



# Ramsar Information Sheet

Published on 27 April 2022

Update version, previously published on : 1 January 1998

## Ukraine

### Molochnyi Liman



Designation date	23 November 1995
Site number	770
Coordinates	46°32'23"N 35°21'31"E
Area	29 151,75 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

Molochnyi Liman is the largest lagoon on the northern coast of the Sea of Azov. It relates to the type of half-closed water bodies connected with the Sea of Azov, periodically ceases and resumes. When the lagoon is connected with the Sea it has high productivity indices, optimal water salinity at the level of 17-25 g/L, and high biological diversity. When the sea-lagoon connection is closed, salinity increases up to 30-100 g/L, the structure of communities becomes more simplified, the water level falls. These changes in the lagoon status occur on a cycle of 1 to 5-6 years.

The Site plays an important role for breeding, foraging, migration and wintering of birds. It supports 221 bird species, including 102 species of waterbirds. Up to 23,000 ind. are recorded in winter, among them such rare species as *Haliaeetus albicilla*, *Numenius arquata*, *Tadorna ferruginea*. The Site is a valuable stopover and supports seasonal concentrations of waterbirds. The Site is vitally crucial in arid conditions of the dry steppe zone. During migrations, in case of optimal hydrological conditions, the Site gives shelter up to 35,000 ind. of Common Shelduck (*Tadorna tadorna*), 62,000 ind. of Black-headed Gull (*Larus ridibundus*), 9,000 ind. of Mallard (*Anas platyrhynchos*). The lagoon and adjacent marine waters support up to 45 fish species, 9 of which are rare. To-date, the Site is one of two spawning areas of the so-iuy mullet (*Liza haematocheilus*), fattening area of the commercially valuable Black Sea mullets (*Liza aurata*, *Mugil cephalus*).

The Site support 33 flora species, 9 species of amphibians and reptiles protected at the national and global level. Apart from it, the Site provides an important habitat for 3 species of mammals and 12 species of insects, listed in the Red Data Book of Ukraine.

Systematic scientific studies with a wide scope have a rather long history and have been conducted for over 80 years. During this time, a considerable amount of scientific material has been accumulated that allows studying the transformation characteristics of Molochnyi Liman in terms of anthropogenic impacts, and under climate change.

The climate properties and attractive landscapes of the lagoon have high recreational capacities. The surrounding area is a popular recreation place.

The entire territory of the Site is included in Pryazovskyi National Nature Park.

## 2 - Data & location

### 2.1 - Formal data

#### 2.1.1 - Name and address of the compiler of this RIS

##### Responsible compiler

Institution/agency	Pryazovskyi National Nature Park
Postal address	8-ho Bereznia St. 6, Melitopol, Melitopol District, Zaporizhzhia Region, Ukraine, 72319

##### National Ramsar Administrative Authority

Institution/agency	Ministry of Environmental Protection and Natural Resources of Ukraine
Postal address	35, Vasilya Lipkivs'kogo Street, Kyiv, 03035, Ukraine

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

From year	1998
To year	2018

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Molochnyi Liman
---	-----------------

#### 2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary	Yes <input type="radio"/> No <input checked="" type="radio"/>
(Update) B. Changes to Site area	the area has increased
(Update) The Site area has been calculated more accurately	<input checked="" type="checkbox"/>
(Update) The Site has been delineated more accurately	<input checked="" type="checkbox"/>
(Update) The Site area has increased because of a boundary extension	<input checked="" type="checkbox"/>
(Update) The Site area has decreased because of a boundary restriction	<input type="checkbox"/>
(Update) For secretariat only: This update is an extension	<input type="checkbox"/>

#### 2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	Not evaluated
--	---------------

## 2.2 - Site location

### 2.2.1 - Defining the Site boundaries

b) Digital map/image  
<2 file(s) uploaded>

Former maps	0
-------------	---

#### Boundaries description

The Site is situated in the south of Zaporizhzhia Oblast. Administratively it is located within Melitopol District. The territory of the Site is located 15 km to the south of Melitopol. In the west the Site borders on the villages of Radivonivka, Bohatyr, Sheluhy, Okhrimivka, Kyryivka. In the east it borders on the villages of Mordvynivka, Hyrsivka, Dunaivka, Oleksandrivka, Stepanivka Persha. The territory has an elongated form stretching from north to south, and slightly widened to the south: the longest part is 36 km, the width of the southern part reaches 10 km, that of the northern part up to 4 km. The boundaries of the Site run along with the natural coastal areas around the lagoon and include the Spit and the Sea water area nearby. The entire area of the Site is included in Pryazovskyi National Nature Park. In 2021 the boundaries of the Site was extended and delineated more accurately. The area was calculated based on the Land Cadastral Map of Ukraine using GIS tools.

