

SPECIES INFORMATION SHEET

Furcellaria lumbricalis

English name: Black carageen or Brabs bed	Scientific name: <i>Furcellaria lumbricalis</i>	
Taxonomical group: Class: Florideophyceae Order: Gigartinales Family: Furcellariaceae	Species authority: (Hudson) J.V.Lamouroux 1813	
Subspecies, Variations, Synonyms: <i>Furcellaria fastigiata</i> (Turner) J.V.Lamouroux 1813 <i>Furcellaria fastigiata</i> f. <i>aegagropila</i> Reinke 1889 (special unattached form of the Balticf)	Generation length: 4–6 Years (Austin et al. 1960a, b)	
Past and current threats (Habitats Directive article 17 codes): –	Future threats (Habitats Directive article 17 codes): –	
IUCN Criteria: –	HELCOM Red List Category:	LC Least Concern
Global / European IUCN Red List Category NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: <u>Denmark</u> –/–, <u>Estonia</u> –/–, <u>Finland</u> –/–, Germany 3 (Vulnerable), part of a §30 biotope (Federal Nature Conservation Act), Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/LC		

Distribution and status in the Baltic Sea region

Furcellaria lumbricalis is a widespread and rather common species in most areas of the Baltic Sea. In the north, the distribution area extends to the Quark and the Gulf of Finland where it reaches at least to the Finnish/Russian border. In the northern Baltic Sea the abundance of the species appears to have been rather stable. In Sweden and Estonia there are no observed trends, except for an increasing trend in Askö area in Sweden. In Estonia the floating form is also abundant enough to be harvested. In more southern Baltic Sea, declines have been evidenced in many areas (Germany, Poland, and Lithuania) but they mostly took place already more than or approximately 30 years ago. In the most recent decades, the overall trend has been more or less stable or increasing. In Kaliningrad region, Lithuania and Latvia, there are places where the species can be found drifted ashore. However, the species is obviously rare in these areas and e.g. in the Kaliningrad region only one population is known with no historical data and no knowledge on possible trends.



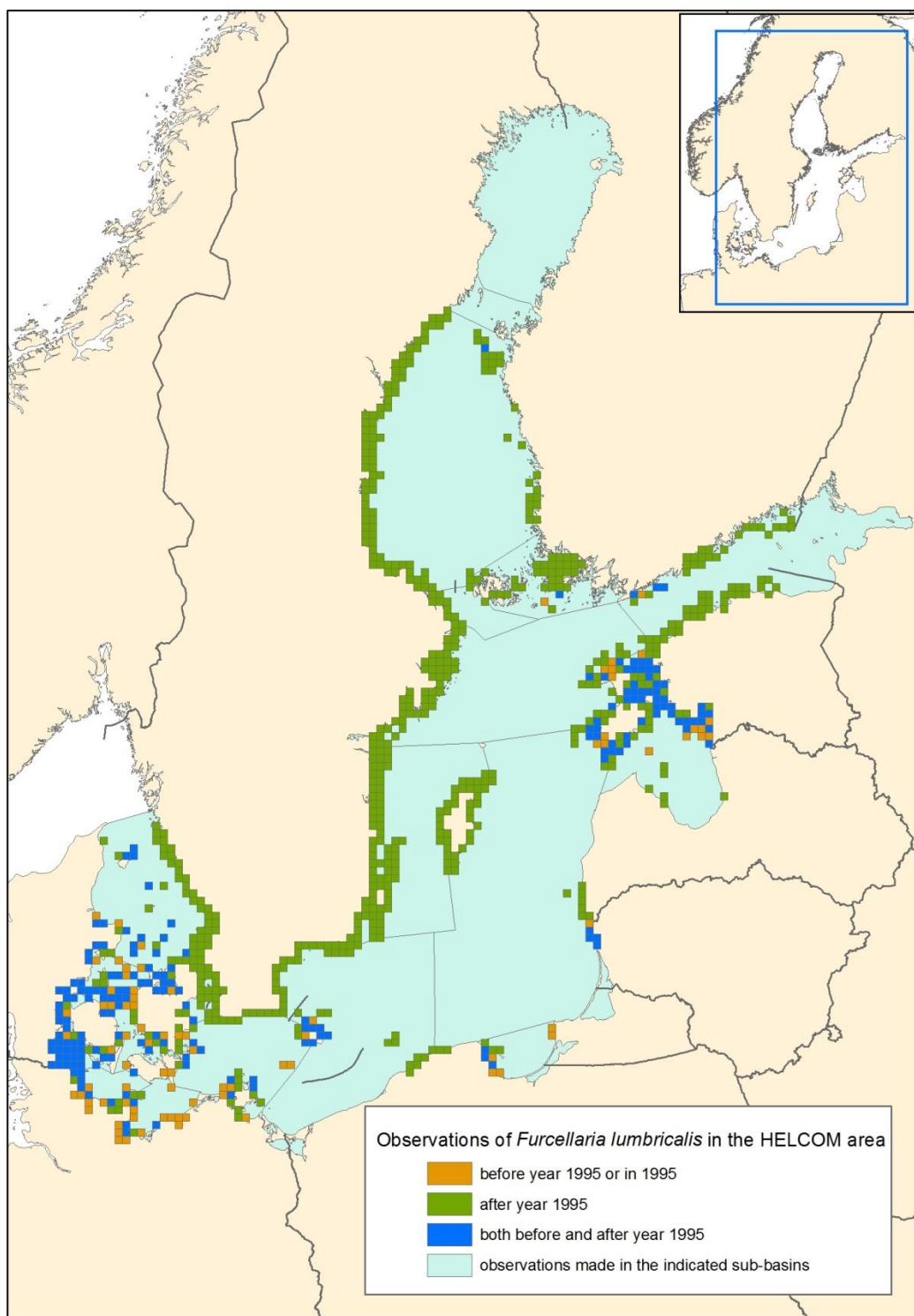
Furcellaria lumbricalis. Photos by Karin Fürhaupter, MariLim Aquatic Research GmbH.

