

RAPID COASTAL SURVEY IN NORWEGIAN WATERS

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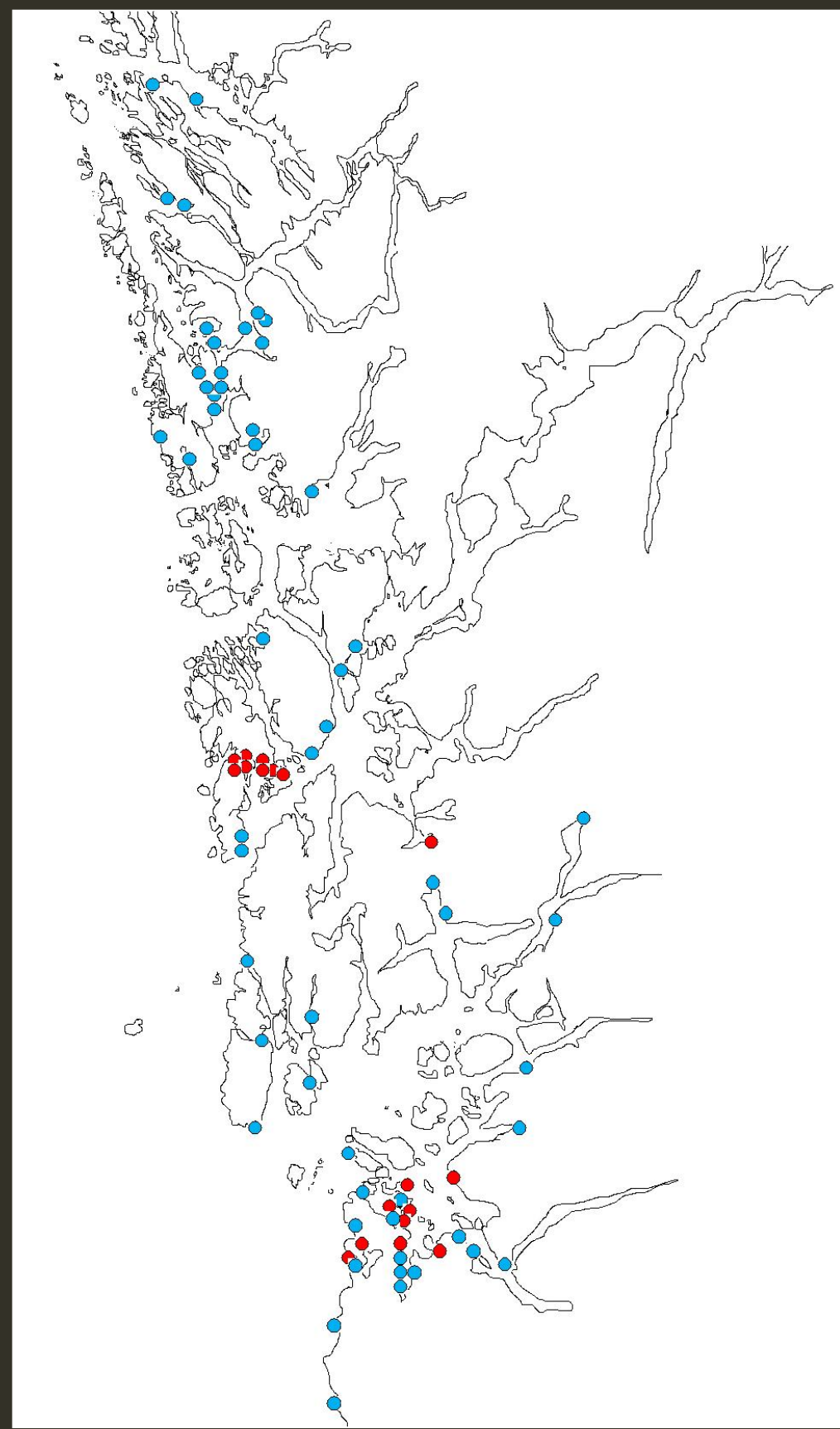


Photo: Rudolf Svensen

METHOD

Rapid coastal survey is a cost efficient and rapid method for mapping of marine introduced species in harbours and marinas. Target species is selected in advance and an ID card for each target species is developed. The target list contains both species that are known to be established in Norway and species that is expected to settle here. As a part of the Norwegian national mapping programme for introduced species the method has been used in 30 marinas in Hordaland county (2010), 38 marinas in Rogaland county (2011) and in 60 marinas in inner and outer Oslofjord (Østfold, Akershus, Oslo, Buskerud and Vestfold) in 2012.

