

Jon-Arne Sneli and Bjørn Gulliksen

## Prosobranch Molluscs and Ascidians in the Trondheimsfjord

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NTNU  
Norges teknisk-naturvitenskapelige  
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Forsidefoto/Cover photo (Bjørn Gulliksen):

Tre kongsnegler (*Buccinum undatum*) spiser av et blåskjell mens et korstroll prøver å få en del av byttet. Alle artene svært vanlige i Trondheimsfjorden.

Three *Buccinum undatum* feeding on a specimen of *Mytilus edulis*. A seastar, *Asterias rubens*, tries to get a share of the prey. All three species common in the Trondheimsfjord.

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## REFERAT

Sneli, J.-A. & Gulliksen, B. 2005. Framgjellesnegler (Mollusca: Prosobranchia) og sekkdyr (Tunicata: Ascidiacea) i Trondheimsfjorden, 1971-1973. NTNU Vitenskapsmuseet Rapp. zool. ser. 2006, 1:1-56.

Med støtte fra Nansenfondet ble det gjennomført innsamlinger av bunndyr i Trondheimsfjorden med bruk av trekantskrape, bunnsleder, Agassiz-trål og reketrål. Det ble lagt vekt på å identifisere framgjellesnegler og sekkdyr, selv om en rekke andre organismer også ble notert eller tatt vare på til de vitenskapelige samlingene ved NTNU, Vitenskapsmuseet. I løpet av tre år ble 183 lokaliteter på mange bunntyper i fjorden undersøkt. Det ble funnet 83 arter prosobrancher og 31 arter sekkdyr. Fra Trondheimsfjorden er det totalt rapportert 119 arter prosobrancher og 45 arter sekkdyr. Av kjente prosobrancher som ikke ble funnet i 1971-1973 lever 10 av artene i fjæresonen eller på meget grunt vann – områder som ikke ble undersøkt av oss. I tillegg til informasjon om utbredelsen av framgjellesnegler og sekkdyr har rapporten beskrivelser av bunnforholdene på de lokaliteter som det ble samlet på samt hvilke bunndyrarter som var mest fremtredende i prøvene.

Emneord: marine bløtdyr (Mollusca) – sekkdyr (Ascidiacea) – forekomst – Vest-Norge

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## ABSTRACT

Sneli, J.-A. & Gulliksen, B. 2005. Prosobranch Molluscs and Ascidians in the Trondheimsfjord 1971-1973. NTNU Vitenskapsmuseet Rapp. zool. ser. 2006,1: 1-56.

During the years 1971 to 1973 investigations on marine bottom animals in the Trondheimsfjord took place with use of collecting gears as triangular dredge, detritus sledge, Agassiz and Otter trawl. A variety of bottom substrates in the fjord were sampled with a total of 183 localities. Especially prosobranchs and ascidians were given attention during sampling even though a lot of other marine bottom living organisms were either collected or noted. It was found 83 prosobranch species and 31 ascidian species out of a known total of 119 and 45 species respectively living in the fjord. As we did not sample in the littoral zone or at very shallow depths, less than 10 m, at least 10 of the known prosobranch species were not recorded. The report also give information on the bottom sediments in the area where sampling took place together with conspicuous species dominating in the samples.

Key words: Marine Mollusca – Ascidiacea – distribution – Western Norway

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## **PREFACE**

The authors were interested in getting to know the different types of bottom substrates in the Trondheimsfjord and the conspicuous animals living there. We had our main interest towards marine prosobranch molluscs and ascidians, but we also paid attention to a lot of other bottom living animals that were found in the bottom samples. The fjord were divided in 10 minutes squares and we intended to at least take one sample in each square (see fig. 2).

Our study was made possible through financial support from “Nansenfondet” and “Harry Borthens Legat”, which is gratefully acknowledged.

We are indebted to the two crewmembers, captein Emil Frién (+) and chief engineer Bjarne Søreng (later on captain on the ship) who handled the winch with great skill during sampling, for their assistance during our three years of research in the Trondheimsfjord.

The report is published with a delay of more than 20 years, but the results have now become of great interest as the Museum in Trondheim is registrating their scientific collections in a database. The information given in the report will be valuable support to the information found in the database.

# 1 INTRODUCTION

Gunnerus did the first investigations on the benthos in the Trondheimsfjord in the 1760-ties. Investigations were intensified after the establishment of the Biological Station in Trondheim in 1900.

The literature on molluscs from the Trondheimsfjord is rather large but concentrated on a few localities - especially Røberg and the Borgenfjord. Near 20 authors have published records of molluscs from the fjord in addition to Gunnerus (1770). Some of the more comprehensive studies are given by Dons (1926-1941), Kaas (1985), Lande (1975), Nordgaard (1926), Norman (1893), Odhner (1926, 1939), Sneli (1975), and Storm (1884). In the Literature list of this paper is also given references to other publications containing information on distribution and/or biology of a single or a few species.

Gunnerus (1765, 1770) also did the first publications on ascidians from the Trondheimsfjord. His descriptions of *Tethyum sociabile* (= *Ciona intestinalis* L., 1767) and *Ascidia singularis* Gunnerus, 1770 (*Polycarpa pomaria* Savigny 1816) were the first binomial descriptions of these two species although the ICZN in 1981 rejected *T. sociabile* conserving *Ciona intestinalis* (Sneli & Gulliksen 1975 a, b).

