Supplementary Material

1 Key search terms used for PC species and habitat presence in legal documents

1.1 Pontocaspian species

Supplementary Table 1. Pontocaspian invertebrate groups, approximate number of PC species within each group (depending on author interpretations) and list of the parent genus names. Genus names listed here are used as key terms for the analysis to search for the PC species presence in the identified legal documents (Supplementary Tables 2 and 3). These names are known for Danube Delta and include both, currently accepted but also unaccepted terms, which have been used by different authors in the last decade.

PC groups †	Number	Reference	PC genus names
	of species		
Cnidaria	2-4	(Mordukhay-	Cordylophora, Moerisia, Odessia, Polypodium
		Boltovskoy, 1960)	
Hyrudinea	1	(Mordukhay-	Archaeobdella
		Boltovskoy, 1960)	
Polychaeta	3	(Mordukhay-	Hypania, Hypaniola, Manajunkia
		Boltovskoy, 1960)	
Gastropoda	12	(Wesselingh et al.,	Theodoxus, Neritina, Caspia, Clathrocaspia, Laevicaspia,
		2019)	Pyrgula, Euxinipyrgula, Turricaspia, Clessiniola
Bivalvia	6	(Wesselingh et al.,	Adacna, Monodacna, Hypanis, Dreissena
		2019)	
Amphipoda	40-45	(Mordukhay-	Gammarus, Dikerogammarus, Pontogammarus,
		Boltovskoy, 1960)	Echinogammarus, Obessogammarus, Stenogammarus,
			Niphargoides, Niphargogammarus, Chaetogammarus,
			Iphigenella, Cardiophilus, Gmelina, Amathilina, Gmelinopsis,
			Turkogammarus, Corophium, Chelicorophium, Kuzmelina
Mysidae	10	(Audzijonyte et al.,	Paramysis, Katamysis, Limnomysis, Hemimysis
		2008)	
Decapoda	2	(Policar et al.,	Pontastacus, Astacus
		2018)	
Isopoda	1	(Mordukhay-	Jaera
		Boltovskoy, 1960)	
Copepoda	12	(Monchenko, 2003)	Halicyclops, Schyzopera
Cladocera	4-5	(Mordukhay-	Cercopagis, Evadne
		Boltovskoy, 1960)	
Cumacea	11	(Mordukhay-	Pterocuma, Stenocuma, Pseudocuma, Schizorhynchus
		Boltovskoy, 1960)	
Acari	1	(Mordukhay-	Caspiahalacarus
		Boltovskoy, 1960)	-
		<u> </u>	

[†] We exclude Turbellaria, parasitic worms, Ostracoda, Bryozoa and Oligochaeta, because there is no common agreed understanding among specialists which species in these groups are Pontocaspian relics.

1.2 Pontocaspian habitats

Optimum PC habitats, defined by Gogaladze et al. (2021) contain following habitat types from the EUNIS habitat classification (https://eunis.eea.europa.eu/):

- 1. A2: Littoral sediment
- 2. C1.2: Permanent mesotrophic lakes, ponds and pools
- 3. C2.32: Metapotamal and hypopotamal streams
- 4. C2.41: Brackish water tidal rivers
- 5. C2.42: Freshwater tidal rivers (within low reaches of large rivers and estuaries in Ukrainian and Romanian sectors of Black and Azov seas)
- 6. X01: Estuaries
- 7. X03: Brackish coastal lagoons

We searched for these habitat types in identified legal documents to check for presence of PC habitats. Additionally, we searched in the identified legal documents for the following key words: "Pontocaspian", "Ponto-caspian", "Ponto", "lagoon", "liman", "estuary", "stream", "lake", "river", "coastal", "transitional", "freshwater", "brackish", "oligohaline", "mesohaline" and "anomalohaline".

2 Supplementary Figures and Tables

Supplementary Table 2. Pontocaspian biodiversity legal landscape.