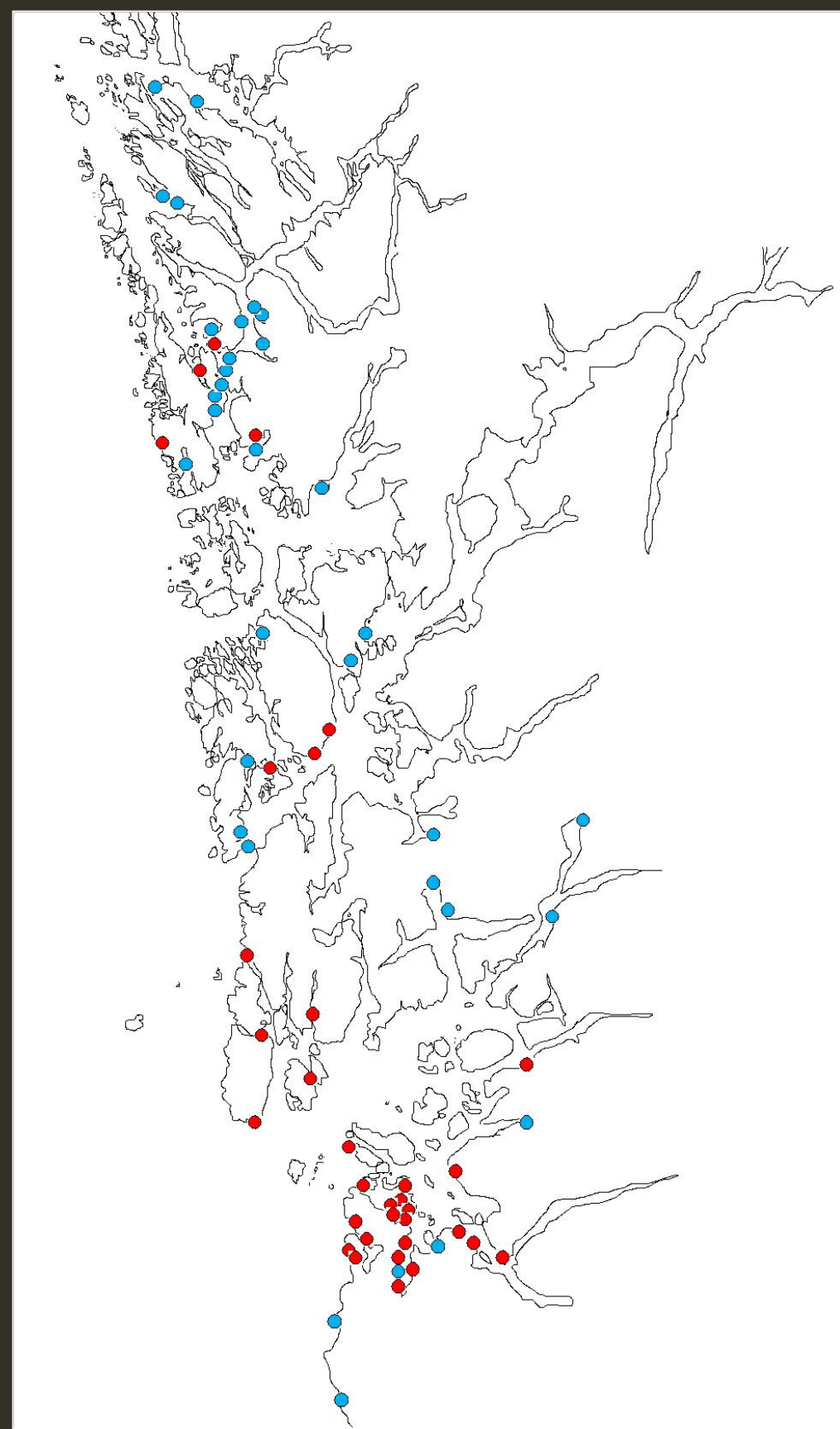
RESULTS- HORDALAND & ROGALAND COUNTY (2010-2011)



