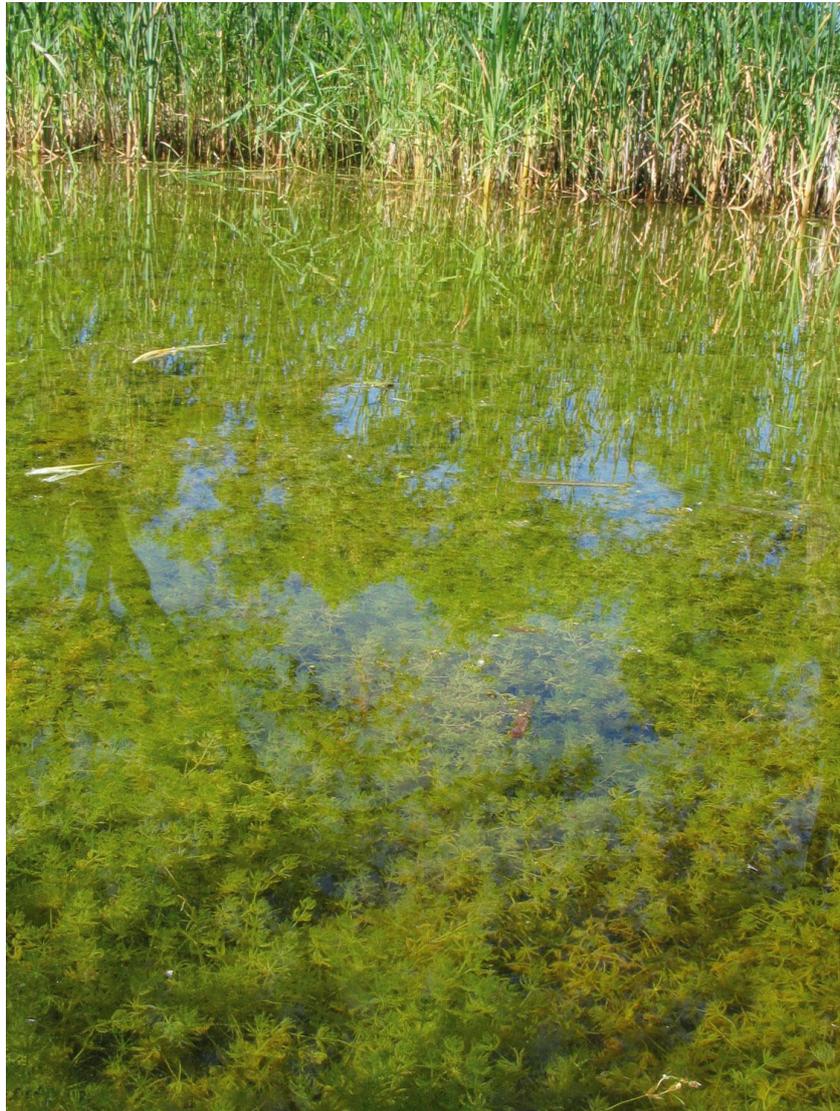


Natura 2000 habitat 3140 : Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.



Habitat 3140 consists of unpolluted water bodies whose bottoms are covered with charophyte algal carpets. These algae are called stoneworts, systematically classified in the family Characeae and the genera Chara and Nitella. Although stoneworts are not vascular plants, their structure is highly complex. Typical is their unpleasant smell of hydrogen sulfide.

We find such algal carpets in lakes and pools of two kinds : 1) with waters fairly rich in dissolved bases (pH often 6-7) or 2) with mostly blue to greenish, very clear waters, poor (to moderate) in nutrients and base-rich (pH often >7,5).

Stoneworts can be pioneer colonizers as their spores can survive a long time (dozens of years) in the soil and are mostly spread by birds. They can be short-lived and ephemeral, but also more stable vegetations occur if the ecological situation permits it. In these algal carpets often no other water plants occur. If the water conditions worsen for the stoneworts other water plants can come in, creating in case another habitat.

Where to find it?

These algal carpets grow submerged forming so-called benthic vegetations on the bottoms of water bodies, sometimes several metres deep. We can find habitat 3140 in most European countries from Finland to Portugal and from Ireland to Greece.

Typical species :

The following typical plants are mentioned in the European habitat description :

- algae of the genus *Chara*
(e.g. hedgehog stonewort-*Chara aculeolata*, bristly stonewort-*Chara hispida* and convergent stonewort-*Chara connivens* are present in Belgium)
- algae of the genus *Nitella*

But short-lived more common pioneer species of more nutrient rich waters are not an indication of habitat 3140



convergent stonewort - *Chara connivens* (photo Jo Packet)

Typical animals :

- whirligig beetles (family Gyrinidae)
- a genus of crawling water beetles (genus *Haliphus*)



starry stonewort - *Nitellopsis obtusa* (photo Willem Kolvoort)

Management and threats

Habitat 3140 is usually found in low to medium nutrient-rich, clear water and tends to disappear due to eutrophication. For this reason management is mostly directed to conserve an optimum water quality : no pollution nor fertilisation. The shores of these waters are best without trees, as too much fallen leaves in these waters disturb this habitat. Putting fish in these waters has to be avoided, for sure species which disturb the silt layer making the water cloudy. For the same reason recreation (boats, swimmers) can disturb this habitat. Sometimes this habitat is endangered by pesticides.

It can be necessary to clean these waters periodically from too much silt, as stoneworts are pioneer species. The effect of the wind can be enough to avoid silt accumulation and keep this habitat in a good condition. As the water cannot be too acid it can be necessary to let in clean, base-rich water. As stoneworts cannot survive when the water body dries out enough water of good quality is crucial.

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