



"I cannot imagine my personal and professional life without wetlands, they are a reward and a stimulus for the challenging work of conservation."

Eva Hernandez Herrero - member of the Water-SG

The Water Specialist Group (Water-SG)

The Water Specialist Group is one of the five Specialist Groups that make up the MedWet/STN. It comprises 10 experts from 7 countries in complementary disciplines and practices, who advise on different aspects of water resources management in a wetland context.

The first kind of knowledge the Water-SG is contributing to **consolidating and summarizing its on Environmental Flows⁽ⁱ⁾**, namely the volumes, timing, and quality of surface and groundwater needed to sustain the different types wetlands in the Mediterranean.

The SG-Water (in conjunction with SG-Ecosystem Services⁽ⁱⁱ⁾) also reviews available examples of Mediterranean wetlands performing functions of natural infrastructure in the provision of water services such as storage, supply and purification.

To know more about the MedWet/STN and its Specialist Groups :

<http://bit.ly/MedWetSTN>

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Water in Mediterranean wetlands

Environmental flows for Mediterranean wetlands

Water is the essential component of wetlands, whether they are temporary or permanent. It defines their extent and other characteristics such as their seasonal occurrence, in line with the hydrological cycle of the watershed in which they are found, or the groundwater resources with which they are connected.

As part of the hydrological cycle, wetlands are essential for human health and prosperity. They are key providers of freshwater and in good health they can remove significant amounts of nutrients from the water, maintaining healthy wetlands therefore secures water supply and relieving wastewater management. Unfortunately, these habitats are under pressure and their decline is rapid in the Mediterranean Region. When human needs compete with the environmental needs of wetlands, this translates into increasingly rare and poor-quality water resources. As a result, the mobilisation of the Mediterranean Region has been evident through a growing number of Ramsar designations and national policies for wetlands.

Yet major gaps in information on the vital link between wetlands and water remain. This has triggered establishment by the **Mediterranean Wetland Initiative (MedWet)** of the Water Specialist Group on the

integrity of the hydrological cycle as part of its **Scientific and Technical Network (MedWet/STN/SG/Water)**.

Water for Mediterranean wetlands

Environmental flow assessments⁽ⁱ⁾ have been carried out for certain river stretches of the world. However, it is especially important to also determine the environmental water requirements of less studied wetlands such as temporary marshes and ponds, wet meadows, riparian woodlands, estuaries, and intertidal flats. Knowledge on environmental flows is a key element for watershed level planning, wetland inventories and ecosystem valuations.

Current water use of agriculture is far out of sustainable limits and future scenarios that take into account both the impacts of climate change and current agricultural development paths project an increase in water use for irrigation^{1,2}. Although many take this estimation as a given, this only further increases the problem, whereas examples also exist of how food production can continue to increase while environmental water availability is assured³. To achieve this measures include increases in water use efficiency, stricter protection of natural freshwater habitats and adaptation of production systems.

