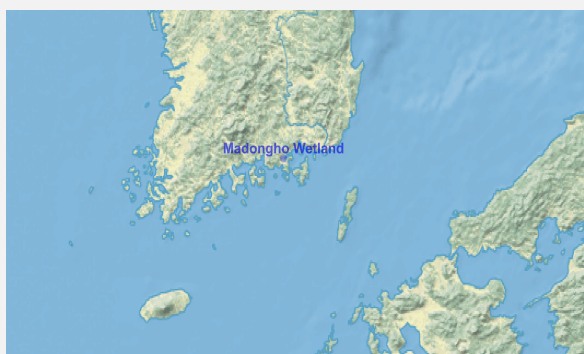




Ramsar Information Sheet

Published on 10 August 2026

Republic of Korea Madongho Wetland



Designation date	10 August 2026
Site number	2599
Coordinates	35°00'44"N 128°21'15"E
Area	105,90 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

Madongho Wetland, located in the estuarine brackish zone of Goseong Stream in Gyeongsangnam-do, Republic of Korea, is an estuarine-coastal complex where freshwater and seawater interact, creating dynamic salinity gradients, tidal influences, and seasonal hydrological variation. The site includes sandbars, backwater zones, reedbeds, submerged macrophyte areas, mudflats, vegetated embankments, and adjacent agricultural land, forming diverse and interconnected habitats.

These environmental conditions support critical ecological functions, including spawning and nursery grounds for fish and benthic macroinvertebrates, as well as feeding and resting habitats for migratory waterbirds. A total of 1,059 species have been recorded, including 483 plants, 122 birds, 277 insects, 127 benthic macroinvertebrates, 29 fish, 7 amphibians, 5 reptiles, and 13 mammals. The site supports 23 nationally endangered species (6 Class I, 17 Class II), 16 Natural Monuments, and 3 rare plant species. Globally, it provides habitat for species listed as 2 Critically Endangered, 1 Endangered, and 9 Vulnerable on the IUCN Red List, along with 9 CITES Appendix I and 11 CMS Appendix I species, demonstrating its international importance under Ramsar Criteria 2, 3, and 4.

The wetland is an important stopover and wintering site along the East Asian–Australasian Flyway (EAAF), serving as a refuge for migratory birds, including globally threatened species such as the White-tailed Eagle (*Haliaeetus albicilla*) and White-naped Crane (*Grus vipio*), both listed under CITES Appendix I and CMS Appendix I, and designated as nationally protected species and Natural Monuments.

Madongho Wetland sustains a highly productive food web supported by brackish-water ecological processes and provides key ecosystem services, including flood regulation, drought mitigation, nutrient cycling, water purification, sediment retention, and shoreline stabilization. The close spatial arrangement of freshwater to saline habitats, together with vertical ecological gradients from open water to terrestrial zones, enhances ecological resilience to climate variability.

The wetland is closely linked with local communities through agriculture, fisheries, ecological education, birdwatching, and citizen science initiatives. Community-based monitoring and awareness programs contribute to conservation and align with regional management strategies.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Goseong-gun
Postal address	Postal/zip code: 52943, 130, Seongnae-ro, Goseong-eup, Goseong-gun, Gyeongsangnam-do, Republic of Korea

National Ramsar Administrative Authority

Institution/agency	Ministry of Climate, Energy and Environment
Postal address	Postal/zip code: 30103, 11, Doum 6-ro, Sejong, Republic of Korea

2.1.2 - Period of collection of data and information used to compile the RIS

From year	2010
To year	2024

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Madongho Wetland
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2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps	0
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Boundaries description

Madongho Wetland is a wetland located in the brackish waters of the mouth of Goseongcheon Stream flowing into the southern coast of Goseong-gun, Gyeongsangnam-do, spanning Samnang-ri, Duho-ri (Maam-myeon) and Geosan-ri (Georyu-myeon), with a total area of 105.9ha, designated as a national wetland protection area by the Ministry of Environment on February 3, 2022. The reason why the southern and western borders are complicated is that artificial infrastructure such as roads, facilities, and agricultural land is excluded from the protected area, and in particular, the agricultural land of local residents who did not agree to the designation of Ramsar wetlands was excluded, while the South was excluded from the border considering the distribution of repair facilities, progress of construction, and the possibility of artificial disturbance in the future. On the other hand, the northern boundary was established based on the official boundary and road of the existing wetland protection area, because it is an ecological and hydrological boundary that separates the brackish waters of the Madongho Wetland from the sea area of Danghangpo, and an administratively reasonable limit line. Madong Lake is an agricultural freshwater lake located within a double seawall, and a key wetland area is formed around the water body and the waterfront between the downstream of Goseongcheon and the Geosan Embankment.