Legal framework	Relevance	Website
Global targets and assessments		
Millennium Development Goals (MDGs)/Sustainable Development Goals (SDGs)	MDG 7 – Achieve environmental sustainability. SDG 14 – Life below water.	https://www.un.org/millenniumgoals/ https://sdgs.un.org/goals
World Ocean Assessment (WOA)	Workshop on the North Atlantic, Baltic Sea, Black Sea, Mediterranean Sea and North Sea.	https://www.un.org/regularprocess/woa2l aunch
Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)	Regular assessments of knowledge on biodiversity and ecosystem services at global level.	https://ipbes.net/
International Conventions relevant for biodiversity conservation	ı	
Convention on Biological Diversity (CBD)	Aichi Biodiversity Targets; Strategic Plan for Biodiversity 2011 – 2020; National Biodiversity Strategies and Action Plans (NBSAPs).	https://www.cbd.int/ https://www.cbd.int/sp/targets/
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	Lists threatened species (App. I) and species requiring international agreement to conserve (App. II).	https://www.cms.int/
Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Lists species to protect endangered plants and animals from overexploitation.	https://cites.org/eng
Convention for the Protection of the World Cultural and Natural Heritage (WHC)	Protects habitats included in the World Natural Heritage list.	https://whc.unesco.org/en/
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention)	The 9th Meeting of the Conference of the Parties, Resolution IX.1 Annex E identified coastal tidal flats, rivers and streams as priority areas to receive increased attention to improve integrated wetland inventory, assessment and monitoring.	https://www.ramsar.org/
Regional and European Conventions relevant to Pontocaspian b	iodiversity conservation	
Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)	Lists strictly protected (Annexes I and II) and protected species (Annex III) of European wild flora and fauna. Bern Convention has the key role in establishing a network of protected areas in non-EU countries (Emerald network).	https://www.coe.int/en/web/bern-convention
Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO Convention)	Sets out obligations to parties to assess weather proposed activities will likely have a significant transboundary impact, including on protected species and habitats.	https://unece.org/fileadmin/DAM/env/eia/eia.htm
Danube River Protection Convention (DRPC)	Provides the legal instrument for transboundary water management in the Danube River Basin.	https://www.icpdr.org/main/icpdr/danube -river-protection-convention
Convention on the Protection of the Black Sea against Pollution (Bucharest Convention)	Addresses biodiversity conservation in its provisions. The inventories of biological and habitats diversity in the document are updated every 5 years.	http://www.blacksea- commission.org/_convention.asp
EU Directives and instruments		

Supplementary Material

Birds Directive (2009/147/EC, former 79/409/EEC)	Protects wild bird species that naturally occur in the EU.	https://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm
Habitats Directive (92/43/EEC)	Ensures the conservation of rare, threatened and endemic animal and plant species and habitats of the EU. Plays the key role in setting up an EU network of protected areas (Natura 2000 Network).	https://ec.europa.eu/environment/nature/ legislation/habitatsdirective/index_en.ht m
Water Framework Directive (2000/60/EC)	Ensures the integrated management of water resources at river basin level.	https://ec.europa.eu/environment/water/water-framework/index_en.html
Marine Strategy Framework Directive (2008/56/EC)	Aims to protect the EU marine environment. Lists priority species and taxonomic groups.	https://ec.europa.eu/environment/marine/ eu-coast-and-marine-policy/marine- strategy-framework- directive/index_en.htm
Wildlife Trade Regulations	Lists species to protect endangered plants and animals from overexploitation on EU level. Wildlife Trade Regulations is an EU level implementation of CITES.	https://ec.europa.eu/environment/cites/le gislation_en.htm
Cross Border Cooperation (CBC)	Supports biodiversity conservation in a cross-boundary context.	https://ec.europa.eu/neighbourhood- enlargement/european-neighbourhood- policy/cross-border-cooperation_en
LIFE Programme	The LIFE Programme is a funding instrument of EU for biodiversity conservation and climate action.	https://cinea.ec.europa.eu/life_en

Supplementary Table 3. National laws and resolutions of Romania and Ukraine related to Pontocaspian biodiversity conservation.