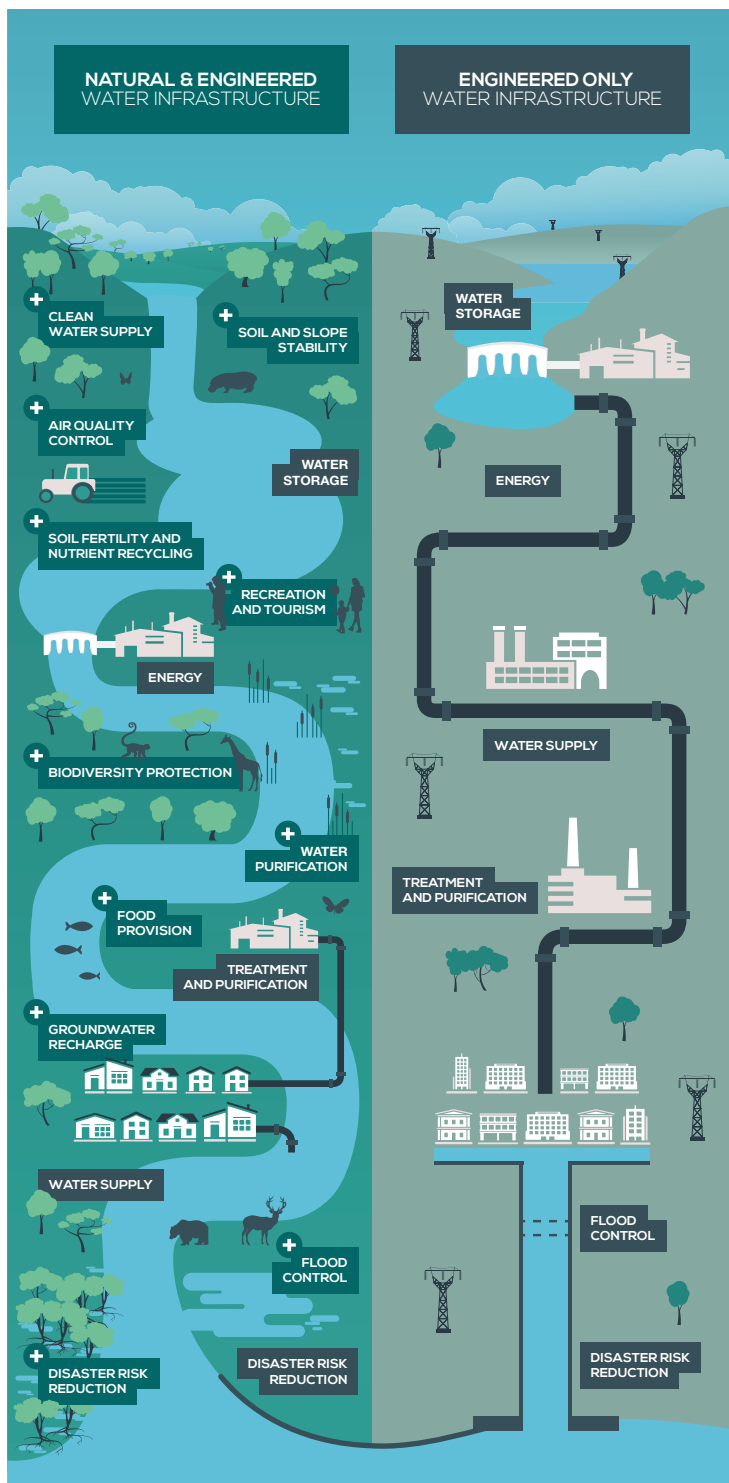


Figure 2: Working with natural infrastructure optimises engineered infrastructure.
Source: @UCN_Water

Mediterranean wetlands: natural infrastructure for water

Together wetlands form a natural infrastructure which, besides preserving water resources for domestic, industrial and agricultural consumption, also mitigates the effects of floods and coastal storms and purifies polluted water. It is therefore important that assessments of ecosystem services from Mediterranean wetlands value the ecosystem servicesⁱⁱ⁾ provided by wetlands as their built or engineered infrastructure equivalent when focusing on water-related services.

Valuing the ecosystem services that wetlands provide acknowledges the role they are already playing in maintaining very important waterflows or water quality, whereas it can also render more visible another potential role they could play: supporting built or engineered infrastructure to deliver some of those water-related services instead of only being affected negatively and sustaining an overall reduction in services. In this way, while keeping socioeconomic values in mind, conservation and restoration priorities can be better defined.

Ultimately, the methods and tools stemming from the work in the MedWet/STN are also expected to improve watershed-level planning, including through the quantification of pressures from different water uses as well as of the benefits for other water uses. This is an area where adequate and geographically comprehensive or consistent reporting and indicators have been lacking.

1. Malek, Z., Verburg, P.H., Geijzendorffer, I.R., Bondeau, A., Cramer, W. (2018) Global change effects on land management in the Mediterranean region. *Global Environmental Change* 50: 238-254

2. Fader, M., Shi, S., Bloh, W. V., Bondeau, A., & Cramer, W. (2016). Mediterranean irrigation under climate change: more efficient irrigation needed to compensate for increases in irrigation water requirements. *Hydrology and Earth System Sciences*, 20(2), 953-973.

3. Strzepek, K., & Boehlert, B. (2010). Competition for water for the food system. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1554), 2927–2940. <http://bit.ly/2vyCkIS>

Data on extent, flow and quality have been a key part of the first set of water indicators in the Mediterranean Wetland Outlook. Supported by the Water Specialist Group, the Mediterranean Wetland Observatory (MWO) is currently updating this list of water indicators for Mediterranean wetlands based on data resources that can be regularly monitored such as international databases, widely recognised models, and new remote sensing approaches.