STYELA CLAVA: The pacific ascidian was first observed in Rogaland in 1990, but was not identified before 2010. During the summers 2010 and 2011 we recorded a disjunct distribution of the species in Rogaland and in Hordaland.



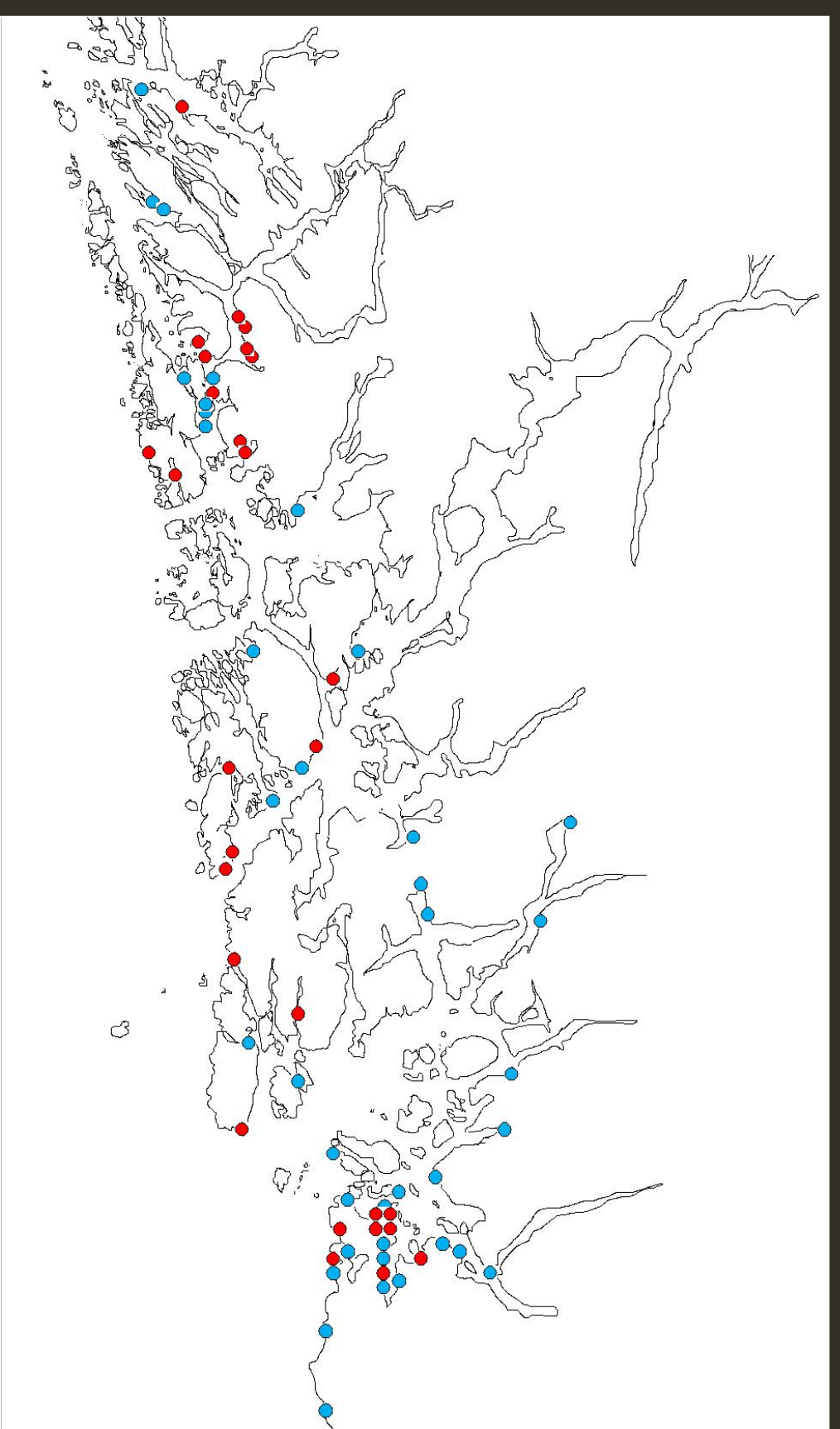
Left: Distribution of *Styela clava* in Hordaland and Rogaland. (Red = present, Blue = absent). Right: *Styela clava* under floating dock. PHOTO: Rudolf Svensen.