2.2.2 - General location

a) In which large administrative region does the site lie?	Goseong-gun, Gyeongsangnam-do
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b) What is the nearest town or population centre?	Goseong-eup, Goseong-gun, Gyeongsangnam-do
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2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes ☐ No ☒

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes ☐ No ☒

2.2.4 - Area of the Site

Official area, in hectares (ha):	105.9
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Area, in hectares (ha) as calculated from GIS boundaries	105.902
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2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Palearctic

Other biogeographic regionalisation scheme

Madongho Wetland belongs to the Southeastern Korean Peninsula in the FEOW (Freshwater Ecoregions of the World) system. This region includes rivers and estuaries flowing northward to the sea, with well-developed brackish zones where freshwater and seawater mix. These areas provide distinct functions such as spawning and nursery grounds for fish, habitats for benthic organisms, and resting and feeding areas for migratory birds. Madongho is a representative estuarine wetland that exemplifies these regional characteristics.

Madongho Wetland is situated in the Palearctic biogeographic realm and is adjacent to the temperate mixed forest zone (deciduous and evergreen trees) of southern Korean Peninsula. In other words, forests, farmland, and estuarine wetlands are connected over short distances, forming a mosaic of diverse habitats. This connectivity contributes to high species diversity and facilitates seasonal movement of organisms.

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

<no data available>

☒ Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information

Madongho Wetland is located within the East Asian-Australasian Flyway (EAAF) and serves as an important habitat for various endangered migratory birds, mammals, and mollusks. This wetland supports the following internationally threatened species (based on IUCN criteria):
Eurasian Otter (*Lutra lutra*): CITES Appendix I / National Red List VU
Leopard Cat (*Prionailurus bengalensis*): National Red List VU
Chinese Water Deer (*Hydropotes inermis*): IUCN Red List VU
Common Pochard (*Aythya ferina*): IUCN Red List VU
Baer's Pochard (*Aythya baeri*): IUCN Red List CR
Oriental Stork (*Ciconia boyciana*): CITES Appendix I / IUCN Red List EN
Black-faced Spoonbill (*Platalea minor*): IUCN Red List VU
Peregrine Falcon (*Falco peregrinus*): CITES Appendix I
White-tailed Eagle (*Haliaeetus albicilla*): CITES Appendix I / CMS Appendix I
Eastern Imperial Eagle (*Aquila heliaca*): CITES Appendix I / IUCN Red List VU
White-naped Crane (*Grus vipio*): CITES Appendix I / IUCN Red List VU
Hooded Crane (*Grus monacha*): CITES Appendix I / IUCN Red List VU
Red-crowned Crane (*Grus japonensis*): CITES Appendix I / IUCN Red List VU
Saunders's Gull (*Chroicocephalus saundersi*): IUCN Red List VU
Relict Gull (*Ichthyaeetus relictus*): CITES Appendix I / IUCN Red List VU
Angelina Dragonfly (*Libellula angelina*): IUCN Red List CR / National Red List VU
Nerite Snail (*Clithon retropictum*): National Red List VU

☒ Criterion 3 : Biological diversity

Justification

Madongho Wetland, as an estuarine brackish zone, possesses rich biodiversity and provides important habitat within the East Asian-Australasian Flyway (EAAF). In addition to internationally threatened species and 23 nationally endangered wildlife species, the wetland supports 16 Natural Monument species and other nationally protected species, including 483 plant species, 112 bird species, 277 insect species, 127 benthic macroinvertebrates (4 species overlap with insects), 29 fish species, 7 amphibian species, 5 reptile species, and 13 mammal species, demonstrating high biodiversity. The Site also supports 5 Korean endemic species, further highlighting its conservation significance. These diverse organisms are crucial for maintaining wetland functions and health, including material cycling and energy flow in the Madongho Wetland ecosystem. Therefore, to protect these values, the Republic of Korea has designated Madongho Wetland as a Wetland Protected Area.

Eurasian Otter (*Lutra lutra*): Class I Endangered Wildlife / Natural Monument

Leopard Cat (*Prionailurus bengalensis*): Class II Endangered Wildlife

Tundra Bean Goose (*Anser fabalis*): Class II Endangered Wildlife

Whooper Swan (*Cygnus cygnus*): Class II Endangered Wildlife / Natural Monument

Mandarin Duck (*Aix galericulata*): Natural Monument

Baer's Pochard (*Aythya baeri*): Natural Monument

Oriental Stork (*Ciconia boyciana*): Class I Endangered Wildlife

Eurasian Spoonbill (*Platalea leucorodia*): Class II Endangered Wildlife / Natural Monument

Black-faced Spoonbill (*Platalea minor*): Class I Endangered Wildlife / Natural Monument

Common Kestrel (*Falco tinnunculus*): Natural Monument

Peregrine Falcon (*Falco peregrinus*): Class I Endangered Wildlife / Natural Monument

