ICPDR IKSD

International Commission for the Protection of the Danube River

Internationale Kommission zum Schutz der Donau

Danube in your Pocket

Flora & Fauna

Fringed Water Lily

Nymphoides peltata is a perennial, rooted plant with floating leaves. It prefers nutrient-rich waters with slow currents and clay substrate. It is rare in the Danube, but can be found in its typical habitat, the slow-flowing Danube in the section before the Iron Gate.

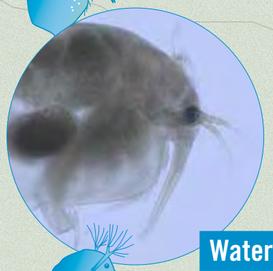
Greater Water-Moss

Fontinalis antipyretica is a species of submerged aquatic moss that is very common in the Upper Danube. It grows in large clumps and provides shelter for fish eggs and benthic macroinvertebrates.

Vimba Bream

Vimba vimba, an inconspicuous fish found in the Danube, has a silvery appearance and a distinct nose-like upper lip similar to the nase fish, but darker in color. During spring, it migrates in large shoals up the tributaries for spawning. At this time, ***Vimba vimba*** displays a magnificent coloration.

Water Flea



***Bosmina* sp.** is a planktonic crustacean that filters algae and protozoans, which are single-cell microrganisms. To avoid fish predation, they perform daily vertical migrations, moving about 15 meters. They stay in deeper areas during the day and rise to the upper layers of lakes and ponds at dawn.

Perch

Perca fluviatilis exhibits interesting social behaviour. Juveniles of this species tend to live in groups or shoals, while adults prefer a solitary lifestyle. They are easily identifiable by their distinct dark stripes and the prominent black spot located at the end of the first dorsal fin.

Moon Wing Caddisfly

Limnephilus lunatus, a caddisfly species that derives its name from the moonlike pattern found on its wing tip (luna = moon). This caddisfly is widespread and can be found colonizing different types of water bodies in wetland areas, ranging from ponds abundant in macrophytes to gently flowing channels. Their larvae thrive among riparian vegetation, making it an integral part of these ecosystems.

Donau
Ulm
Ingolstadt
Main-Donau Kanal
Naab
Regensburg
Lech
Augsburg
München
Isar
Inn
Passau
Linz
Wien
Praha
Svratka
Brno
Dyje
Thaya
Neusiedler See / Fertő tó
Rabnitz
Innsbruck
Salzburg
Salzach
Traun
Enns
Mur
Drau
Graz
Raab
Sava
Maribor
Drava
Mura

Water-Measurer

Hydrometra stagnorum is a water bug known for its unique hunting strategy. This predatory bug feeds on small creatures like springtails. It has adapted to live on the surface of stagnant freshwater, such as wetland ponds, by utilizing the surface tension of water. With its elongated legs, it gracefully walks on the water's surface. Its thin, stick-like body and slow movements make it challenging to detect, allowing it to remain inconspicuous as it hunts.

Sisters of the Butterflies

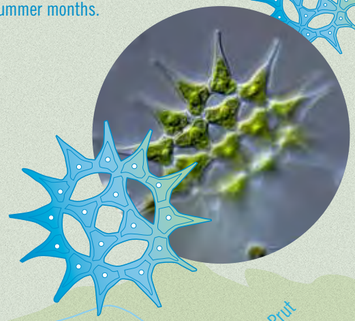
Polycentropus flavomaculatus, a caddisfly species that bears a resemblance to moths, due to its wings covered in delicate hairs. Interestingly, they are closely related to butterflies. The larvae of this species reside underwater and exhibit a fascinating behaviour: they construct silken nets, which they use to capture aquatic organisms and gather organic particles from the water. This unique adaptation helps them thrive in their aquatic habitat.

Northern Pike

Esox lucius is a skilled ambush predator that patiently hides amidst water plants, perfectly blending in with its surroundings, to await its prey. Once an opportunity arises, this predator swiftly captures its target with lightning speed. Even the young Northern Pike can be easily identified by their streamlined, torpedo-shaped body, large mouth, and distinctive speckled pattern.

Phytoplankton

A group of microscopic algae that are unable to propel themselves against water currents, and drift with them. Among them is the star-shaped ***Pediastrum simplex***, which belongs to the green algae family. Green algae are the second most common type of algae found in the Danube River's phytoplankton community. These algae are known for their vibrant green chloroplasts and are particularly abundant during the summer months.