### 2.2.2 - General location

a) In which large administrative region does the site lie?	Zaporizka Oblast
--	------------------

b) What is the nearest town or population centre?

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):

Area, in hectares (ha) as calculated from GIS boundaries

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	the Sea of Azov
EU biogeographic regionalization	Steppic

Other biogeographic regionalisation scheme

According to the zoogeographical zoning of Ukraine (Sherbak, 1988), the Site is located within the Western Steppe Area and the Syvash-Azov Sub-area of the Azov–Black Sea region of Pontian District.  
 According to the geobotanical zoning (Didukh, Sheliag-Sosonko, 2003), the Site is located within the Dnieper–Azov District of gramineous and wormwood-gramineous steppes and flooded meadows of the Black Sea-Azov Steppe Sub-province of the Pontian Steppe Province of the Steppe Zone of Ukraine.

### 3 - Why is the Site important?

#### 3.1 - Ramsar Criteria and their justification

- Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

Molochnyi Liman is the largest agoon on the northern coast of the Sea of Azov. It relates to the type of half-closed water bodies connected with the Sea of Azov, periodically ceases and resumes. When the lagoon is connected with the Sea it has high productivity indices, optimal water salinity at the level of 17-25 g/L, and high biological diversity. When the sea-lagoon connection is closed, salinity increases up to 30-100 g/L, the structure of communities becomes more simplified, the water level falls. These changes in the lagoon status occur on a cycle of 1 to 5-6 years.

Other ecosystem services provided

The climate properties and attractive landscapes of the lagoon have high recreational capacities. The surrounding area is a popular recreation place.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification

The site is one of the few areas of the Azov-Black Sea coast of Ukraine, characterized by high indices of biological diversity. The site plays a significant role in the conservation of local and migratory bird communities, serves as a spawning and fattening area for some commercial fish species, supports high numbers of flora and fauna species. The territory of the site is part of the international Azov-Black Sea ecological corridor.

The flora of Molochnyi Liman consists of about 712 vascular plants from 79 families. The dominating families are Asreraceae, Poaceae, Fabaceae, Brassicaceae, Caryophyllaceae, Chenopodiaceae, Lamiaceae, Apiaceae, Scrophulariaceae, Rosaceae. The spectrum of dominating families, and the ratio of the classes Liliopsida to Magnoliopsida indicates that the local vegetation is attached to the Mediterranean flora type. The flora heterogeneity is confirmed by the presence in its structure the Mediterranean, boreal and Pontic genera. According to systematic and chorological characteristics, the coastal flora of Molochnyi Liman is similar to that of the northern part of the Azov Sea region and Syvash region as well.

Under present conditions, about 45 species of fish are recorded in the liman Site waters. The highest diversity can be found in marine water area, while the liman supports only from 3 to 8 species. Herpetological community of Molochnyi Liman includes 3 types of amphibians and 6 species of reptiles. Distribution of animals in the site is uneven. The largest species diversity is recorded in the upper reaches and on the spit. In different seasons, 221 species of birds are found, including 102 waterfowl species. There are more than 30 species of mammals, of which 12 belong to the order Rodentia, 7 – Carnivora, 1 – Lagomorpha, 3 – Insectivora, 8 – Chiroptera and 2 – Ungulata.

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

- Criterion 5 : >20,000 waterbirds

Overall waterbird numbers 95 000

Start year 1998

Source of data: ROM Bulletin: Results of Regional Ornithological Monitoring. – Iss. 8. – 2014. – 60 p.

 Criterion 6 : >1% waterbird population Criterion 8 : Fish spawning grounds, etc.

Justification

Molochnyi Liman plays an important role in reproducing populations of the so-iyu mullet (*Liza haematocheilus*) and European flounder (*Platichthys flesus*) in the Azov basin. This liman is one of the two existing places (other one is Lake Syvash) for the natural reproduction of these commercially important species. Hydrochemical conditions, having formed in the water body, facilitate effective spawning of these species. Thus, in recent years the spawning in Molochnyi Liman has resulted in more than 2 mln of young fish that entered the Sea of Azov. In some years the so-iyu mullet becomes a dominant commercial fish species of the Sea of Azov amounting to 10 000 tons in catches. In addition, the site provides a spawning area for such species as *Neogobius melanostomus*, *N. fluviatilis*, *Zosterisessor ophiocephalus*, and *Atherina pontica*.