Osprey (*Pandion haliaetus*): Class II Endangered Wildlife

White-tailed Eagle (*Haliaeetus albicilla*): Class I Endangered Wildlife / Natural Monument

Cinereous Vulture (*Aegypius monachus*): Class II Endangered Wildlife / Natural Monument

Hen Harrier (*Circus cyaneus*): Class II Endangered Wildlife / Natural Monument

Pied Harrier (*Circus melanoleucos*): Class II Endangered Wildlife / Natural Monument

Chinese Sparrowhawk (*Accipiter soloensis*): Class II Endangered Wildlife / Natural Monument

Eastern Imperial Eagle (*Aquila heliaca*): Class II Endangered Wildlife

White-naped Crane (*Grus vipio*): Class II Endangered Wildlife / Natural Monument

Hooded Crane (*Grus monacha*): Class II Endangered Wildlife / Natural Monument

Red-crowned Crane (*Grus japonensis*): Class I Endangered Wildlife / Natural Monument

Saunders's Gull (*Chroicocephalus saundersi*): Class II Endangered Wildlife

Relict Gull (*Ichthyaeetus relictus*): Class II Endangered Wildlife

Eurasian Eagle-Owl (*Bubo bubo*): Class II Endangered Wildlife / Natural Monument

Angelina Dragonfly (*Libellula angelina*): Class II Endangered Wildlife

Nerite Snail (*Clithon retropictum*): Class II Endangered Wildlife / Protected Marine Species

Chinese Peony (*Paeonia lactiflora*): National Red List EN

☒ Criterion 4 : Support during critical life cycle stage or in adverse conditions

Optional text box to provide further information

Madongho Wetland serves as a refuge for birds as a wintering site along the East Asian-Australasian Flyway (EAAF), with key globally threatened wintering species including:

White-tailed Eagle (*Haliaeetus albicilla*): CITES Appendix I / CMS Appendix I / Class I Endangered Wildlife / Natural Monument

White-naped Crane (*Grus vipio*): IUCN Redlist VU / CITES Appendix I / CMS Appendix I / Class II Endangered Wildlife / Natural Monument

3.2 - Plant species whose presence relates to the international importance of the site

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Paeonia obovata</i>	☒	☒	☐		☐	National Red List EN	

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
Others																	
CHORDATA / MAMMALIA	<i>Hydropotes inermis</i>	☒	☐	☐	☐	☐	☐	☐	☐				VU	☐	☐		
CHORDATA / MAMMALIA	<i>Lepus coreanus</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐		Korean Endemic Species
ARTHROPODA / INSECTA	<i>Libellula angelina</i>	☒	☐	☐	☐	☒	☐	☐	☐				CR	☐	☐	National List of Endangered Species II / National Red List (VU)	
CHORDATA / MAMMALIA	<i>Lutra lutra</i>	☒	☐	☐	☐	☒	☐	☐	☐				NT	☒	☐	National List of Endangered Species I, Nature Monument, and National Red List (VU)	
CHORDATA / MAMMALIA	<i>Prionailurus bengalensis</i>	☒	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II / National Red List (VU)	
CHORDATA / AMPHIBIA	<i>Rana coreana</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐		Korean Endemic Species
Fish, Mollusc and Crustacea																	
MOLLUSCA / GASTROPODA	<i>Clithon retropictum</i>	☒	☐	☐	☐	☒	☐	☐	☐					☐	☐	National List of Endangered Species II / Protected Marine Species / National Red List (VU)	
CHORDATA / TELEOSTEI	<i>Cobitis tetralineata</i>	☐	☐	☐	☐	☒	☐	☐	☐					☐	☐		Korean Endemic Species
CHORDATA / ACTINOPTERYGII	<i>Odontobutis platycephala</i>	☐	☐	☐	☐	☒	☐	☐	☐					☐	☐		Korean Endemic Species
CHORDATA / ACTINOPTERYGII	<i>Squalidus gracilis</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐		Korean Endemic Species
Birds																	
CHORDATA / AVES	<i>Accipiter soloensis</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II / Natural Monument	
CHORDATA / AVES	<i>Aegypius monachus</i>	☒	☐	☐	☐	☒	☐	☐	☐				NT	☐	☐	National List of Endangered Species II / Natural Monument	
CHORDATA / AVES	<i>Aix galericulata</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	Natural Monument	
CHORDATA / AVES	<i>Anser fabalis</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II	
CHORDATA / AVES	<i>Aquila heliaca</i>	☒	☐	☐	☐	☒	☐	☐	☐				VU	☒	☒	National List of Endangered Species II	
CHORDATA / AVES	<i>Aythya baeri</i>	☒	☐	☐	☐	☒	☐	☐	☐				CR	☐	☒	Natural Monument	
CHORDATA / AVES	<i>Aythya ferina</i>	☒	☐	☐	☐	☐	☐	☐	☐				VU	☐	☒		
CHORDATA / AVES	<i>Bubo bubo</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II / Natural Monument	
CHORDATA / AVES	<i>Chroicocephalus saundersi</i>	☒	☐	☐	☐	☒	☐	☐	☐				VU	☐	☒	National List of Endangered Species II	