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Distribution Map

The records of species compiled from the Danish national database for marine data (MADS), the database of Estonian Marine Institute (EMI), the German database for macrophyte occurrences (MARIDATA), Finnish and Polish monitoring data and literature, and Swedish Species Gateway (www.artportalen.se). For the Swedish coastline the continuous distribution area is mainly based on expert view.



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Habitat and Ecology

Furcellaria lumbricalis grows in its typical form epilithic on stable hard substrates such as stony bottoms, boulder fields and rocks. It is a perennial macroalgae with a life-span of 5–10 years (www.marlin.ac.uk) and a marine species, which can grow in salinities down to 3 psu. It grows only sublittoral and occurred in the Western Baltic historically between 3 and 30 m with its main occurrence between 8 and 12 m. Due to reduced water transparency the vertical depth distribution shifted upwards with the upper limit being already at 1–2 m and the lower limit around 8–10 m. At present, the vertical main occurrence lies between 3–5 m in the Western Baltic, whereas in the Eastern Baltic it is between 3–9 m. The lower depth limit is used as an indicator for the ecological status in the EU Water Framework Directive (WFD) in several countries. *Furcellaria lumbricalis* forms monotypic dense meadows in its central and northern Baltic distribution area where most of the other perennial red algae are not able to sustain due to the low salinity. It grows under *Fucus vesiculosus* within the *Fucus* belt and forms part of the red algal belt below the *Fucus* belt.

Meadows existed historically in the Western Baltic in such abundance that it was planned to harvest the species for carrageen production (Hoffmann 1952). At present the species appears to have been substituted in the Western Baltic by other perennials (e. g. *Coccotylus truncatus*, *Delesseria sanguinea* or *Phycodrys rubens*) or annual filamentous species and the distribution area has been strongly reduced during the 1970s and 1980s.

The unattached form *Furcellaria fastigiata* f. *aegagropila* can be found on soft bottom (sand to muddy sand) in very sheltered bays, lagoons and inlets. It coexists with the characteristic rooted vegetation of bays and lagoons (e.g. *Ruppia* spp. *Zannichellia palustris*, *Potamogeton pectinatus*, *Zostera* spp. and several charophytes) and serves as an important habitat for invertebrates. In some countries, abundances are very high and the species is used economically.

It is assumed that the species has sexual reproduction up to Gotland. North of Gotland there is very little information on the species reproduction mode but probably the most common population regeneration form is fragmentation of thallus and reattachment of fragments to hard substrates.

Description of major threats

Not a threatened species at the scale of the whole Baltic Sea. Local and regional historic declines have been caused by e.g. habitat destruction (stone fishing on the German and Poland coast) and decreasing water transparency due to eutrophication.

Assessment justification

F. lumbricalis is a widespread, common and abundant species. However, it was included in the previous HELCOM list of threatened and/or declining species (HELCOM 2007). The extent of occurrences (EOO) is estimated to 658 000 km². The area of occupancy (AOO) exceeds very clearly the threshold given in the criteria (4 000 km²). For generation time the reference from www.marlin.ac.uk is used to be sure that the evaluated time-period is long enough. Population reductions have been reported from all riparian countries but declines occurred in historical times (more than 30 years ago). During the last 10 years, there appears to be no overall trend. However, a lot of its former distribution area has been lost in the southern Baltic Sea in Kiel Bay and Mecklenburg Bay. The species is categorized as Least Concern (LC).

Recommendations for actions to conserve the species

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Common names

Denmark: gaffeltang, Estonia: agaric, Finland: haarukkalevä, Germany: Gabeltang, Latvia: –, Lithuania: –, Poland: widlik zastrzony, Russia: –, Sweden: kräkel

References

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- Bucas M., 2009. Distribution patterns and ecological role of the red alga *Furcellaria lumbricalis* (Hudson) J.V. Lamouroux off the exposed Baltic Sea coast of Lithuania. Doctoral degree theses in ecology and environmental studies at Klaipeda University. Klaipeda, 124 p.
- Blinova, E.I. & Tolstikova, N.E., 1972. Stocks of commercial agar-reach algae *Furcellaria fastigiata* (Huds.) J. V. Lam. in the coast of Lithuania. *Rastitelnye Resursy* 8 (3), 380–388 (in Russian).
- EMI, the database of the Estonian Marine Institute.
- MADS, The Danish national database for marine data. NERI: University of Aarhus; National Environmental Research Institute. Downloaded in August–September 2010.
- MARIDATA, the database of MariLim GmbH including all German literature references given in Nielsen (1995), Blümel et al. (2002), Schubert et al. (2003), Kiel herbarium references and all occurrences of the German HELCOM, BSPA and WFD monitoring.
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- Swedish Species Gateway. Swedish Species Information Centre and Swedish Environmental Protection Agency. Available at www.artportalen.se.