### 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
<b>Plantae</b>								
TRACHEOPHYTA/ LILIOPSIDA	<i>Agropyron cimmericum</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EN	<input type="checkbox"/>		
TRACHEOPHYTA/ LILIOPSIDA	<i>Allium pervestitum</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EN	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - EN	
TRACHEOPHYTA/ LILIOPSIDA	<i>Asparagus pallasii</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Astragalus onobrychis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	listed in the Red Data Book of Ukraine - LC	
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Crambe maritima</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Cymbaria borysthenica</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	listed in the Red Data Book of Ukraine - rare	
TRACHEOPHYTA/ LILIOPSIDA	<i>Damasonium alisma</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VU	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - CR	
TRACHEOPHYTA/ LILIOPSIDA	<i>Elymus stipifolius</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	listed in the Red Data Book of Ukraine - NE	
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Ferula orientalis</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Bern Convention Appendix I	
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Medicago falcata</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	VU	<input type="checkbox"/>		
TRACHEOPHYTA/ MAGNOLIOPSIDA	<i>Tamarix gracilis</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
TRACHEOPHYTA/ LILIOPSIDA	<i>Zostera marina</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>	Bern Convention Appendix I	

The flora of Molochnyi Liman consists of about 712 vascular plants from 79 families. The dominating families are Asreraceae, Poaceae, Fabaceae, Brassicaceae, Caryophyllaceae, Chenopodiaceae, Lamiaceae, Apiaceae, Scrophulariaceae, Rosaceae. The spectrum of dominating families, and the ratio of the classes Liliopsida to Magnoliopsida indicates that the local vegetation is attached to the Mediterranean flora type. The flora heterogeneity is confirmed by the presence in its structure the Mediterranean, boreal and Pontic genera. According to systematic and chorological characteristics, the coastal flora of Molochnyi Liman it is similar to that of the northern part of Azov Sea region and Syvash region as well.

Vegetation of the site is classified into 6 types of plant communities, depending on the type of the area: aquatic (including coastal and littoral swamps) communities (dominants are Zannichelia major, Zostera marina, Z. noltii, Potamogeton pectinatum, Phragmites australis, Bolboschoenus maritimus, Scirpus tabernaemontani, S. litoralis), communities of saltmarshes (Salicornia perennans, Suaeda prostrata, Halocnemum strobilaceum), meadows (Aeluropus littoralis, Elytrigia elongata, Juncus gerardii, Puccinellia distans), littoral (including littoral-insular) phytocoenoses (Leymus sabulosus, Crambe maritime, Carex colchica, Anisantha tectorum), planted forests (Elaeagnus angustifolia, Pinus pallasiana, Robinia pseudoacacia, Ulmus minor), steppes (Agropyron pectinatum, Festuca valesiaca, Stipa ssp.). The site holds 19 species listed in the IUCN Red List. The European Red List includes 16 species of vascular plants growing in the site. 17 (3.9%) of 439 species of vascular plants included in the Red Data Book of Ukraine can be found in the site. Of them, very rare species are Allium pervestitum Klokov, Asparagus pallasii Miscz., Cymbochasma borysthenica (Pall. Ex Schlecht.) Klokov & Zoz, Tamarix gracilis Willd. Only two species - Zostera marina L. (shallows, bays of the liman lower reaches, sometimes forms communities) and Ferula orientalis L. (saline steppes, steppe slopes, sporadic) are included in the Appendix of the Bern Convention.

### 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								
<b>Others</b>																	
ARTHROPODA/ INSECTA	<i>Anax imperator</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
ARTHROPODA/ INSECTA	<i>Bombus fragrans</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - EN	
CHORDATA/ REPTILIA	<i>Emys orbicularis</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input type="checkbox"/>	<input type="checkbox"/>	Bern - Annex II	
ARTHROPODA/ INSECTA	<i>Iris polystictica</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	
ARTHROPODA/ INSECTA	<i>Lixus canescens</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	
CHORDATA/ MAMMALIA	<i>Lutra lutra</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - EN	
ARTHROPODA/ INSECTA	<i>Megascolia maculata</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ MAMMALIA	<i>Mustela eversmannii</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - EN	
CHORDATA/ MAMMALIA	<i>Nyctalus lasiopterus</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - EN	
CHORDATA/ MAMMALIA	<i>Nyctalus noctula</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
ARTHROPODA/ INSECTA	<i>Papilio machaon</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
ARTHROPODA/ INSECTA	<i>Periphanes delphinii</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ MAMMALIA	<i>Phocoena phocoena</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
CHORDATA/ MAMMALIA	<i>Pipistrellus kuhlii</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	
ARTHROPODA/ INSECTA	<i>Proserpinus proserpina</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	Bern - Annex II	
ARTHROPODA/ INSECTA	<i>Saga pedo</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	

