourism strategy and business plans and packages on specialized wildlife/nature tourism developed. Number of piloted business plans with tourism operators	200,000	3 years	

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		(including international bird and wildlife tour companies) Development plan for nature-based tourism in TTL and the south-east Dornod Aimag region created. Framework for benefits-sharing from nature-based tourism enhanced for households in TTL. Training program on nature-based tourism developed Number of stakeholders trained on tourist management Number of people benefiting from the upgraded tourism infrastructure Microfinance schemes to provide loans to small tourism businesses to improve sustainability and			

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		reduce impact created. Number of small tourism businesses benefiting from the established microfinancing scheme.			
Component 4. Strengthening sustainable, community-based rangeland management in Tashgain Tavan lakes to address over-grazing and land degradation					
Strengthen the local capacity in sustainable rangeland management, and management of livestock	Improved condition of wetlands and lakes in TTL against baselines. Improved condition of grassland in TTL (in zoned areas) and adjacent landscapes against baselines. Lower risk and incidences of steppe fires	Number of stakeholder consultation meetings organised, targeting XX households to engage local people for participatory (rangeland management) processes (and use of veterinary drugs that can be harmful to wildlife, e.g. birds-of-prey such as vultures and Steppe Eagle *A. nipalensis*) Training programmes focusing on community-based rangeland management, including livestock	250,000	5 years	MOFALI Khalkgol soum and Tashgai bag government TTL Protected area management board Conservation organizations International development agencies IUCN Agricultural banks

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		management and water management established with local governments and MOFALI. At least XX households in TTL and surrounding landscapes trained with sustainable rangeland management and herding practices. Number of trained stakeholders adopting sustainable rangeland management and herding practices			
Scale up the sustainable rangeland use/grazing activities Strengthen the resilience of herding households.	Improved condition of grassland in TTL (in zoned areas) and adjacent landscapes against baselines through financing mechanism (for local loans and grants), incentives (and compliance mechanisms) for best practices in grazing and	Number of stakeholder consultation meetings organised, targeting XX households. Number of exchange visits organized for herding households to other landscapes with good grazing and livestock management in	250,000	5 years	MOFALI Dornod aimag government Khalkgol soum and Tashgai bag government TTL Protected area management board Conservation organizations

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
	rangeland management, and benchmarking visits.	place (e.g. Hustain NP). Microfinance mechanism (for local loans and grants) created for local households and supported by lending institutions. Number of households benefiting from small grants and microloans on animal husbandry and livestock management practices. 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			International development agencies IUCN

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
Component 5. Improving waste disposal and management for local communities					
Improved disposal and management of solid waste for local households. Improved disposal and management of agro-chemical waste for adjacent farms to TTL	Impact of habitat degradation decreased through the reduced inflow of solid waste and other non-biodegradable into the wetlands from management facilities, baselining, national waste management strategy, and strengthened local capacity on waste and agro-chemical waste management. Solid and agro-chemical waste pollution reduced against baselines.	Baselines of agro-chemical pollution from wetlands established. National waste management strategy improved and implemented with local stakeholders. Solid waste management and disposal protocols established and strengthened for XX households. Number of stakeholder consultation meetings organised, targeting XX households to engage local households and farms. Training programme(s) on waste management and disposal of animal husbandry and agro-chemical waste.	500,000	3 years	MECC Dornod aimag government Khalkgol soum and Tashgai bag government TTL and NSPA Protected area management board Conservation organizations Agricultural companies (and landowners)

Intervention	Outcome	Indicators	Cost (USD)	Timeframe	Potential Stakeholders
		Number of waste management training workshop conducted, in line with the drafted training programmes. Number of local stakeholders trained on waste management. Number of waste management storage and disposal facilities constructed Khalkgol town center and other identified localities. Number of local stakeholders participating in proper waste management mechanisms. Volume of waste properly managed			
Total investment for five years			8,650,000		

7.2. Potential Financing

The estimated project cost is USD 8,650,000 over a 5-year period. This project supports the development of plans for site management, nature-based strategy, and creation of a co-management framework, training programs on patrol and enforcement, biodiversity monitoring, nature-based tourism, community-based rangeland management, grazing and livestock 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 up to five (5) years, with the main project components focusing on improved site management of the Tashgain Tavan Nature Reserve, biodiversity monitoring, improving rangeland management and waste disposal practices (led by MECC and local governments). Conservation organizations such as the Wildlife Science and Conservation Center, which is active in Khalkhgol, and international development agencies can be expected to play a major supporting and technical role in the project through conservation science, biodiversity monitoring, and driving local community engagement.