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Ciconia boyciana</i>	☒	☐	☐	☐	☒	☐	☐	☐				EN	☒	☒	National List of Endangered Species I	
CHORDATA/AVES	<i>Circus cyaneus</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II /Natural Monument	
CHORDATA/AVES	<i>Circus melanoleucos</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II /Natural Monument	
CHORDATA/AVES	<i>Cygnus cygnus</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II /Natural Monument	
CHORDATA/AVES	<i>Falco peregrinus</i>	☒	☐	☐	☐	☒	☐	☐	☐				LC	☒	☐	National List of Endangered Species I /Natural Monument	
CHORDATA/AVES	<i>Falco tinnunculus</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	Natural Monument	
CHORDATA/AVES	<i>Grus japonensis</i>	☒	☐	☐	☐	☒	☐	☐	☐				VU	☒	☒	National List of Endangered Species I /Natural Monument	
CHORDATA/AVES	<i>Grus monacha</i>	☒	☐	☐	☐	☒	☐	☐	☐				VU	☒	☒	National List of Endangered Species II /Natural Monument	
CHORDATA/AVES	<i>Grus vipio</i>	☒	☒	☐	☐	☒	☐	☐	☐				VU	☒	☒	National List of Endangered Species II /Natural Monument	The wetland provides shelter and feeding grounds
CHORDATA/AVES	<i>Haliaeetus albicilla</i>	☒	☒	☐	☐	☒	☐	☐	☐				LC	☒	☒	National List of Endangered Species I /Natural Monument	The wetland provides shelter and feeding grounds
CHORDATA/AVES	<i>Ichthyophaga relictus</i>	☒	☐	☐	☐	☒	☐	☐	☐				VU	☒	☒	National List of Endangered Species II	
CHORDATA/AVES	<i>Pandion haliaetus</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II	
CHORDATA/AVES	<i>Platalea leucorodia</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐	National List of Endangered Species II /Natural Monument	
CHORDATA/AVES	<i>Platalea minor</i>	☒	☐	☐	☐	☒	☐	☐	☐				VU	☐	☒	National List of Endangered Species I /Natural Monument	

1) Percentage of the total biogeographic population at the site

Among the species inhabiting Madong-ho Wetland, 13 are listed on the IUCN Red List, 8 are included in CITES Appendix I, and 11 are recorded in CMS Appendix I.

3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

Madongho Wetland is a brackish estuary where the Goseong Stream meets Danghang Bay. It hosts a rare 34-hectare reedbed on Korea's southern coast, forming a habitat mosaic of open water, riparian zones, embankments, and agricultural hinterland that supports high biodiversity. Along the western and northern margins, wave-cut cliffs expose stratified sandstone and shale from the Cretaceous period, complemented by nearby dinosaur footprint fossils, tightly linking geological heritage with wetland ecology. Salinity gradients and water-level fluctuations created by tides and stream flow arrange freshwater–brackish–marine transition zones over short distances, which serve as spawning and nursery grounds for fish, breeding habitats for benthic macroinvertebrates, and critical resting and feeding areas for migratory birds along the East Asian–Australasian Flyway.

The reedbeds drive high primary productivity and, through seasonal dieback, supply organic detritus to the food web. Micro-oxidation–reduction conditions around reed rhizomes, together with microbial activity, promote nitrification–denitrification and phosphorus adsorption–precipitation, thus removing and transforming nutrients. Reed stems and leaves slow water velocity, trap suspended matter and fine sediments, and buffer wave and current energy, enhancing shoreline and embankment stability. These processes deliver regulating services such as flood storage, drought buffering, water purification, and carbon sequestration. They also indirectly support local fisheries by maintaining fish spawning and nursery grounds, while creating cultural and educational values through birdwatching, environmental education, citizen science, and integration with geological–paleontological resources.

Natural variability is defined by seasonal rainfall and tidal cycles that generate rhythms of water level and salinity. During floods, freshwater influence lowers salinity and reedbeds expand; in dry seasons, salinity increases and brackish species dominate, causing reversible shifts in vegetation and benthic communities. Seasonal changes in waves and wind direction also alter the extent and morphology of sandbars and micro-mudflats.

