

## SPECIES INFORMATION SHEET

*Hippasteria phrygiana*

English name: <b>Rigid cushion star</b>	Scientific name: <i>Hippasteria phrygiana</i>	
Taxonomical group: Class: Asteroidea Order: Valvatida Family: Goniasteridae	Species authority: Parelius, 1768	
Subspecies, Variations, Synonyms: <i>Asterias equestris</i> Linnaeus, 1758 <i>Asterias phrygiana</i> Parelius, 1768	Generation length: –	
Past and current threats (Habitats Directive article 17 codes): Sedimentation caused by eutrophication (H01.05) and bottom trawling (F02.02.01)	Future threats (Habitats Directive article 17 codes): Sedimentation caused by eutrophication (H01.05) and bottom trawling (F02.02.01), Climate change (M)	
IUCN Criteria: <b>B1ab(iii)</b>	<b>HELCOM Red List Category:</b>	<b>VU Vulnerable</b>
Global / European IUCN Red List Category: NE/NE	Habitats Directive: –	
Protection and Red List status in HELCOM countries: Denmark –/–, Estonia –/–, Finland –/–, Germany –/–, Latvia –/–, Lithuania –/–, Poland –/–, Russia –/–, Sweden –/NT		

**Distribution and status in the Baltic Sea region**

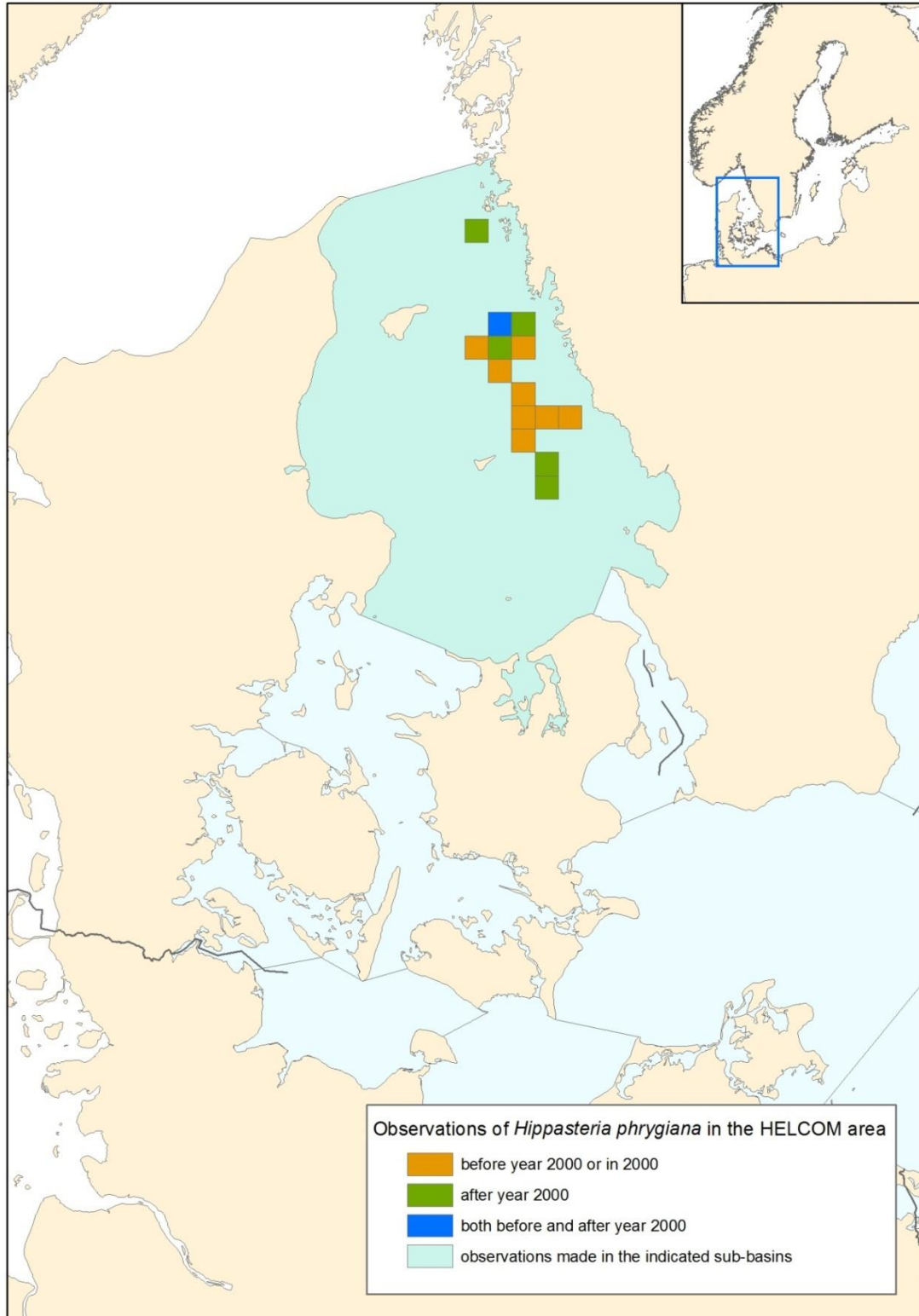
The main distribution of *H. phrygiana* within the HELCOM area is in the Kattegat. The species has also been reported from the Öresund (Knäshaken) during the 1960s, but has not been found in the area since. North of the Kattegat the species is reported from the Skagerrak and the North Sea. It also occurs along the Norwegian coast. The species requires cold water with a high salinity (33 psu), and is probably quite rare in the Kattegat. It has primarily been found on the shallow offshore banks in the Kattegat. In addition sporadic observations are reported from Swedish fisheries. In the North Sea, the species occurs from the Shetland Islands down to Northumberland on the British east coast. Elsewhere it is northerly distributed from Scotland to Greenland, Iceland and Finnmark in Norway.