Romania (RO)		Ukraine (UA)	
Laws and regulations	Description	Laws and Regulations	Description
Government Emergency Ordinance No. 195/2005 on environmental protection, approved by Law no. 265/2006 and last updated on 22/12/2007 https://lege5.ro/Gratuit/hazdinrs /ordonanta-de-urgenta-nr-195- 2005-privind-protectia- mediului?d=2020-08-24	This normative act was adopted as a matter of urgency to fulfill the requirements of the EU in the process of integration and regulates environmental protection in Romania. This emergency ordinance is the basis of subsequent environmental legislation.	The Act of Ukraine on the protection of environment (1991, No. 41). https://zakon.rada.gov.ua/laws/show/1264-12	The act defines the overall legal environmental framework and is very important for all the environmental activities. It briefly discusses biodiversity conservation in general terms (including aquatic living resources) through the prevention of economic activities from nature reserves and objects which are subject to special protection, such as those listed in the Red Book of Ukraine.
NA	NA	Law of Ukraine on the Main Principles (Strategy) of the State Environmental Policy of Ukraine for the period up to 2020 (2010, No. 2818-VI).	The law aims to stabilize and improve the ecological conditions in Ukraine through the integration of environmental values and concerns into the development strategies of different sectors. Target 5 of the law, specifically addresses the loss of

NA	NA	https://zakon.rada.gov.ua/laws/sho w/2818-17#Text Law on the Red Book of Ukraine (2002, No. 3055-III). https://zakon.rada.gov.ua/laws/sho w/3055-14#Text	biological and landscape diversity and aims at conserving rare and endemic biological species in compliance with the EU regulations. The objective of the law is to regulate public relations regarding the conservation, utilization and reproduction of rare and endangered species of flora and fauna listed in the Red Book of Ukraine, with the purpose of preventing the extinction of such species from nature and ensuring the preservation of species and genetic diversity. This law itself does not list species.
NA	NA	Law on Fauna (2001, No. 2894-III). https://zakon.rada.gov.ua/laws/sho w/2894-14#Text	The law ensures the protection of wildlife by the establishment of the rules and standards for protection and rational use of wildlife objects; the creation of ecological network and state reserves as well as the identification of new areas (which are subject to special protection); development and implementation of conservation programs and action plans for the species included in the Red Book of Ukraine.
Government Emergency Ordinance No. 236/2000 on the regime of protected natural areas, conservation of natural habitats, wild flora and fauna (http://legislatie.just.ro/Pu blic/DetaliiDocument/25339), approved with modifications and completions by Law no. 462/2001 (http://legislatie.just.ro/Public/D etaliiDocument/29936) and its Annexes No. 2, 3, 4 and 5 updated by Order No. 1198 of the 25th of November 2005. In 2007, this legal act was repealed and replaced by the Government Emergency Ordinance no. 57/2007.	This emergency ordinance aims to guarantee the conservation and sustainable use of the natural heritage by regulating the conservation of biological diversity by conserving natural habitats; national protected area categories, natural habitat types and establishment and management of national protected areas, among others. The Emergency Ordinance lists natural habitats whose conservation requires the declaration of special conservation areas in Annex 2, Annex 3 is a continuation of Annex 2 for the establishment of the network of special conservation areas and lists the plants and animals whose conservation requires the designation of special areas of conservation. Furthermore, Annexes 4 and 5 list the species of community importance that require strict protection.	Law on the Ukraine Nature Reserve Fund (1992, No. 2456-XII; amended in January 2010) https://zakon.rada.gov.ua/laws/show/2456-12#Text	The law defines the legal basis for the organization, protection and effective use of the nature reserve fund of Ukraine, which includes the biosphere reserves and national nature and landscape parks, among others.

http://legislatie.just.ro/Public/D etaliiDocument/25339?noCache =1471046400023			
NA	NA NA	Law on Ecological Network of Ukraine (2004, No. 1864-IV). https://zakon.rada.gov.ua/laws/sho w/1864-15#Text	Ecological network is built on the foundations provided by the existing protected areas including the Emerald Network. Among others, the ecological networks include the territories that are habitats of species of fauna and flora listed in the Red Data Book of Ukraine. The law provides the framework for formation and management of ecological networks. The legal basis for the formation of the national ecological network are the laws of Ukraine "On the protection of the environment" (1264-12), "On the nature reserve fund of Ukraine" (2456-12), "On the animal world" (3041-12), "On flora world "(591-14), Land Code of Ukraine (561-12), Forest Code of Ukraine (3852-12) and Water Code of Ukraine (213/95-BP).
Governmental Emergency Ordinance No. 57/2007 regarding the management of protected areas and the conservation of natural habitats and wild flora and fauna (http://legislatie.just.ro/Public/D etaliiDocument/83289) approved by Law No. 49 of April 7, 2011 (http://legislatie.just.ro/Public/D etaliiDocumentAfis/127715)	This emergency ordinance transposes the Habitats Directive into the national Romanian laws and shapes the policies concerning the protected areas. On the date of entry into force of this Emergency Ordinance the Government Emergency Ordinance no. 236/2000 shall be repeated. The Emergency Ordinance lists the priority habitats in Annex 2 and propriety species in Annexes 3, 4A, 4B, 5A, 5B, 5C, 5D and 5E as a cornerstone for conservation.	Protected Areas Act (last amended December 2010): The main framework for the governance, conservation and effective use of protected areas in Ukraine	This act provides a legal base for establishing and managing protected areas. Also, it establishes a classification of protected areas in Ukraine.
Forest Code - Law No. 46/2008 (updated in 2016). http://legislatie.just.ro/Public/D etaliiDocumentAfis/227177	The Forest Code regulates not only forested lands, but also water bodies within the forests and the associated biodiversity.	Forest Code of Ukraine (1994, No. 3852-XII. Last amended in December 2010). https://zakon.rada.gov.ua/laws/show/3852-12#Text	The Forest Code covers not only forested lands, but all lands supervised by the State Agency of Forest Resources, which include many wetlands and certain agricultural lands.