SARGASSUM MUTICUM: Japanese wire weed was first recorded in Norway in 1988. We found the species to be very common in Rogaland, forming associations in the intertidal zone. In Hordaland the populations were more scarce.



Left: Distribution of *Sargassum muticum* in Hordaland and Rogaland county (Red = present, Blue = absent). Left: *S. muticum* at Hundvåg close to Stavanger. Photo: Vivian Husa



CAPRELLA MUTICA: Japanese skeleton shrimp was first observed in Norway in 1999. The species was widely distributed in Hordaland and Rogaland.



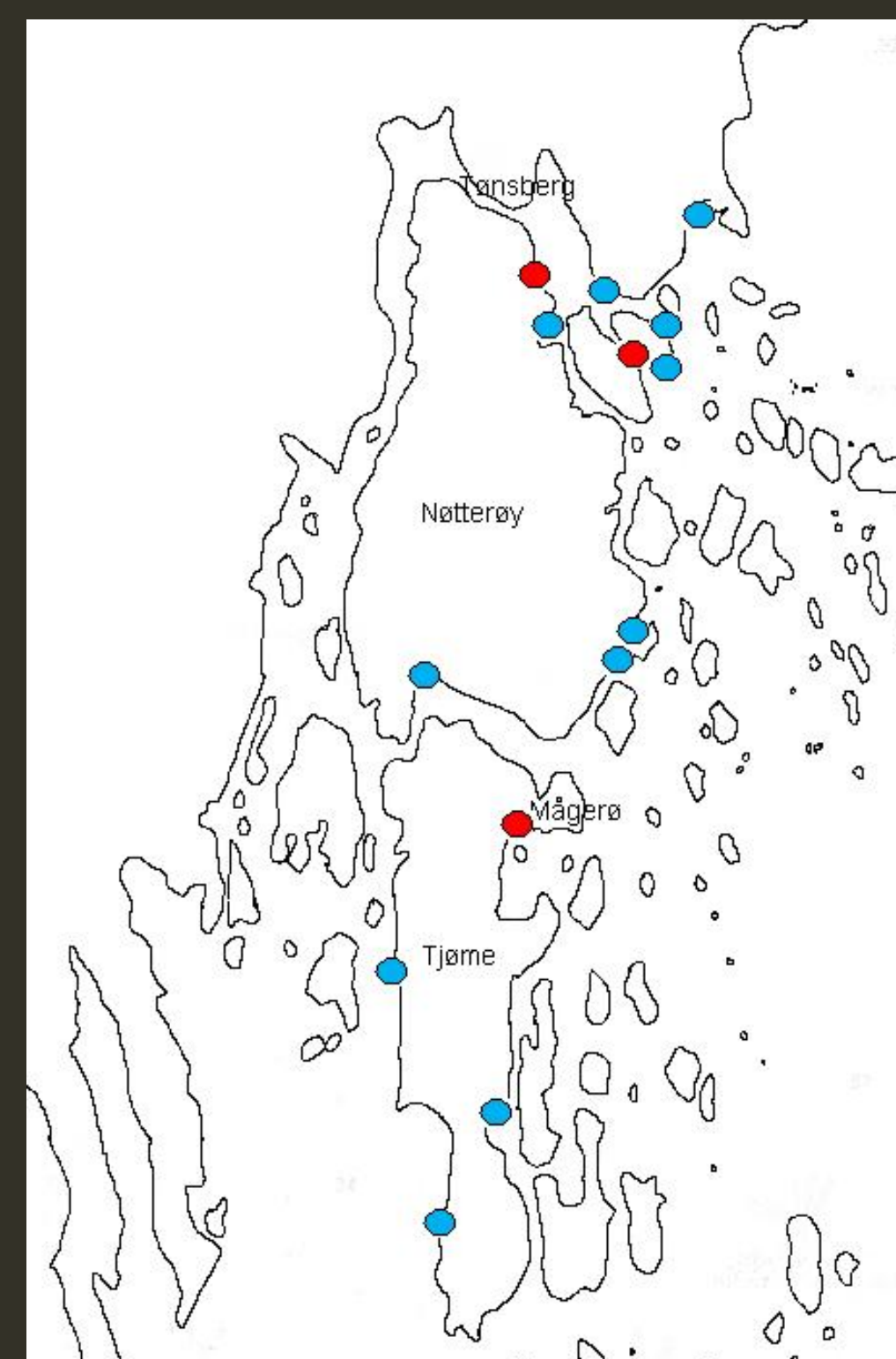
Left: Distribution of *Caprella mutica* in Hordaland and Rogaland. (Red = present, Blue = absent). Right: Japanese skeleton shrimp (*Caprella mutica*). Photo: Rudolf Svensen.