Past and present pressures include tidal attenuation and altered water residence time caused by embankment operations, which may shift salinity, flow, and sediment conditions, influencing reed distribution and benthic community composition. Runoff pulses from farmland and drainage channels deliver nutrients and sediments, raising risks of eutrophication and turbidity during monsoon periods. Seasonal peaks in visitation create localized disturbance along shorelines, disrupting wildlife resting and feeding. To address these dynamics, key strategies include long-term monitoring of hydrology and salinity regimes, tracking reedbed boundaries and biomass, reducing nonpoint-source pollution and restoring buffer zones, adaptive visitor management during migratory bird peak seasons, and integrating geological and ecological interpretation. Together, these actions are essential to maintain the ecological integrity of Madongho Wetland.

4.2 - What wetland type(s) are in the site?

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> Mt. Permanent rivers/ streams/ creeks	Madongho (Gansagi)	1	105.9	

(ECD) Habitat connectivity

Madongho Wetland maintains sound connectivity across open water, rivers, and reed fields. However, the Geosan Embankment floodgates can alter tidal exchange with the Tang Port, thereby changing salt and flow conditions and affecting fish movement.

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/LILIOPSIDA	<i>Miscanthus sacchariflorus</i>	An important role in enhancing the ecological diversity and health of the wetland while coexisting with Common reeds.
TRACHEOPHYTA/LILIOPSIDA	<i>Phragmites australis</i>	Foundation species that plays the most critical role in creating and maintaining the wetland ecosystem.

Invasive alien plant species

Phylum	Scientific name	Impacts
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ambrosia artemisiifolia</i>	Actual (major impacts)
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Lactuca serriola</i>	Actual (minor impacts)
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Solidago rugosa</i>	Actual (major impacts)

Optional text box to provide further information

A core objective for Madongho Wetland is the conservation and management of its dominant species, the common reed (*Phragmites australis*) and silver grass (*Miscanthus sacchariflorus*). This is critical for supporting overall biodiversity by preserving structural stability and habitat heterogeneity. Management strategies should focus on maintaining optimal hydrological and soil conditions and preserving or restoring the ecotone structure at community margins—specifically the gradient of shallow water, open water, and reed beds—to facilitate seed establishment and faunal movement.

Conversely, a primary threat to the ecosystem is posed by invasive alien species, including tall goldenrod (*Solidago altissima*), prickly lettuce (*Lactuca serriola*), and common ragweed (*Ambrosia artemisiifolia*), which diminish biodiversity by invading native flora habitats. The most efficacious control strategy for these species is manual extraction prior to their fruiting stage, followed by the complete removal and off-site disposal of all plant matter. To effectively deplete the soil seed bank, this initiative must be implemented on a recurring annual basis rather than as a singular event. Post-removal, immediate revegetation of the cleared sites with native species like reeds and silver grass is essential to stabilize the substrate, inhibit reinvasion, and ultimately restore and sustain a healthy wetland ecosystem.

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
CHORDATA/MAMMALIA	<i>Apodemus agrarius</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/MAMMALIA	<i>Crocidura shantungensis</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/AMPHIBIA	<i>Hynobius leechii</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/MAMMALIA	<i>Meles leucurus</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/MAMMALIA	<i>Mogera wogura</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/MAMMALIA	<i>Mustela sibirica</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/MAMMALIA	<i>Nyctereutes procyonoides</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/REPTILIA	<i>Oocatochus rufodorsatus</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/AMPHIBIA	<i>Rana uenoi</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/REPTILIA	<i>Rhabdophis tigrinus</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/MAMMALIA	<i>Sciurus vulgaris</i>				Prohibition species against capture and collection (MOE Korea)
CHORDATA/SQUAMATA	<i>Takydromus wolteri</i>				Prohibition species against capture and collection (MOE Korea)

Invasive alien animal species

Phylum	Scientific name	Impacts
CHORDATA/AMPHIBIA	<i>Lithobates catesbeianus</i>	Actual (minor impacts)
ARTHROPODA/INSECTA	<i>Ricanula sublimata</i>	Actual (minor impacts)
CHORDATA/REPTILIA	<i>Trachemys scripta</i>	Actual (minor impacts)
CHORDATA/ACTINOPTERYGII	<i>Lepomis macrochirus</i>	Actual (minor impacts)
CHORDATA/ACTINOPTERYGII	<i>Micropterus salmoides</i>	Actual (minor impacts)

Optional text box to provide further information

In addition to internationally and nationally protected species, Madongho Wetland is home to various other species designated and managed by the government. Therefore, to protect their habitats, efforts are required not only to conserve and maintain the health of the wetland and surrounding ecosystems through ecosystem monitoring and educational programs for local residents, but also to regulate and enforce against illegal activities in accordance with relevant laws.