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### Distribution map

The records of species obtained from the species database of the Swedish Species Information Centre (Artportalen).



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### Habitat and ecology

*Hippasteria phrygiana* is a large and conspicuous cushion-like starfish. It seems to be rather rare throughout its range, and its ecology is thus not that well known. *H. phrygiana* can occur on both hard or sandy/muddy bottoms, from 20 meters down to 400 meters depth in other oceans (down to 100 m in the HELCOM area). It requires a medium salinity of 33 psu, and primarily occurs in colder water. It probably feeds on other echinoderms and on bivalves. The larvae probably have direct development, which limits the species ability to disperse and recolonize.

### Description of major threats

As the species requires cold water with high salinity, climate change is likely to affect it negatively within the HELCOM area. Furthermore, the species prime locations in the Kattegat (i.e. offshore banks) are sensitive to sedimentation caused by eutrophication and trawling.

### Assessment justification

A comparison between Swedish historical and present data indicates a small decline in distribution. In addition, the species was previously present in Öresund, but is no longer found there. Estimated extent of occurrence (EOO) in the Kattegat is 2 000 (1000–6000) km<sup>2</sup>, and number of locations estimated to be 4 (3–5). The restricted geographic range together with continuing decline in habitat quality qualifies for the category Vulnerable (VU) according to B1ab(iii).

### Recommendations for actions to conserve the species

It is difficult to suggest specific measures for *H. phrygiana* but its population in the HELCOM area would probably benefit from any actions that could slow down global warming. Since the species depend on cold water with high salinity the population in the Kattegat, it may go extinct when water temperature increases.

### Common names

Denmark: –, Estonia: –, Finland: –, Germany: knotiger Seestern, Latvia: –, Lithuania: –, Poland: –, Russia: –, Sweden: hästsjöstjärna

### References

- Barnes, M. 2009. *Hippasteria phrygiana*. A cushion star. Marine Life Information Network: Biology and Sensitivity Key Information Sub-programme [on-line]. Plymouth: Marine Biological Association of the United Kingdom. [cited 07/08/2012]. Available from: <http://www.marlin.ac.uk/speciesfullreview.php?speciesID=3500>
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- Marine Species Identification Portal. Available at [http://species-identification.org/species.php?species\\_group=echinodermata&id=45](http://species-identification.org/species.php?species_group=echinodermata&id=45)
- National Museums of Northern Ireland 2002–2012. *Hippasteria phrygiana* (Parelius, 1768). Available at <http://www.habitas.org.uk/marinelifelife/species.asp?item=ZB950>.
- Picton, B.E. 1993. A Field Guide to the Shallow-water Echinoderms of the British Isles
- Southward, E.C. & Campbell, A.C. 2006. Echinoderms. Synopses of the British Fauna. Linnean Society of London.

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Swedish Species Gateway. Swedish Species Information Centre and Swedish Environmental Protection Agency. Available at [www.artportalen.se](http://www.artportalen.se).