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/ MAMMALIA	<i>Sicista subtilis</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - EN	
CHORDATA/ REPTILIA	<i>Vipera renardi</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	1 ind./1 000 m of the transect
CHORDATA/ MAMMALIA	<i>Vormela peregusna</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	
<b>Fish, Mollusc and Crustacea</b>																	
CHORDATA/ ACTINOPTERYGII	<i>Acipenser gueldenstaedtii</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				CR	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	The water area of the Sea of Azov is important for fattening of juveniles
CHORDATA/ ACTINOPTERYGII	<i>Liza haematocheila</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		spawns only in Molochnyi Liman and is an important commercial species
CHORDATA/ ACTINOPTERYGII	<i>Neogobius fluviatilis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Platichthys flesus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		spawns only in Molochnyi Liman and is a commercial species of secondary importance
CHORDATA/ ACTINOPTERYGII	<i>Pungitius platygaster</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Bern - Annex III	
CHORDATA/ ACTINOPTERYGII	<i>Syngnathus abaster</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	Bern - Annex III	
CHORDATA/ ACTINOPTERYGII	<i>Zosterisessor ophiocephalus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		spawns only in Molochnyi Liman and is a commercial species of secondary importance
<b>Birds</b>																	
CHORDATA/ AVES	<i>Anas platyrhynchos</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30000	2012-2018	2	LC	<input type="checkbox"/>	<input type="checkbox"/>		Occurs in the wetland in all seasons, in winter – up to 9 000 ind. Pop: PLATYRHYNCHOS, EASTERN EUROPE/BLACK SEA & EAST MEDITERRANEAN
CHORDATA/ AVES	<i>Anas querquedula</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1200	2012-2018			<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ AVES	<i>Aythya ferina</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	180	2012-2018		VU	<input type="checkbox"/>	<input type="checkbox"/>		Occurs in the wetland during migrations – up to 180 ind.
CHORDATA/ AVES	<i>Aythya nyroca</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	2012-2018		NT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Red Data Book of Ukraine - VU	Occurs in the post-breeding period – 1-4 ind.; breeding of single pairs is supposed
CHORDATA/ AVES	<i>Branta ruficollis</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30	2012-2017		VU	<input type="checkbox"/>	<input checked="" type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	Occurs in the wetland during migrations – up to 30 ind.
CHORDATA/ AVES	<i>Calidris ferruginea</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	700	2012-2018		NT	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Occurs in the wetland during migrations – up to 700 ind.
CHORDATA/ AVES	<i>Charadrius alexandrinus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	2012-2017		LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	Up to 25 breeding pairs
CHORDATA/ AVES	<i>Chroicocephalus genei</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4800	2012-2016			<input type="checkbox"/>	<input type="checkbox"/>		Non-regular breeding of 2400 pairs, comprising 1.4% of the Black Sea population (Black Sea and Mediterranean)
CHORDATA/ AVES	<i>Chroicocephalus ridibundus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	62000	2012-2018	3.6		<input type="checkbox"/>	<input type="checkbox"/>		Occurs in the wetland during migrations – up to 62 000 ind., comprising 3.6% of the Eastern European Population (East Europe/ Black Sea & East Mediterranean)
CHORDATA/ AVES	<i>Glaucopis pratensis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	220	2012-2015		LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	110 breeding pairs
CHORDATA/ AVES	<i>Grus grus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	800			LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	Occurs in the wetland during migrations – up to 800 ind., during summering – up to 130 ind.



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>Haematopus ostralegus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1100	2012-2017		NT	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	During migrations – up to 1 100 ind., 10-15 breeding pairs
CHORDATA/AVES	<i>Haliaeetus albicilla</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	2012-2018		LC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	Migratory and wintering species - up to 4 ind.
CHORDATA/AVES	<i>Himantopus himantopus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	200	2012-2017		LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	Up to 140 breeding pairs; during migrations – up to 200 ind.
CHORDATA/AVES	<i>Numenius arquata</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	230	2012-2018		NT	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Vu	Occurs in the wetland regularly during migrations – up to 160 ind., in favourable seasons up to 230 wintering ind. can be found
CHORDATA/AVES	<i>Pelecanus onocrotalus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	2012-2018		LC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	listed in the Red Data Book of Ukraine - EN	Occurs in the wetland during summering – up to 50 ind.
CHORDATA/AVES	<i>Philomachus pugnax</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	21000	2012-2018			<input type="checkbox"/>	<input type="checkbox"/>		21 000-32 000 ind. during the migration season
CHORDATA/AVES	<i>Recurvirostra avosetta</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2120	2012-2018	5.4	LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - Rare	The highest number is recorded during the autumn migrations – up to 2 120 ind., comprising 5.4% of the Black Sea population (South-Eastern Europe, Black Sea and Turkey); up to 200 breeding pairs.
CHORDATA/AVES	<i>Tadorna ferruginea</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	280	2012-2018		LC	<input type="checkbox"/>	<input type="checkbox"/>	listed in the Red Data Book of Ukraine - VU	Occurs in the wetland during migrations – up to 450 ind., in winter – up to 280 ind; breeding of single pairs is supposed
CHORDATA/AVES	<i>Tadorna tadorna</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35000	2012-2018	13.5	LC	<input type="checkbox"/>	<input type="checkbox"/>		Numerous in the wetland during migrations –up to 35,000 ind., comprising 13.5% of the Black Sea population (Black Sea and Mediterranean); in favourable seasons up to 450 wintering ind. can be found.
CHORDATA/AVES	<i>Vanellus vanellus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	110	2012-2017		NT	<input type="checkbox"/>	<input type="checkbox"/>		Up to 55 breeding pairs