Water Law No. 107/1996	This law regulates the use, conservation and protection of water resources, including the coastal ecosystems of the Black Sea and Danube Delta.	Water Code (1995, No. 213/95-VR. last amended in December 2010). https://zakon.rada.gov.ua/laws/show/213/95-%D0%B2%D1%80#Text	The Water Code defines roles and responsibilities of state institutions in water management, briefly mentioning that waters found within protected areas are thereby protected.
NA	NA	Land Code of Ukraine (2002, No. 2768-III). https://zakon.rada.gov.ua/laws/show/2768-14#Text	The Land Code ensures rational land use and protection of lands. It divides all the land into nine categories, including a category "water lands" which is relevant to PC biodiversity.
Law No. 292 of December 3, 2018 on assessing the impact of certain public and private projects on the environment. http://legislatie.just.ro/Public/DetaliiDocumentAfis/208590	This law regulates the environmental impact assessment of public and private projects that may have significant effects on the environment. Namely, on biodiversity, paying special attention to protected species and habitats in accordance with the provisions of Government Emergency Ordinance no. 57/2007, approved with amendments and completions by Law no. 49/2011, with subsequent amendments and completions.	Law of Ukraine on environmental impact assessment (No. 2059-VIII, 2017) https://zakon.rada.gov.ua/laws/show/2059-19#Text	The law provides framework for environmental impact assessments (EIAs) that apply to new projects that may have adverse impacts on the environment.
Governmental Emergency Ordinance No. 23/2008 on the fisheries and aquaculture. http://legislatie.just.ro/Public/D etaliiDocument/90207	This Emergency Ordinance is a general regulatory framework under which a secondary legislation is issued related to the fisheries sector. It regulates the conservation and exploitation of living water resources in the Black Sea and Danube Delta by laying down measures concerning the organizational and administrative responsibilities related to fishing, control and observance of legislation, responsibilities and sanctions and scientific research in the field. This Emergency Ordinance was issued for swift adoption of the EU legal framework in accordance to the Community Fisheries Policy.	NA	NA
Law No. 192 of 19 April 2001 on fish stocks, fisheries and aquaculture. http://legislatie.just.ro/Public/D etaliiDocumentAfis/46009	Regulates fishing periods and duration in different areas in Romania, including Danube Delta and Razim-Sinoe complex. In Annex 2 the law lists species which are prohibited to catch. Annex 4 lists the minimum dimensions of the fish, mollusk, amphibian (e.g., frogs) and crustacean species that can be fished in Romanian waters.	Law No. 3677 of 2011 on Fishery, Industrial Fishery and Protection of Water Biological Resources. https://zakon.rada.gov.ua/laws/sho w/3677-17#Text	This law defines the basic principles of activity and state regulation in the field of fisheries, conservation and rational use of aquatic bioresources, the order of relations between public authorities, local governments and economic entities engaged in fishery activities in inland water bodies of Ukraine, inland marine waters and territorial sea.
Order No. 545/715/2016 on measures to restore and conserve sturgeon populations in natural fish habitats https://lege5.ro/Gratuit/geydknr vgm2a/ordinul-nr-545-715-2016-privind-masurile-de-refacere-si-conservare-a-	This order aims to conserve sturgeon populations in natural waters from threats and to develop sturgeon aquaculture.	Law No. 5293-VI of 2013 about aquaculture. https://zakon.rada.gov.ua/laws/show/5293-17#Text	This law defines the basic principles of development and functioning of aquaculture and provides the legal basis for the activities of executive authorities and local governments in the field of aquaculture. Sturgeons are briefly mentioned in the law.