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. There are no indigenous communities in the project landscape but there is a substantial Buryat ethnic minority

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 Tashgain Tavan Lake. Building these infrastructures, however, would generate noise that may disturb wildlife. 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.

References

Batbayar, N., Takekawa, J. Y., Newman, S. H., Prosser, D. J., Natsagdorj, T., & Xiao, X. (2013). Migration strategies of Swan Geese *Anser cygnoides* from northeast Mongolia. *Wildfowl*, 61(61), 90-109.

BirdLife International Asia. (2009). *Safeguarding Important Areas of Natural Habitat alongside Economic Development*. Mongolia Discussion Papers. East Asia and Pacific Region Sustainable Development Department, World Bank, Washington, DC.

BirdLife International Important Bird Area factsheet: Tashgain Tavan Lakes (Mongolia). Available at: https://datazone.birdlife.org/site/factsheet/tashgain-tavan-lakes-iba-mongolia

Cloudbirders: Mongolia 19.05 – 02.06.2023 - Eastern Mongolia with Miksture. Available at: https://www.cloudbirders.com/be4/download?filename=MIKSTURE_Mongolia_0506_2023.pdf

Damba, I., Zhang, J., Yi, K., Dou, H., Batbayar, N., Natsagdorj, T., ... & Fox, A. D. (2021). Seasonal and regional differences in migration patterns and conservation status of Swan Geese (*Anser cygnoides*) in the East Asian Flyway. *Avian Research*, 12(1), 73.

IUCN Red List of Threatened Species. Available at: www.iucnredlist.org

Mundkur, T., & Langendoen, T. (2022). *Report on the Conservation Status of Migratory Waterbirds of the East Asian – Australasian Flyway Partnership.* First Edition. Draft Report to the East Asian – Australasian Flyway Partnership. Wetlands International, Ede, The Netherlands. Available at: https://www.wetlands.org/publication/eaaf-conservation-status-review1/

Nyambayar, B., & Tseveenmyadag, N. (eds) (2009). *Directory of Important Bird Areas in Mongolia: key sites for conservation.* Ulaanbaatar, Mongolia: Wildlife Science and Conservation Center, Institure of Biology and BirdLife International. Available at: https://www.researchgate.net/publication/270217665_Directory_of_Important_Bird_Areas_in_Mongolia_Key_Sites_for_Conservation

The Nature Conservancy (2011). *Identifying conservation priorities in the face of future development: applying development by design in the grasslands of Mongolia.* Available at: https://www.tncmongolia.org/content/dam/tnc/nature/en/documents/mongolia/Grassland-ERA-report-eng.pdf

UNEP-WCMC. Protected Area Profile from the World Database on Protected Areas. Available at: https://www.protectedplanet.net/902508

Annex 1. Supplementary information on flood mitigation services

Table A5. Key habitat types in Tashgain Tavan Lakes 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 (%)
Planted/Cultivated (non-woody crops)/Others	31239.0	60.0	31239.0	60.0
Permanent freshwater lakes	10413.0	20.0	7809.8	15.0
Permanent saline/brackish/alkaline lakes	1041.3	2.0	3644.6	7.0
Low intensity residential	781.0	1.5	1562.0	3.0
Open Shrublands	2082.6	4.0	1301.6	2.5
Seasonal/intermittent/irregular rivers/streams/creeks	6508.1	12.5	6508.1	12.5
Total	52065.0	100.0	52065.0	100.00