1) Percentage of the total biogeographic population at the site

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

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
A2.61 Seagrass beds on littoral sediments	<input checked="" type="checkbox"/>	Hyperhalinous aquatic communities dominated by species from the genera <i>Zannichelia</i> , <i>Zostera</i> , <i>Potamogeton</i>	Support biodiversity (including different types of habitats) in the region
A5 Sublittoral sediment	<input checked="" type="checkbox"/>	Mud-shell sediments in the sublittoral zone	Support biodiversity (including different types of habitats) in the region
B1.1 Sand beach driftlines	<input checked="" type="checkbox"/>	Beach communities dominated by <i>Argusia sibirica</i> , <i>Salsola pontica</i> , <i>S. soda</i> , <i>Euphorbia peplis</i>	Are centres of endemism or support a higher number of endemic species
B1.3 Shifting coastal dunes	<input checked="" type="checkbox"/>	Beach communities dominated by <i>Argusia sibirica</i> , <i>Leymus sabulosus</i> , <i>Crambe pontica</i>	Are centres of endemism or support a higher number of endemic species
E1.2 Perennial calcareous grassland and basic steppes	<input checked="" type="checkbox"/>	Beach communities dominated by the species from the genera <i>Festuca</i> ssp., <i>Agropyron</i> ssp., <i>Stipa</i> ssp.	Are centres of endemism or support a higher number of endemic species
X29 Islands of salt lakes	<input checked="" type="checkbox"/>	Communities of beaches, dunes and depressions, dominated by <i>Argusia sibirica</i> , <i>Artemisia santonica</i> , <i>Salsola soda</i> , <i>Salicornia prostrata</i>	Support biodiversity (including different types of habitats) in the region
X02 Salt lagoons	<input checked="" type="checkbox"/>	Habitats of shallow salt lagoon – Molochnyi Liman	Support biodiversity (including different types of habitats) in the region
E6.2. Continental inland salt steppes	<input checked="" type="checkbox"/>	Beach communities dominated by <i>Salsola soda</i> , <i>Salicornia prostrata</i> , <i>Halocnemum strobilaceum</i>	Support biodiversity (including different types of habitats) in the region
B1.4 Coastal stable dune grassland	<input checked="" type="checkbox"/>	Beach communities dominated by <i>Carex colchica</i> , <i>Secale sylvestre</i> , <i>Festuca beckeri</i>	Support biodiversity (including different types of habitats) in the region
A2.5 Littoral halophitic communities	<input checked="" type="checkbox"/>	Communities formed by species of the genera <i>Salicornia</i> , <i>Suaeda</i> , <i>Halimione</i> , <i>Petrosimonia</i>	Support biodiversity (including different types of habitats) in the region.

[Optional text box to provide further information](#)

\* According to EUNIS classification

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

### 4.1 - Ecological character

The Site is characterized by two different ecological states. The first state occurs when the liman is connected with the sea through an acting channel. Under such conditions, it is characterized by high productivity indices, optimal salinity of water at the level of 17-25 g/L, high biodiversity. This state had been typical for the liman until the end of the 20th century. The second state takes place when the liman loses its connection with the sea. In this case, the water level falls, salinity increases up to 30-90 g/L, and related environmental processes begin. For the last 6 years, the liman is in a state of almost complete isolation, caused by natural processes. Despite the efforts to maintain contact with the sea, there are adverse fluctuations of the hydrochemical regime, decrease in water levels, increase in salinity, loss of biodiversity (in particular reduction in the abundance and species diversity of fish and breeding birds), loss of important breeding and seasonal habitats of birds, decrease in fish productivity, stagnant processes, waterlogging and deterioration of recreational conditions. The Site is characterized by rather low amount of precipitation, high evaporation, low indices of relative humidity and surface runoff. Recent years show about 350-450 mm of annual rainfall. The Molochna River runoff has noticeably decreased as well. In the early 2000s, it equalled circa 50 mln m<sup>3</sup>, but in recent years ranged within 25-30 mln m<sup>3</sup>. In 2017-2018, there were even periods without runoff, occurred in August.