populatiilor-de-sturioni-din- habitatele-piscicole-naturale			
Law No. 82/1993 on the establishment of the "Danube Delta" Biosphere Reserve (http://legislatie.just.ro/Public/D etaliiDocument/3259) Law No. 136/2011 for the amendment and completion of Law no. 82/1993 on the establishment of the "Danube Delta" Biosphere Reserve (http://legislatie.just.ro/Public/D etaliiDocumentAfis/130379)	The Danube Delta Biosphere Reserve was established, as an area of national and international ecological importance, which includes the following physical-geographical units: Danube Delta, Murighiol - Plopu salt marshes, Razim-Sinoe lagoon complex, Maritime Danube Cotul Pisicii, the Isaccea-Tulcea sector with the flood zone, the Black Sea coast from Braţul Chilia to Capul Midia, the inland maritime waters and the territorial sea up to the isobath of 20 m.	Decree of the President of Ukraine No. 861 of 1998 (https://ips.ligazakon.net/document/view/u861_98?an=1&ed=2004_02_02). Decree of the President of Ukraine No. 117 of 2004 on the expansion of the Danube Biosphere Reserve (https://zakon.rada.gov.ua/laws/show/117/2004#Text)	The Danube Biosphere Reserve was established by the Decree of the President of Ukraine "On the establishment of the Danube Biosphere Reserve". In 2004 Danube Biosphere Reserve was expanded by the Decree of the President of Ukraine (No. 117) in Odessa region at the expense of lands of Kiliya and Tatarbunary districts.
Governmental Ordinance No. 763/2015 for the approval of the Management Plan and of the Regulation of the Biosphere Reserve "Danube Delta" (http://legislatie.just.ro/Public/DetaliiDocumentAfis/171986)	Management Plan of the Danube Delta Biosphere Reserve is an Annex of this legal act, in which all the species and habitats that are protected in the Reserve are mentioned. So are the measures for the biodiversity conservation.	NA	NA

Supplementary Table 4. Pontocaspian invertebrate species listed in the identified legal documents (Supplementary Tables 2 and 3).

		UN Conventions		European Union Regio		Regional		Romania		Ukraine	
	Species	Bern	CITES and CMS	Habitats Directive	EU Wildlife Trade regulation	IUCN European Region	Bucharest Convention (RO; UA)	Emergency Ordinance no 57/2007	Law. No. 192/2001	Law No. 3055-III	
Amphipoda	Dikerogammarus villosus	-	-	-	-	-	VU (VU; VU)	-	-	-	
	Echinogammarus trichiatus Martynov, 1932 (as Chaetogammarus ischnus major)	-	-	-	-	-	VU (-;-)	-	-	-	
	Niphargogammarus intermedius (as Niphargoides intermedius in RBDU)	-	-	-	-	-	-	-	-	DD	
	Iphigenella acanthopoda	-	-	-	-	-	VU (-; VU)	-	-	DD	
	Kuzmelina kusnezowi	-	-	-	-	-	-	-	-	DD	
	Lanceogammarus andrussovi (as Iphigenella andrussovi in BSRDB and RDBU)	-	-	-	-	-	LR (NE; LR)	-	-	DD	