Nase

Chondrostoma nasus, once a highly abundant fish in the Upper Danube, is a unique vegetarian species that feeds by scraping plant growth from the riverbed. Its name originates from the nose-like shape of its upper lip. This migratory fish forms large swarms during spawning, which typically occurs in the tributaries of the Danube. Unfortunately, the presence of river obstructions often hinders their successful reproduction and migration.

Flowering Rush

Butomus umbellatus is a perennial plant that grows in lakes, riparian zones, watercourses, wetlands and marshes. It can grow in water depths of up to 2 meters, but when it grows in shallow water or on wet river banks, it produces beautiful white-pink flowers.

Morava
Olomouc
March
Bratislava
Dunaj
Váh
Nitra
Hron
Ipeľ
Ipoly
Rába
Győr
Duna
Budapest
Répce
Rábca
Zala
Balaton
Sió
Székesfehérvár
Sajó
Hernád
Miskolc
Zagyva
Tisza-tó
Hortobágy-Berettyó
Kettős-Körös
Hármas-Körös
Bodrog
Tisza
Nyíregyháza
Slaná
Hornád
Košice
Laborec
Latorica
Szamos
Satu Mare
Someș
Baia Mare
Barcău
Crișul Negru
Crișul Repede
Cluj-Napoca
Crișul Alb
Mureș
Tisa
Prut
Siret
Moldava
Suceava
Somesul Mare
Târnava

Sava
Zagreb
Kolpa
Česma
Kupa
Una
Sava
Sana
Banja Luka
Vrbas
Bosna
Pécs
Osijek
Brčko
Bijeljina
Kanal Dunav/
Tisa Dunav
Tisa
Novi Sad
Dunav
Mureș
Arad
Timișoara
Plovni Begej
Timiș
Tamiš
Sava
Beograd
Velika
Morava
Dunav
Drobeta-
Turnu Severin
Timok
Sarajevo
Drina
Piva
Lim
Podgorica
Ibar
Zapadna
Morava
Južna Morava
Nišava
Nishava
Adriatic
Sea

Longleaf Pondweed

Potamogeton nodosus is a plant rooted in soft sediment and produces both submerged and floating leaves of different shapes. The inflorescence is a spike with many small flowers protruding from the water on a stalk. It lives in rivers and lakes.

Spinning Silk

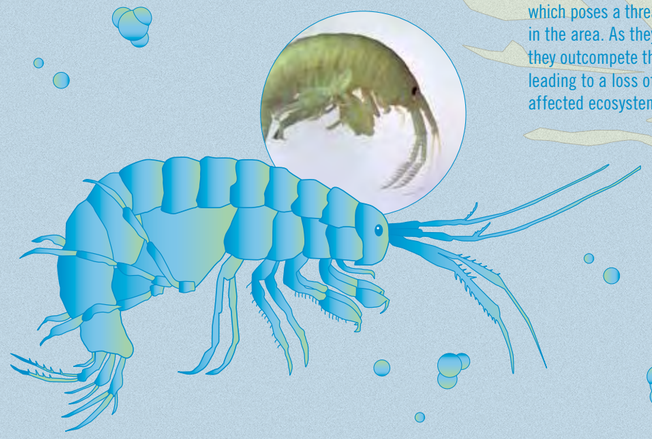
Brachycentrus subnubilus, a common caddisfly, a mothlike insect also found in the Danube River, is known for its fascinating behaviour. These caddisflies create protective cases using detritus and silk, attaching them to stable surfaces. With their thorny legs, covered in bristles or spines, they filter and collect small particles from the water. In spring, they undergo metamorphosis, transforming into adults. During this time, large groups of adult caddisflies can be seen emerging from their cases.

Barbel

Barbus barbus, a common river fish, is characterized by its bottom-dwelling behaviour and four barbels, which help it locate food. During spring, it migrates up the Danube tributaries to spawn. Females of this species are typically larger in size and can often be observed surrounded by multiple males at the spawning grounds.