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

#### Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
A: Permanent shallow marine waters		3	800	Representative
E: Sand, shingle or pebble shores		4	200	Representative
G: Intertidal mud, sand or salt flats		2	3000	Representative
J: Coastal brackish / saline lagoons		1	16000	Representative

#### 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 >> L: Permanent inland deltas		4	110	Representative
Fresh water > Flowing water >> M: Permanent rivers/ streams/ creeks		4	4	Representative

#### Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Clay precipices, planted forests on terraced slopes	50

### 4.3 - Biological components

#### 4.3.1 - Plant species

##### Invasive alien plant species

Phylum	Scientific name	Impacts	Changes at RIS update
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ailanthus altissima</i>	Potential	unknown
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ambrosia artemisiifolia</i>	Actual (major impacts)	unknown
TRACHEOPHYTA/LILIOPSIDA	<i>Cenchrus longispinus</i>	Actual (minor impacts)	unknown
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Elaeagnus angustifolia</i>	Actual (major impacts)	unknown
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Xanthium orientale riparium</i>	Actual (major impacts)	unknown

#### 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>Crocidura leucodon</i>				Red Data Book of Ukraine-DD
CHORDATA/MAMMALIA	<i>Mustela putorius</i>				Red Data Book of Ukraine - NE
ARTHROPODA/INSECTA	<i>Xylocopa valga</i>				Red Data Book of Ukraine - Rare
ARTHROPODA/INSECTA	<i>Xylocopa violacea</i>				Red Data Book of Ukraine - Rare

Invasive alien animal species

Phylum	Scientific name	Impacts	Changes at RIS update
CHORDATA/ACTINOPTERYGII	<i>Lepomis gibbosus</i>	Actual (minor impacts)	unknown
CHORDATA/MAMMALIA	<i>Nyctereutes procyonoides</i>	Actual (major impacts)	unknown

### 4.4 - Physical components

#### 4.4.1 - Climate

Climatic region	Subregion
D: Moist Mid-Latitude climate with cold winters	Dfa: Humid continental (Humid with severe winter, no dry season, hot summer)

Current hydrometeorological conditions in the northern part of the Azov Sea basin are quite dynamic due to the global climate change. Thus, positive temperature trends, changes in atmospheric circulation, and decrease in the amount of precipitation are recorded in the region. The most representative is the sum of positive temperatures (above +15 0C), which crucially affects evaporation of Molochnyi Liman. The long-term dynamics of this index shows a significant increase in the study area. The trendline analysis shows that the average long-term growth of the sum of positive temperatures was about 400C per year. In recent years, this index is approaching up to 800C annually.

#### 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.

The basin of Molochna River, Tashchenak River, Dzhekelnia, the Sea of Azov

#### 4.4.3 - Soil

Mineral

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

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 are represented by varieties of chestnut and dark chestnut soils. Along the left shore of the liman, there are solonetz soils; on the right shore, chernozems, sod sandy-clay and sandy-loam soils lying on sandy alluvium can be found. Within the sandy spit-bar, sod sandy soils and clay-sandy non-arable soils are available. In the northern part of the liman (the Molochna River floodplain), meadow chernozem and alkaline soils on deluvial and alluvial deposits are located.

#### 4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from precipitation	<input checked="" type="checkbox"/>	unknown
Marine water	<input checked="" type="checkbox"/>	unknown

Water destination

Presence?	Changes at RIS update
To downstream catchment	unknown

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

The main hydrological changes in the water body is the water exchange with the Sea of Azov. Its intensity depends on the volume of hydromelioration works. Unfortunately, the effectiveness of these works is unsatisfactory. Thus, dredging of the channel in 2014 has brought positive changes to the liman only for a few months. Such attempts were made annually but the liman still remained under unstable hydrological conditions. The main changes in the liman in recent years are the decrease in water level in some periods up to 1 m, shrinkage of the water surface area by 30-50%, increase in salinity up to 100 ppm.

#### 4.4.5 - Sediment regime

Significant accretion or deposition of sediments occurs on the site

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Significant transportation of sediments occurs on or through the site

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Sediment regime unknown

Please provide further information on sediment (optional):

Main sediments within the site boundaries are sand and shells. Their alongshore transportation in the Sea of Azov leads to the silting of the channel. The sediment intensity in the liman is much lower. Water turbidity in the site is caused by the presence of suspended organic and mineral substances (clay, mud, organic colloids). In recent years the water transparency in the liman ranges from 5 to 70 cm. Given their shallowness, all aquatic areas of the site are included in the photic zone. Water temperature in the liman ranges from + 40 to -1.50C (minimal temperatures are recorded in yeas with high salinity – 35g/L). Ice cover is short-term, stable ice occurs in cold years, once in every 3-4 years. Ice depth, depending on conditions of a particular winter, varies from 5 to 40 cm.