	Shablogammarus chablensis (as Iphigenella shablensis in BSRDB and RDBU)	-	-	-	-	-	VU (-;-)	-	-	DD
Bivalvia	Adacna fragilis (as Hypanis laeviuscula in RBDU)	-	-	-	-	-	-	Present	-	VU
	Dreissena bugensis	-	-	-	-	LC	-	-	-	-
	Dreissena polymorpha	-	-	-	-	NA¥	-	-	-	-
	Monodacna colorata	-	-	-	-	-	-	Present	-	-
	Hypanis plicata	-	-	-	-	-	-	Present	-	VU
Cnidaria	Odessia maeotica (as Moerisia maeotica in BSRDB and RDBU)	-	-	-	-	-	VU (EN; VU)	-	-	DD
Decapoda	Astacus pachypus (as Pontastacus pachypus in IUCN database)	-	-	-	-	DD	-	-	-	EN
Gastropoda	Clathrocaspia knipowitchii (as Caspia knipowitchii in EURL and RDBU)	-	-	-	-	LC	-	-	-	EN
	Laevicaspia ismailensis (as Turricaspia ismailensis in EURL)	-	-	-	-	VU B1ab(iii)	-	-	-	-
	Theodoxus danubialis (as Theodoxus prevostianus in EU Habitats Directive and Emergency Ordinance no 57/2007)	-	-	Present	-	LC	-	Present	-	-
	Theodoxus fluviatilis	-	-	-	-	LC	-	-	-	-
	Turricaspia dimidiata	-	-	-	-	DD	-	-	-	-
	Clessinola variabilis (as Turricaspia variabilis in EURL)	-	-	-	-	DD	-	-	-	-
	Laevicaspia lincta (as Turricaspia lincta in EURL and Euxinipyrgula lincta in RDBU)	-	-	-	-	LC	-	-	-	VU
Hirudinea	Archaeobdella esmonti	-	-	-	-	-	-	-	-	EN
Mysida	Katamysis warpachowskyi	-	-	-	-	-	EN (NE; EN)	-	-	DD
	Hemimysis anomala	-	-	-	-	-	EN (NE; EN)	-	-	Excluded

^{*}According to EU IUCN list of non-marine mollusks "species were considered to be Not Applicable (NA) if they were judged to be of marginal occurrence in the region. Species were regarded as of marginal occurrence if it was estimated that less than 1% of their global range lies within Europe and if the European populations are not disjunct of the main species range".

Supplementary Table 5. Pontocaspian sturgeon species listed in the identified legal documents (Supplementary Tables 2 and 3).

		UN Conventions		EU		Regional		Romania		Ukraine
	Species	Bern	CITES and CMS	Habitats Directive	EU Wildlife Trade regulation	IUCN (EU)	Bucharest Convention (RO; UA)	Emergency Ordinance No. 57/2007	Law. No. 192/2001	Law No. 3055-III
Sturgeons	Acipenser nudiventris	-	Present in CMS	Present	-	CR	-	Present	Present	EX

Acipenser ruthenus	Present	Present in CMS	Present	-	VU	-	Present	Present	EN
Acipenser sturio	Present	Present in CMS and CITES	Present	Present	CR	1	Present	Present	EX
Acipenser gueldenstaedtii	-	Present in CMS	Present	-	CR	VU (VU; VU)	Present	Present	VU
Acipenser stellatus	Present	Present in CMS	Present	-	CR	VU (VU; VU)	Present	Present	VU
Huso huso	Present	Present in CMS	Present	-	CR	-	Present	Present	EN

Supplementary Table 6. International regional and national protected areas that cover parts of the PC habitats in the Danube Delta. Percentages of PC habitats that fall within protected areas are reported in Table 2. For visual display see Fig. 4.

Administrative level	Designation type	Site name	Site ID	Area (km2)	PC habitats covered (see Gogaladze et al., 2021)	Management Plan	Country
Global	World Heritage Site (natural or mixed)	Danube Delta	67728	3124.4	Most of the PC habitats in Romania	Not Reported	RO
Global	Ramsar Site	Danube Delta	68147	6470	Most of the PC habitats in Romania	Management plan is implemented and available	RO
Global	IBA	Lake Beibugeac (Plopu)	RO084	2.4	Floodplain lakes south to Sf. Gheorghe branch	NA	RO
Global	IBA	Black Sea	RO082	1429.55	Sakhalin area and Musura Bay	NA	RO
Global	IBA	Danube Delta	RO081	5155.8	Most of the PC habitats in Romania	NA	RO
Global	IBA	Beştepe - Mahmudia	RO083	42.9	Floodplain lakes south to Sf. Gheorghe branch	NA	RO
Global	Ramsar Site	Kartal Lake	166896	5	Northern floodplain lakes west of Izmail	Management plan is not implemented and not available	UA
Global	Ramsar Site	Kugurlui Lake	166898	65	Kugurlui Lake	Management plan is not implemented and not available	UA
Global	Ramsar Site	Kyliiske Mouth	166899	328	Chilia branch and outer delta lakes downstream from Vilkovo	Management plan is not implemented but is available	UA