PRELIMINARY RESULTS – INNER AND OUTER OSLOFJORD (AUGUST 2012)

In general the marinas in Oslofjorden were more species poor than the marinas on the west coast of Norway. This was probably due to low salinity in the surface layer. However we made some interesting records in the area.

FIRST SIGHTING OF THE INVASIVE RED ALGA GRACILARIA VERMICULOPHYLLA IN NORWAY

The red alga *G. vermiculophylla* was recorded at two sites at Nøtterøy and one site at Tjøme in August 2012. The habitat where the species were found was typically shallow, wave protected and muddy areas. In Scandinavia the species is known from Sweden and Denmark. *G. vermiculophylla* is a highly competitive species with high tolerance to environmental fluctuations and may have a negative impact in seagrass meadows and other shallow habitats.



Left: Distribution of *Gracilaria vermiculophylla* at Nøtterøy and Tjøme in August 2012. (Red = present, Blue = absent). Above: The species was quite abundant in shallow muddy habitat at these sites. Photo: Rudolf Svensen

CREPIDULA FORNICATA: In Norway the slipper limpet was first recorded in 1958 and has occasionally been registered along the southern part of Norway. Low temperatures is probably restricting the species from becoming a nuisance species like further south in Europe. At Ula (N 59° 1.512', E 10° 11.062') near Larvik we found the largest population of slipper limpets recorded in Norway, counting more than a thousand specimens.



Right: Chain of *Crepidula fornicata* at Ula with small baby limpets climbing. Photo: Rudolf Svensen

MANAGEMENT OF INTRODUCED MARINE SPECIES IN NORWAY.

A total of 13 introduced species was found in the survey and one new species for Norway were detected. In the marine environment it is practically impossible to eradicate species which has become established. Trying to prevent species from arriving is the only possible approach. Eight years after the international agreement (IMO) on ballast water treatment, we are still waiting for enough countries with substantial tonnage to implement the agreement. Still it is important to have a national mapping and monitoring programme to know which species are establishing and follow their dispersal along the Norwegian coast.

THIS PROJECT IS A COLLABORATION BETWEEN THE INSTITUTE OF MARINE RESEARCH, THE UNIVERSITY OF BERGEN, UWPHOTO ANS, SALT AND IS SUPPORTED BY THE NORWEGIAN DIRECTORY OF NATURE MANAGEMENT