“Killer” Shrimp

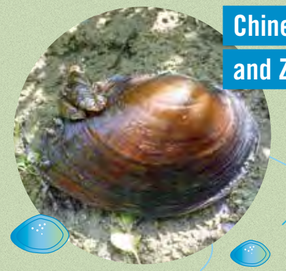
Dikerogammarus villosus, commonly known as the “Killer” Shrimp, is an invasive species originally from the Black Sea region that has spread and established itself in large rivers across Central Europe. These shrimps are relatively large and extremely competitive, which poses a threat to native crustaceans in the area. As they thrive and multiply, they outcompete the native species, leading to a loss of biodiversity in the affected ecosystems.



Water-Milfoil

Myriophyllum spicatum is sporadically found throughout the Danube, tolerating both fast-flowing and stagnant water. It prefers nutrient-rich but not heavily polluted water. In summer it sprouts flower spikes that grow out of the water.

Chinese Pond Mussel and Zebra Mussel



Sinanodonta woodiana and ***Dreissena polymorpha***, the Chinese Pond Mussel and Zebra Mussel, are neozoans. The Chinese Pond Mussel arrived via grass carp from China, while the Zebra Mussel came through ship ballast water from Southern Russia. Both are filter-feeders that can impact and lower nutrient levels. The Zebra Mussel poses economic challenges, forming large masses and obstructing pipes and tubes, which can cause issues in various industries and infrastructure where water flow is critical.

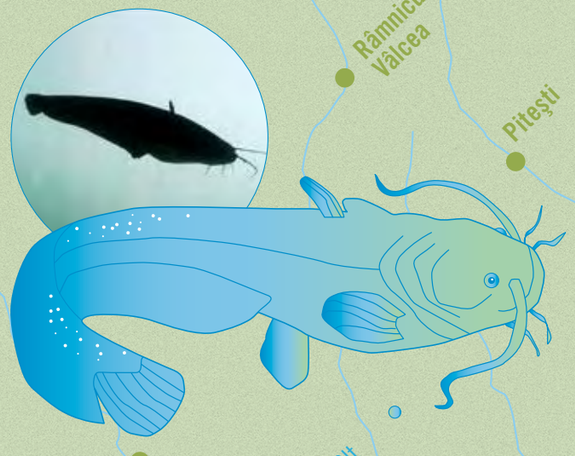
Phytobenthos

Diatoms are tiny, single-cell algae producing oxygen. They live on the bottom of streams, stagnant waters, as well as on flooded parts of riverbanks and submerged objects in the water. When diatoms grow abundantly, they form a captivating sight resembling an “ancient forest” with multiple layers. So, what does this underwater forest actually look like? Well, initially, submerged surfaces become home to bacteria that create a slimy layer.

Diatoms play a crucial role in forming the first level of the underwater floor as they attach themselves to various surfaces. As they compete for light, a second level begins to form. This level is composed of diatoms that grow on long slime stalks, diatoms within slime tubes, and filamentous algae, including green algae. Additionally, there are diatoms and other algae species that move freely in the river’s water. These intricate growth formations also provide shelters for small aquatic animals.

European Catfish

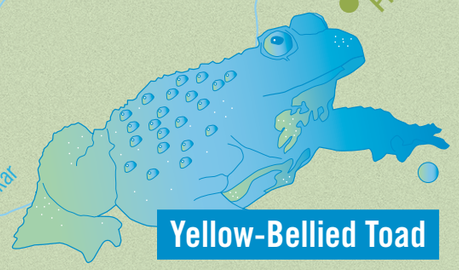
Silurus glanis, known as Europe's largest freshwater fish, it can grow to lengths exceeding 2 meters. During the day, it seeks shelter under coverings such as fallen trees or vegetation. This remarkable fish also exhibits parental care by laying and protecting its eggs in plant nests until they hatch.



Purple Loosestrife

Lythrum salicaria is one of the most colourful aquatic plants in the Danube. It prefers moist soil and grows on riverbanks and in wetlands. Bees like to visit its flowers where they collect nectar and pollen.

Yellow-Bellied Toad



Bombina variegata, the Yellow-Bellied Toad, camouflages with its olive-grey appearance that allows it to blend into its surroundings, aided by its warty skin. These warts serve a purpose, as they produce a toxin. Unfortunately, the population of this species is declining in Central Europe primarily due to the loss of its specific habitat – small temporary puddles. Despite their potential lifespan of up to 23 years, wetland fragmentation and climate change threaten their survival.