#### 4.4.6 - Water pH

Alkaline (pH>7.4)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

#### 4.4.7 - Water salinity

Mixohaline (brackish)/Mixosaline (0.5-30 g/l)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Euhaline/Eusaline (30-40 g/l)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

Please provide further information on salinity (optional):

The main factors determining the regime of salinity in Molochnyi Liman are inflow of less salty waters from the Sea of Azov and freshwater inflow from the rivers Molochna and Tashchenak. Water currents and roughness cause stirring of waters with different salinity and to a certain extent smooth the water mineralization over the entire water body. When the channel acts with maximum intensity and with maximum discharge rate of the Molochna River, the water salinity in the liman drops to 25-30 g /L. Long-term water exchange with the Sea of Azov has caused the division of the liman into three parts: the lower part is less salty, the middle part has higher salinity, and the upper part is less salty due to the river runoff. Under periods of prolonged isolation of the liman during six or more months, the liman salinity increases to 65-100 g/L. Recent years did not show any critical values of dissolved oxygen. On average, this index ranges from

(ECD) Dissolved gases in water

Recent years did not show any critical values of dissolved oxygen. On average, this index ranges from 4.5 to 1.9 mg/L. In some bays of the liman, traces of hydrogen sulfide can be found at the level of 0.4-0.6 mg/L. However, it occurs only within small water area and does not affect the state of water organisms.

#### 4.4.8 - Dissolved or suspended nutrients in water

Eutrophic

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

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 site itself:   
 i) broadly similar  ii) significantly different

- 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 surroundings of the wetland is mostly represented by agricultural lands. Part of the area is covered by planted forests. Main tree species are the locust, ash, common oak, Crimean black pine and some others. In the immediate vicinity to the site there are about 20 settlements which total population exceeds 23,000 people.

### 4.5 - Ecosystem services

#### 4.5.1 - Ecosystem services/benefits

##### Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Medium
Wetland non-food products	Livestock fodder	Medium

##### Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Picnics, outings, touring	Medium
Recreation and tourism	Recreational hunting and fishing	Medium
Recreation and tourism	Nature observation and nature-based tourism	Medium
Scientific and educational	Educational activities and opportunities	Medium
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	High
Scientific and educational	Major scientific study site	High
Scientific and educational	Long-term monitoring site	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

Optional text box to provide further information

Molochnyi Liman is a source of many natural resources and ecosystem services, namely fish, recreational, vegetation, land, hydrological, mineral, climatic, aesthetic service and a number of others. The greatest value among them is given to the fish, recreational, and aesthetic values.

Within the site:

Outside the site:

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

<no data available>

## 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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Local authority, municipality, (sub)district, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

##### Private ownership

Category	Within the Ramsar Site	In the surrounding area
Cooperative/collective (e.g., farmers cooperative)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other types of private/individual owner(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Commercial (company)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

The Site is included in Pryazovskiy National Nature Park

#### 5.1.2 - Management authority

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

Pryazovskiy National Nature Park

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

Dmytro Volovyk, director

Postal address: 8-ho Bereznia St. 6, Melitopol, Zaporizhzhia Region, Ukraine, 72319

E-mail address: priazovpark@gmail.com

## 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	Changes	In the surrounding area	Changes
Tourism and recreation areas	Low impact	Low impact	<input checked="" type="checkbox"/>	increase	<input checked="" type="checkbox"/>	increase

#### Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Drainage	High impact	High impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Salinisation	High impact	High impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

#### Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Fishing and harvesting aquatic resources	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Hunting and collecting terrestrial animals	Low impact	Low impact	<input checked="" type="checkbox"/>	decrease	<input checked="" type="checkbox"/>	No change

#### Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

#### Pollution



Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Household sewage, urban waste water			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Industrial and military effluents			<input type="checkbox"/>		<input checked="" type="checkbox"/>	
Agricultural and forestry effluents			<input type="checkbox"/>		<input checked="" type="checkbox"/>	
Garbage and solid waste	Low impact	Low impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

## Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Habitat shifting and alteration	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Droughts	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

## 5.2.2 - Legal conservation status

## Regional (international) legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Other international designation	UA0000092 - Pryazovskyi NNP	<a href="https://www.coe.int/en/web/bern-convention/emerald-network">https://www.coe.int/en/web/bern-convention/emerald-network</a>	whole

## National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Hydrological reserve of national importance	Molochnyi Liman		partly
National Nature Park	Pryazovskyi National Nature Park	<a href="http://pnpp.info/">http://pnpp.info/</a>	whole

## Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Molochnyi Liman	<a href="http://datazone.birdlife.org/site/mapsearch">http://datazone.birdlife.org/site/mapsearch</a>	whole
Important Plant Area	Molochnyi Liman	<a href="http://www.botany.kiev.ua/doc/onys_h_2017.pdf">http://www.botany.kiev.ua/doc/onys_h_2017.pdf</a>	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	Partially implemented

## Habitat

Measures	Status
Catchment management initiatives/controls	Proposed

## Species

Measures	Status
Threatened/rare species management programmes	Partially implemented

Human Activities

Measures	Status
Fisheries management/regulation	Partially implemented
Regulation/management of recreational activities	Partially implemented
Communication, education, and participation and awareness activities	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
Animal species (please specify)	Implemented
Birds	Implemented
Plant community	Implemented
Water quality	Implemented
Water regime monitoring	Implemented

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

Didukh Ya.P. Geobotanical zoning of Ukraine and adjoining territories / Ya.P. Didukh, Yu.R. Shelag-Sosonko // Ukrainian Botanical Journal. - 2003. - Vol. 60, No. 1. - P. 6-17. [in Ukrainian]

Karmyshev Yu.V., Volkanova A.V. Distribution of rare reptiles in the south of Ukraine // Biological Sciences. 2014. -C 78-80. [in Russian]

Demchenko V., Vinokurova S., Chernichko J., Vorovka V., Hydrological regime of Molochnyi liman under anthropogenic and natural drivers as a basis for management decision-making. Environmental Science & Policy. -2015. V. 46. P. 37-47.

Bilyk G.I. Geobotanical description of the basin of the Molochna River and Molochnyi Liman / G.I Bilyk // Botanical Journal of the Academy of Sciences of the USSR. - 1946. - Vol. 3., Iss. 1-2. - P. 51-57. [in Ukrainian]

Wetlands of Ukraine. Directory / Ed. By Marushevsky G. B., Zharuk I. S. - Kyiv: Program Wetlands International Black Sea Programme, 2006. - 312 p. [in Ukrainian]

Dubina D.V. Reedbeds of the Black Sea region / D.V. Dubina, Yu.R. Shelag-Sosonko - Kyiv: Naukova Dumka, 1989. - 269 p. [in Russian]

Dubina D.V. Trends in anthropogenic changes of reedbed-littoral phytosystems of the Molochna River / D.V. Dubina, Yu.R. Shelag-Sosonko // Ukrainian Botanical Journal. - 1996. - Vol. 53, No. 1-2. - P. 31-37. [in Ukrainian]

Green Book of Ukraine / Edited by Ya.P. Didukh - Kyiv: AlterPres, 2009. - 448 p. [in Ukrainian]

Kolomiychuk V.P. Notes on the flora of vascular plants of the Azov Sea coastal zone / V.P. Kolomiichuk / ed. by T.L. Andrienko - Kyiv: AlterPres, 2012. - 300 p. [in Russian]

Kolomiychuk V.P. Flora of the shores of Molochnyi Liman / V.P. Kolomiychuk, S.N. Podorozhnyi // Biological Bulletin of Melitopol State Pedagogical University named after Bohdan Khmelnytskyi. - 2013. - No. 2 (8). - P. 128-135. [in Russian]

Korotchenko I.A. Species of flora of Ukraine in the database of the International Union for the Conservation of Nature (IUCN) / I.A. Korotchenko, S.L. Mosyakin // Plant World in the Red Book of Ukraine: Implementation of the Global Strategy for the Plant Conservation / Proceedings of the 3d international scientific conference (June 4-7, 2014, Lviv). - Lviv, 2014. - P. 42-47. [in Ukrainian]

Protopopova V.V. Invasive plants in the flora of the northern part of the Black Sea region / [Protopopova V.V, Shever M.V, Mosyakin S.L. et al]. - Kyiv: Phytocentre, 2009. - 56 p. [in Ukrainian]

Red Data Book of Ukraine. Plant World /Ed. by Ya.P. Didukh - Kyiv: Global consulting, 2009. - 900 p. [in Ukrainian]

Yarovy S.O. Wetland of international importance Molochyi Liman / Yarovy SO, Diadicheva O.A., Demchenko V.O., Antonovsky O.G. // Monitoring of the wetland of international importance. Methods and results: Proceedings of the workshop "Organization and results of wetland monitoring in Ukraine" (March 4-6, 2014, Odessa). - Odessa, 2014 - 126-134. [in Ukrainian]

#### 6.1.2 - Additional reports and documents

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

<no file available>

##### 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:



Molochnyi Liman ( V. Tkachenko, 23-06-2020 )



Molochnyi Liman ( Natalia Suriadna , 15-05-2019 )



Molochnyi Liman ( Natalia Suriadna , 15-07-2019 )

#### 6.1.4 - Designation letter and related data

##### Designation letter

<1 file(s) uploaded>

Date of Designation