Regarding invasive species, priority should be given to assessing the current status of each species' distribution. Based on such assessments, removal and control measures should follow, including the elimination of eggs and larvae during the breeding season and enhanced surveillance to prevent large-scale outbreaks.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cwa: Humid subtropical (Mild with dry winter, hot summer)

Climate observations near Madongho Wetland (Changwon station) show average temperatures over the past 20 years ranged from 14.0–15.7 °C, higher than the national average (12.5 °C), reflecting the warm maritime characteristics of Korea's southern coast. Recorded extremes include a minimum of −14.0 °C (2021) and a maximum of 38.5 °C (2017).

Annual precipitation ranges between 879 and 2,161 mm, compared with the national mean of 1,308 mm, highlighting large regional variability. As throughout Korea, 50–60% of rainfall occurs in summer (June–August), with recent increases in early autumn rainfall. The combined influence of monsoon rains, typhoons, and autumn rainfall intensifies this summer–early autumn concentration pattern in the southeastern coastal area.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

Entire river basin ☐

Upper part of river basin ☐

Middle part of river basin ☐

Lower part of river basin ☒

More than one river basin ☐

Not in river basin ☐

Coastal ☐

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Goseong Stream, Danghang Bay

4.4.3 - Soil

Mineral ☒

Organic ☒

No available information ☐

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes ☒ No ☐

Please provide further information on the soil (optional)

The soils of Madongho Wetland reflect estuarine brackish characteristics, dominated by fine-grained silts and clays with continuous deposition of suspended organic matter from Goseong Stream. Around reedbeds, low-oxygen conditions promote soil organic carbon accumulation, active denitrification, and phosphorus adsorption.

Salinity and water residence time vary with tidal cycles, stream flow, and sluice operations. High salinity and prolonged stagnation increase salt accumulation and sulfide buildup, while flood pulses lower salinity and redistribute fine sediments. Nonpoint-source inflows from paddy fields add nutrients and fine particles, raising organic content and hypoxia risk. Overall, the wetland hosts a mosaic of mineral and organic soils with high variability driven by hydrological conditions.

4.4.4 - Water regime

Water permanence

Presence?	
Usually permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	
Water inputs from precipitation	☒	No change
Water inputs from groundwater	☒	No change
Water inputs from surface water	☒	No change

Water destination

Presence?	
Marine	No change

Stability of water regime

Presence?	
Water levels largely stable	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

The mixing of seawater and freshwater in Madongho Wetland is influenced by two embankments separating Danghang Bay and the wetland. During low tide and flood events, sluice gates are opened, allowing effective mixing. However, at high tide the gates are closed, limiting water exchange and reducing mixing efficiency. Overall, the water surface regime remains relatively stable.

(ECD) Connectivity of surface waters and of groundwater	The wetland and surrounding farmland lie at nearly the same elevation, so rising wetland water levels constrain groundwater absorption and surface drainage in nearby fields, sometimes causing temporary flooding.
(ECD) Stratification and mixing regime	Freshwater from Goseong Stream and seawater from Danghang Bay mix within the wetland, creating stratification by temperature, salinity, and density. Mixing varies with sluice gate operations, directly altering water properties.

4.4.5 - Sediment regime

- Significant erosion of sediments occurs on the site ☐
- Significant accretion or deposition of sediments occurs on the site ☐
- Significant transportation of sediments occurs on or through the site ☒
- Sediment regime is highly variable, either seasonally or inter-annually ☐
- Sediment regime unknown ☐

Please provide further information on sediment (optional):

The soils of Madongho Wetland reflect the characteristics of an estuarine brackish environment, dominated by fine-grained silts and clays. Suspended organic matter transported by the Goseong Stream is continuously deposited. Around the reedbeds, low-oxygen (reduced) conditions prevail, promoting the accumulation of soil organic carbon (SOC), active denitrification processes, and phosphorus adsorption and precipitation.

(ECD) Light - reaching wetland	Turbidity shows strong seasonal variation, rising significantly during flood periods between June and September.
(ECD) Water temperature	Water temperature varies seasonally with air temperature, peaking in August and lowest in January–February.

4.4.6 - Water pH

- Acid (pH<5.5) ☐
- Circumneutral (pH: 5.5-7.4) ☒
- Alkaline (pH>7.4) ☐
- Unknown ☐

Please provide further information on pH (optional):

The wetland maintains a neutral pH, buffered by salinity conditions.