Introducing the Extraordinary Flora and Fauna of the Danube River Basin

Discover the remarkable diversity of life that thrives within the Danube River Basin through our captivating map. Designed to engage and educate the general public, our map showcases the extraordinary flora and fauna that call this unique ecosystem home.

As you explore the map, you will embark on a journey through breathtakingly beautiful landscapes, from the lush wetlands to the meandering riverbanks. Discover the rich tapestry of plant, fish and other aquatic species that paint vibrant colors across our beautiful Danube.

Whether you are a nature enthusiast, a curious explorer, or simply someone who appreciates the wonders of the natural world, this map will captivate your imagination and highlight the importance of preserving this invaluable treasure for generations to come.

Are you ready to make a difference? Then embark with us on this visual journey and immerse yourself in the flora and fauna of the Danube River Basin. And let this map be your guiding light as you embark on your journey towards a cleaner, healthier, and safer Danube.

Together, let's create a brighter future for the Danube River Basin and all who depend on its vibrant aquatic biodiversity!

Explanation Text:

The diverse flora and fauna depicted on this map can be found geographically throughout the waters of the Danube and its tributaries. These species have established their presence in various regions, spanning the expansive network of waterways within this ecosystem. From the source to the mouth of the Danube and its interconnected rivers, the depicted flora and fauna represent the rich biodiversity that thrives across these aquatic environments.

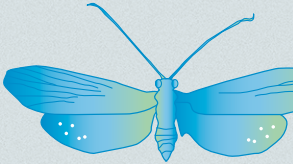
Taxonomy is a scientific field that deals with classifying and organizing living organisms by their similarities and differences. It's a way of categorizing species into different groups at various levels. For example, let's consider the Yellow-Bellied Toad. It belongs to the following groups: Kingdom Animals, Phylum Chordata, Sub-Phylum Vertebrata (animals with backbones), Class Amphibia, Order Anura (which includes frogs), Family Bombinatoridae, Genus *Bombina*, and Species *variegata*. Taxonomy helps us understand the relationships and characteristics of different organisms by placing them in these distinct categories.

An organism's **scientific name** consists of two levels: genus and species. When referring to organisms in scientific publications, it is common to include the name abbreviation of the first person to describe the species and the year of its discovery. For example, the scientific name of the Yellow-Bellied Toad is *Bombina variegata* LINNAEUS, 1758. This naming convention helps to uniquely identify and differentiate specific species and provides important historical information about their initial description and discovery.

Acknowledgements:

We would like to express our heartfelt gratitude to the numerous contributors who have dedicated their time and expertise to make this project a reality. Their collective efforts have brought the captivating flora and fauna of the Danube River Basin closer to the people who call themselves Danubians. It is through their passion, knowledge, and commitment that we have been able to shed light on the remarkable biodiversity that exists within our beloved river system. We extend our sincere appreciation to each and every individual who has played a part in this endeavour, as their contributions have truly enriched our understanding and appreciation of the natural wonders that thrive in and along the Danube and its tributaries.

Danube in your Pocket – the Extraordinary Flora and Fauna of the Danube River Basin



Publishing Coordination: Hélène Masliah-Gilkarov (ICPDR)
Technical Coordination:
Wolfram Graf (BOKU Vienna), Franz Wagner (BML) & Igor Liska (ICPDR)

Scientific Advisor, Fish: Daniel Pelz (BOKU Vienna)
Scientific Advisor, Macroinvertebrates: Wolfram Graf (BOKU Vienna)
Scientific Advisors, Phytobenthos:
Jarmila Makovinska, Lucia Sochuliakova (VUVH, Bratislava)
Scientific Advisor, Macrophytes & Phytoplankton:
Igor Stanković (Josip Juraj Strossmayer Water Institute, Croatia)
Cartography Advisor: Zoran Major (ICPDR)

Layout & Illustrations: Barbara Lewall
Printing: Hans Jentzsch & Co GmbH

Images: Michael Franzen (Yellow-Bellied Toad), Wolfram Graf (macroinvertebrates), Jarmila Makovinska (phytobenthos), Daniel Pelz (fish), Lucia Sochuliakova (phytobenthos), Igor Stanković (macrophytes & phytoplankton).

Published by ICPDR – International Commission for the Protection of the Danube River
secretariat@icpdr.org

www.icpdr.org

Funded by:

Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection