

Charophytes in North Rhine-Westfalia (Germany) - distribution and protection

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1 Distribution

Charophytes have been systematically investigated in North Rhine-Westphalia since the early 1990s. Approximately 130 people have contributed data and this resource has been supplemented by review of herbarium material and the scientific literature. To-date, a total of 1690 data sets have been stored in a database. A total of 21 species of Charophytes have been recorded from North Rhine-Westphalia. The most common species are *Chara vulgaris*, *C. globularis* and *Nitella flexilis*, whilst the following species are relatively uncommon: *Chara contraria*, *C. delicatula*, *Nitella mucronata*, *N. opaca*. All other species are extremely or very rare.

In North Rhine-Westphalia, Charophytes are typically found in natural and semi-natural water bodies such as lakes, gravel pits, heathland ponds, ox-bows, rivers and streams, as well as ponds e. g. water collected in tank tracks, water-filled pits, dams and fish ponds.

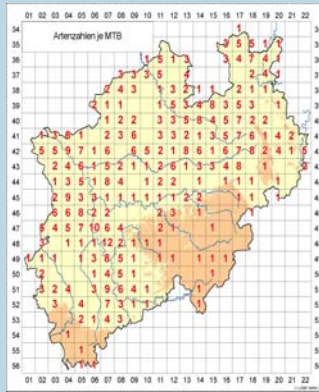


Fig. 1: Number of species of Charophytes in North Rhine-Westphalia per grid map (11,5 km x 11,5 km, 2002)

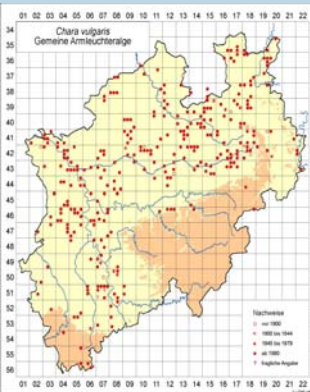


Fig. 2: Distribution of *Chara vulgaris*, most common Chara-species in North Rhine-Westphalia (2002)

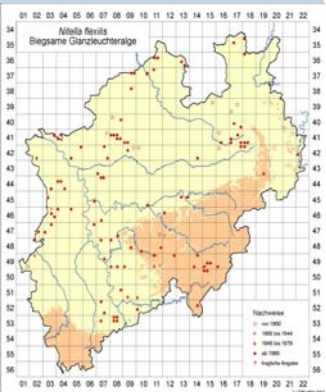


Fig. 3: Distribution of *Nitella flexilis*, most common *Nitella*-species in North Rhine-Westphalia (2002)

2 Red List

The first Red List of the Charophytes of North Rhine-Westphalia was published in 1999. At that time 19 species were listed. Only two; *Chara globularis* and *Chara vulgaris*, were considered „abundant“, both throughout Germany and in North Rhine-Westphalia. However, these species are threatened in some areas, such as the highlands of North Rhine-Westphalia. Three species are listed as „vulnerable“ in North Rhine-Westphalia; three as „endangered“ and nine are considered „critical“. Two species, *Chara intermedia* and *Tolypella intricata*, are considered „extinct“. However the latter was re found in 2000. Two new species for the region: *Chara braunii* and *Tolypella glomerata*, were recorded in 2002 and 2003.

	Germany	NRW	NRTL	NRBU	WB/WT	WEBGL	EVSG	SÜBGL
1 <i>Chara aspera</i>	2+	1	1	0	1	0	1	-
2 <i>Chara contraria</i>	3+	3	-	3	3	2	-	2
3 <i>Chara delicatula</i>	3+	3	3	2	3	2	-	-
4 <i>Chara globularis</i>	+	+	*	0	*	3	1	2
5 <i>Chara hispida</i>	2-	1	1	0	1	0	-	-
6 <i>Chara intermedia</i>	2	0	-	-	0	-	-	-
7 <i>Chara polyacantha</i>	1	2	-	1	2	1	-	-
8 <i>Chara vulgaris</i>	+	+	*	*	*	3	3	3
9 <i>Nitella capillaris</i>	1	1	1	0	1	-	-	-
10 <i>Nitella flexilis</i>	3+	3	3	2	3	2	2	3
11 <i>Nitella gracilis</i>	2+	1	0	1	1	0	1	1
12 <i>Nitella mucronata</i>	3+	2	2	2	2	1	-	1
13 <i>Nitella opaca</i>	2	2	1	-	2	1	1	-
14 <i>Nitella syncarpa</i>	2+	1	0	-	1	-	-	-
15 <i>Nitella tenuissima</i>	1	1	0	0	1	0	-	-
16 <i>Nitella translucens</i>	2+	1	1	1	1	-	-	-
17 <i>Nitellopsis obtusa</i>	3+	1	1	-	0	-	-	-
18 <i>Tolypella intricata</i>	1	0	-	-	0	-	-	?
19 <i>Tolypella prolifera</i>	1	1	1	0	-	-	-	-
found in 2002/2003								
20 <i>Chara braunii</i>	1	-	-	-	x	-	-	-
21 <i>Tolypella glomerata</i>	1	-	x	-	x	-	-	-

IUCN-categories: 0 = extinct, 1 = critical, 2 = endangered, 3 = vulnerable, * = abundant species, + = regional more threatened

NRW: North Rhine-Westphalia
Regions of North Rhine-Westphalia: NRTL: Niederrheinisches Tiefland, NRBU: Niederrheinische Bucht, WB/WT: Westfälische Bucht/Westf. Tiefland, WEBGL: Weserbergland, EVSG: Eifel/Siebengebirge, SÜBGL: Süderbergland

Tab. 1: Red List of Charophytes of North Rhine-Westphalia (1999)



Fig. 4: *Nitella opaca*, endangered species in North Rhine-Westphalia, found in gravel pits and pools



Fig. 5: *Chara braunii*, for the first time recorded in fish ponds near Münster (Westphalia) in 2003

3 Protection

To date there have been no nature conservation measures in NRW devoted specifically to Charophytes. Nevertheless, some measure of success has already been recorded. Various conservation programmes have led to the creation of numerous small water bodies, which have proven beneficial to Charophytes. In spite of this, additional measures are required such as the careful removal of mud deposition. During the implementation of NATURA 2000 several areas, including some gravel pits, were registered as „hard oligo-mesotrophic waters with benthic vegetation of chara formations“. The results of the project are intended for publication as a handbook of Charophyte protection in NRW. This volume will describe the distribution of the species, give details of their ecology and list concrete measures for their conservation and protection. The handbook will also include a new identification key.

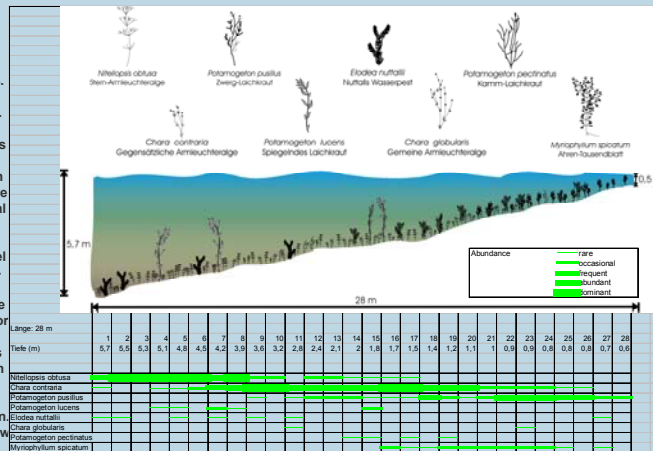


Fig. 6: Transect (5,7-0,6 m depth) by scuba-diving in a gravel pit with big stands of *Nitellopsis obtusa* and *Chara contraria*



Fig. 7: *Nitellopsis obtusa*



Fig. 8: Scuba diver collecting Charophytes

4 Literature

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see also: www.lanaplan.de/makrophyten/

Informations about Charophytes in North Rhine-Westphalia: distribution maps, plant communities, determination key (in German)