4.4.7 - Water salinity

- Fresh (<0.5 g/l) ☐
- Mixohaline (brackish)/Mixosaline (0.5-30 g/l) ☒
- Euhaline/Eusaline (30-40 g/l) ☐
- Hyperhaline/Hypersaline (>40 g/l) ☐
- Unknown ☐

Please provide further information on salinity (optional):

Madongho Wetland is strongly influenced by seasonal rainfall, tidal cycles, and embankment sluice operations. During the summer monsoon season (June–September), large freshwater inflows expand low-salinity zones into middle and lower reaches, temporarily raising dissolved oxygen and turbidity while providing high-quality spawning and nursery grounds for fish and enhancing nitrogen removal. During the winter to early spring dry season (December–March), salinity increases under stronger marine influence and longer water residence times. Low-salinity patches remain common in upstream and reedfront areas year-round, functioning as key breeding and rearing habitats. Overall, habitat quality and biodiversity depend on seasonal transitions between low-salinity and mesohaline conditions. Effective management requires maintaining low-salinity waters during breeding season (April–July) and preventing prolonged hypersalinity during dry seasons.

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic ☐

Mesotrophic ☒

Oligotrophic ☐

Dystrophic ☐

Unknown ☐

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the i) broadly similar ☐ ii) significantly different ☒ site itself:

Surrounding area has greater urbanisation or development ☐

Surrounding area has higher human population density ☐

Surrounding area has more intensive agricultural use ☒

Surrounding area has significantly different land cover or habitat types ☐

Please describe other ways in which the surrounding area is different:

The surrounding area consists mostly of agricultural land, with rice paddies as the dominant land use. Since its designation as a Wetland Protected Area in 2023, farmland has been purchased for planned wetland restoration. The primary objectives of Madongho Wetland restoration are:

1. recovery of hydrological regimes and improvement of water quality,
2. restoration of rice paddy–wetland mosaic habitats,
3. enhancement of ecosystem services such as flood mitigation and carbon sequestration, and
4. establishment of a community-based management system.

These restoration efforts are intended to be implemented and sustained over the long term.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Water for irrigated agriculture	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Storage and delivery of water as part of water supply systems for agriculture and industry	High
Pollution control and detoxification	Water purification/waste treatment or dilution	High
Climate regulation	Local climate regulation/buffering of change	High
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	High
Recreation and tourism	Picnics, outings, touring	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Sediment retention	High
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High
Nutrient cycling	Carbon storage/sequestration	not relevant for site

Within the site: 300

Outside the site: 5000

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes ☐ No ☒ Unknown ☐

4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland ☐

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland ☐

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples ☐

iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland ☐

<no data available>

4.6 - Ecological processes

(ECD) Primary production	Although some rice farming persists, farmland is planned for wetland restoration. Primary production is driven by phytoplankton, aquatic macrophytes(Phragmites australis), and rice. Agricultural runoff currently increases summer phytoplankton dominance.
(ECD) Nutrient cycling	Nitrogen and phosphorus enter from upstream Goseong Stream and surrounding agricultural areas. Nutrients are absorbed by riparian vegetation, with remaining loads carried through Danghang Bay into the South Sea.
(ECD) Carbon cycling	Reeds cover ~33% of the wetland, absorbing CO ₂ and storing carbon in oxygen-poor soils. Reedbeds trap sediments while microbial activity removes nutrients. The brackish environment suppresses methane, enhancing carbon sequestration.
(ECD) Animal reproductive productivity	Madongho supports 29 fish species spawning in shallow reedfront waters and 112 bird species, mostly migratory. Threats include altered hydrology from sluice operations hindering fish migration, summer hypoxia, and visitor disturbance during breeding.
(ECD) Vegetational productivity, pollination, regeneration processes, succession, role of fire, etc.	Reeds sprout in March–April, reach peak biomass in July–September, and senesce in October–November. Dead stems enter sediments as organic matter, fueling nutrient cycling. Seasonal water and salinity pulses drive gradual reedbed expansion.
(ECD) Notable species interactions, including grazing, predation, competition, diseases and pathogens	Madongho supports low-intensity winter grazing by waterbirds, stabilizing nutrient cycling, while predator–prey linkages connect aquatic species with herons and raptors. Disease risks are managed through low-density dispersal and monitoring.
(ECD) Notable aspects concerning animal and plant dispersal	With estuarine wetlands declining across Korea, staging and breeding habitats are limited. Madongho Wetland functions as a key stopover and wintering site on the EAAF, contributing to species dispersal and biodiversity maintenance.
(ECD) Notable aspects concerning migration	Madongho Wetland is a crucial EAAF staging and wintering site. Winter species include Greater White-fronted Goose, Whooper Swan. Spring and autumn bring shorebirds, summer hosts swallows and herons, and the wetland provides fish migration routes.
(ECD) Pressures and trends concerning any of the above, and/or concerning ecosystem integrity	Madongho Wetland, at the Goseong Stream estuary, is dominated by reedbeds. Accelerated sedimentation has caused shallowing and terrestrialization, reducing waterbird habitat. Reed removal is required to secure adequate shoreline habitats.