Global	Ramsar Site	Sasyk Lake	166904	210	Sasyk Lake	Management plan is not implemented and not available	UA
Global	UNESCO-MAB Biosphere Reserve	Dunaisky	220032	464.03	Chilia branch and outer delta lakes downstream from Vilkovo and Chilia branch of Danube River, upstream from Vilkovo	Not Reported	UA
Global	IBA	Sasyk lake	UA085	228	Sasyk lake	NA	UA
Global	IBA	River Danube	UA082	25	A stretch of the River Danube, Chilia branch, near Kiliya town	NA	UA
Global	IBA	Stentsivs'ko- Zhebriyanivs'ki plavni	UA084	420	Chilia branch of Danube River, upstream from Vilkovo	NA	UA
Global	IBA	Kugurluj and Kartal lakes	UA081	192	Kugurluj and Kartal lakes	NA	UA
Global	IBA	Kytaj lake	UA083	50	Kytaj lake	NA	UA
Global	IBA	Kagul lake	UA080	105	Kagul lake	NA	UA
European	Site of Community Importance (Habitats Directive)	Delta Dunării	ROSCI0065	4532.0526	Most of the PC habitats in Romanian part of the Danube Delta	Present	RO
European	Site of Community Importance (Habitats Directive)	Delta Dunării - zona marină	ROSCI0066	3357.2249	Sakhalin area and Musura Bay	Present	RO
European	Special Protection Area (Birds Directive)	Beştepe - Mahmudia	ROSPA0009	36.5133	Floodplain lakes south to Sf. Gheorghe branch	Present	RO
European	Special Protection Area (Birds Directive)	Delta Dunării și Complexul Razim - Sinoie	ROSPA0031	5078.2463	Most of the PC habitats in Romanian part of the Danube Delta	Present	RO
European	Special Protection Area (Birds Directive)	Lacul Beibugeac	ROSPA0052	4.6861	Floodplain lakes south to Sf. Gheorghe branch	Present	RO
European	Special Protection Area (Birds Directive)	Marea Neagră	ROSPA0076	1489.7589	Sakhalin area and Musura Bay	Present	RO
European	Special Protection Area (Birds Directive)	Lacul Brateș	ROSPA0121	158.7484	Lake Brates	Absent	RO
European	Emerald Network	Danube Biosphere Reserve	UA0000018	501.27	Bistroe Channel of the Danube Delta and upper tip of Lake Sasyk	Absent	UA

Supplementary Material

European	Emerald Network	Izmailski Ostrovy	UA0000182	35.43	Kiliya Branch of Danube River and lake Lung located near town Izmail	Absent	UA
European	Emerald Network	Systema Dunaiskykh Ozer	UA0000142	526.58	Lakes Kagul, Kugurlui, Yalpug, Katlabukh and Kitai.	Absent	UA
European	Emerald Network	Sasyk Lyman	UA0000151	189.51	Lake Sasyk	Absent	UA
National	Nature Reserve	Ostrovul Prut	183971	0.82	Danube River Braila-Tulcea (small part close to Galati)	Not reported	RO
National	Nature Reserve	Călugăru - Iancina	193264	1.37	Lake Razim-Golovita (small coastall part)	Not reported	RO
National	Nature Reserve	Dealurile Beștepe	193266	3.48	Floodplain lakes south to Sf. Gheorghe branch	Not reported	RO
National	Nature Reserve	Enisala	193267	0.62	Floodplain lakes south to Sf. Gheorghe branch	Not reported	RO
National	Natural Park	Parcul Natural Lunca Joasă A Prutului Inferior	196473	81.08	Lake Brates; small part of the Danube River (close to Galati)	Not reported	RO
National	Scientific Reserve	Insulele Prundu Cu Păsări	392158	1.86	Part of Lake Razim-Golovita	Not reported	RO
National	Scientific Reserve	Insula Ceaplace	392159	1.18	Part of Lake Razim-Golovita	Not reported	RO
National	Nature Reserve	Corbu - Nuntași - Histria	9388	18.03	Coastal lakes near Lake Sinoe	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Complexul Sacalin Zătoane	11184	190.54	Sakhalin area	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Roșca - Buhaiova	31702	92.99	Floodplain lakes between Chilia and Sulina branches	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Pădurea Letea	31703	24.47	Floodplain lakes between Chilia and Sulina branches	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Grindul Şi Lacul Răducu	31704	27.12	Floodplain lakes between Chilia and Sulina branches	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Lacul Nebunu	31705	1.36	Floodplain lakes between Chilia and Sulina branches	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO

National	Nature Reserve	Pădurea Caraorman	31706	22.57	Floodplain lakes between Sulina and Sf. Gheorghe branches	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Complexul Vătafu - Lunguleț	31707	15.68	Floodplain lakes between Sulina and Sf. Gheorghe branches	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Complexul Periteașca - Leahova	31708	41.55	Lake Leahova	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Sărăturile Murighiol	31709	1.01	Floodplain lakes south to Sf. Gheorghe branch	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Arinişul Erenciuc	31710	0.3	Small coastal part of Sf. Gheorghe branch of Danube River	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Insula Popina	31711	0.89	Small part of Lake Razim	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Capul Doloşman	31713	1.03	Small coastal part of Lake Razim	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Grindul Lupilor	31714	21.45	Part of Lake Razim-Golovita	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Grindul Chituc	31717	24.94	Coastal lakes near Sinoe	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Lacul Potcoava	183474	7.28	Floodplain lakes between Sulina and Sf. Gheorghe branches	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Lacul Belciug	183475	1.12	Floodplain lakes south to Sf. Gheorghe branch	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	Nature Reserve	Cetatea Histria	183476	4.33	Part of Lake Sinoe	Management measures included in Management plan of the Danube Delta Biosphere Reserve	RO
National	National Biosphere Zapovednik	Dunaiskiy /Danube Delta	160873	464.02	Chilia branch and outer delta lakes downstream from Vilkovo and Chilia branch of Danube River, upstream from Vilkovo	Not reported	UA

3 References

- Audzijonyte, A., Daneliya, M.E., Mugue, N., and Väinölä, R. (2008). Phylogeny of Paramysis (Crustacea: Mysida) and the origin of Ponto-Caspian endemic diversity: resolving power from nuclear protein-coding genes. *Molecular Phylogenetics and Evolution* 46, 738-759. doi: 10.1016/j.ympev.2007.11.009.
- Gogaladze, A., Son, M.O., Lattuada, M., Anistratenko, V.V., Syomin, V.L., pavel, A.B., popa, O.P., popa, L.O., Poorten, J.-J.t., Biesmeijer, J.C., Raes, N., Wilke, T., Sands, A.F., Trichkova, T., Hubenov, Z.K., Vinarski, M.V., Anistratenko, O.Y., Alexenko, T.L., and Wesselingh, F.P. (2021). Decline of unique Pontocaspian biodiversity in the Black Sea Basin: a review. *Ecology and Evolution* 11, 12923-12947. doi: 10.1002/ece3.8022.
- Monchenko, V.I. (2003). Free-living cyclopoid copepods of Ponto-Caspian basin. Kiev: Naukova dumka, 1-350. [in Russian].
- Mordukhay-Boltovskoy, F. (1960). Kaspiyskaya fauna v Azovo-Chernomorskom basseyne. *Izdatel'stvo Akademii Nauk SSSR, Leningrad*, 228 pp. [in Russian].
- Policar, T., Bondarenko, V., Bezusyj, O., Stejskal, V., Kristan, J., Malinovskyi, O., Imentai, A., Blecha, M., and Pylypenko, Y. (2018). Crayfish in central and southern Ukraine with special focus on populations of indigenous crayfish Astacus pachypus (Rathke, 1837) and their conservation needs. *Aquatic Conservation: Marine and Freshwater Ecosystems* 28, 6-16. doi: 10.1002/aqc.2798.
- Wesselingh, F.P., Neubauer, T.A., Anistratenko, V.V., Vinarski, M.V., Yanina, T., ter Poorten, J.J., Kijashko, P., Albrecht, C., Anistratenko, O.Y., D'Hont, A., Frolov, P., Gandara, A.M., Gittenberger, A., Gogaladze, A., Karpinsky, M., Lattuada, M., Popa, L., Sands, A.F., Velde, S.v.d., Vandendorpe, J., and Wilke, T. (2019). Mollusc species from the Pontocaspian region an expert opinion list. *ZooKeys* 827, 31-124. doi: 10.3897/zookeys.827.31365.