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	☒	☒
Provincial/region/state government	☒	☒

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	☒	☒

Provide further information on the land tenure / ownership regime (optional):

Some parcels of land within the Wetland Protected Area remain under private ownership, but the government plans to purchase 100% of these lands in the future.

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

- Goseong-gun, Gyeongsangnam-do
- Nakdong River Basin Environment Office

Provide the name and/or title of the person or people with responsibility for the wetland:

Yang Soo-Young

Postal address:

- Goseong-gun
130 Seongnae-ro, Goseong-eup, Goseong-gun, Gyeongsangnam-do, 52943, Republic of Korea
- Nakdong River Basin Environment Office, MOE Korea
5 Jungang-daero 250beon-gil, Seongsan-gu, Changwon-si, Gyeongsangnam-do 51439, South Korea

E-mail address:

s50002@korea.kr

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Housing and urban areas	Low impact	Low impact	☐	☒

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Salinisation	Low impact	Low impact	☒	☒

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Annual and perennial non-timber crops	Low impact	Low impact	☒	☒

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Roads and railroads	Low impact	Low impact	☒	☒

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Recreational and tourism activities	Low impact	Medium impact	☐	☒

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Dams and water management/use	High impact	Low impact	☒	☐

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Invasive non-native/ alien species	Medium impact	Medium impact	☒	☒

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Household sewage, urban waste water	Medium impact	Medium impact	☒	☒
Agricultural and forestry effluents	Medium impact	Medium impact	☒	☒
Garbage and solid waste	Medium impact	Medium impact	☒	☒

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Storms and flooding	Medium impact	Medium impact	☒	☒

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Wetland Protected Area (WPA)	Madongho Wetland	https://www.nie.re.kr/nie/main/contents.do?menuNo=200292	whole
Wildlife Protection Area	Gansaji		whole

5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve ☐
- Ib Wilderness Area: protected area managed mainly for wilderness protection ☐
- II National Park: protected area managed mainly for ecosystem protection and recreation ☐
- III Natural Monument: protected area managed mainly for conservation of specific natural features ☐
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☒
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☐
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☐

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Species

Measures	Status
Control of invasive alien plants	Partially implemented

Human Activities

Measures	Status
Fisheries management/regulation	Implemented

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes ☒ No ☐

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ☐ No ☒

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Animal community	Implemented
Birds	Implemented
Plant species	Implemented
Animal species (please specify)	Implemented
Plant community	Implemented

Since the designation of the Wetland Protected Area, annual ecosystem monitoring has been conducted by the managing authority, the Nakdong River Basin Environment Office. In addition, the National Institute of Ecology's Wetland Center carries out detailed surveys every five years. A comprehensive survey of Madongho Wetland is scheduled to be conducted by the Wetland Center in 2026.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Gyeongsangnam-do Ramsar Environmental Foundation. (2012). Survey Report on the Ecological Value of Madongho Wetland, Goseong County, Gyeongsangnam-do. Gyeongsangnam-do Ramsar Environmental Foundation, 149 pp.

Goseong County. (2020). Feasibility Study and Master Plan for the Gansaji Reed Wetland Ecopark Project. Goseong County, 219 pp.

Goseong County. (2021). Designation Plan for the Gansaji Wetland Protected Area.

Goseong County. (2023). Ecological Survey and Selection of Representative Species in Madongho Wetland.

National Institute of Biological Resources. (2022). Korean Red Data Book, Vol. 6: Mollusks. National Institute of Biological Resources, 193 pp.

National Institute of Biological Resources. (2020). Korean Red Data Book, Vol. 4: Mammals. National Institute of Biological Resources, 101 pp.

National Institute of Biological Resources. (2023). Korean Red Data Book, Vol. 9: Insects III. National Institute of Biological Resources, 65 pp.

National Institute of Ecology. (2016). The 4th National Natural Environment Survey (2015): Endangered Wildlife, Guman: 358143.

Park, S.-H. (1995). Illustrated Book of Naturalized Plants in Korea. Seoul: Ilchokak. 371 pp.

Lee, C.-B. (1982). Illustrated Flora of Korea. Hyangmunsa. 990 pp.

Han, H.-W. (2024). Community Analysis of Benthic Macroinvertebrates in Madongho Wetland and Inflowing Streams.

Ministry of Environment. (2010). The 3rd National Natural Environment Survey (2010): Guman: 358143.

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<1 file(s) uploaded>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<1 file(s) uploaded>

vi. other published literature

<no file available>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Madongho Wetland (*Nature and Human*, 11-09-2023)



Madongho Wetland (*Nature and Human*, 20-08-2023)



Madongho Wetland (*Goseong-gun*, 26-11-2023)



Madongho Wetland (*Goseong-gun*, 23-09-2021)

6.1.4 - Designation letter and related data

Designation letter

<2 file(s) uploaded>

Date of Designation 2026-08-10