More than hundred years later, the next publication on ascidians from the Trondheimsfjord appeared when Storm (1876) presented a list of five species found near the entrance of the fjord. Two years later Storm (1878) adds the record of *Ciona intestinalis* from Borgenfjorden. Other publications treating ascidians from the Trondheimsfjord are Herdman (1892, 1893), Huitfeldt-Kaas (1896), Kiær (1896), Hartmeyer (1903, 1912, 1922), and Arndt (1914). The most comprehensive publication among these is Hartmeyer (1922) which lists 22 species and also discusses synonyms used by earlier authors. No comprehensive publications have since appeared, but single species or groups have been treated by Årnback-Christie-Linde (1921, 1922, 1924, 1927, 1934) and Gulliksen (1972, 1973, 1974, 1980).

However, few lists of species with description of the sampling stations have appeared, and the distribution of different animal groups in the Trondheimsfjord related to the habitat and physical environment are therefore relatively little known.

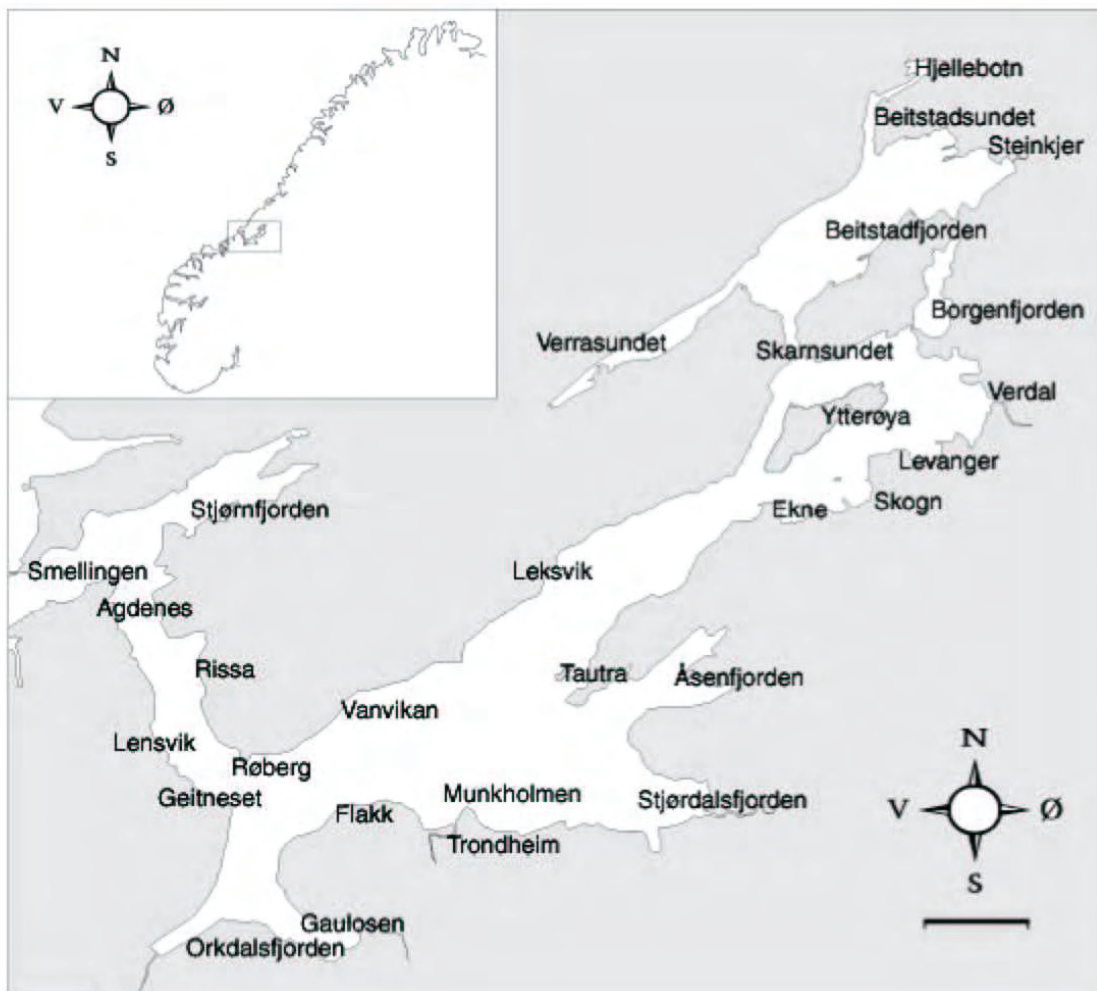
The present publication contains results from a three-year sampling programme of prosobranchs and ascidians in the Trondheimsfjord, 1971 - 1973. The sampling program was designed to give the best possible picture of the distribution of these two groups in the fjord. However, conspicuous or rare species from other groups were also recorded. The conspicuous animals from these groups are mentioned in the text to give additional information of the ecological environment. The prosobranchs are treated by Jon-Arne Sneli and the ascidians by Bjørn Gulliksen.

## 2 AREA AND ENVIRONMENT

The Trondheimsfjord is located between 63°30' - 64°N and 9°30' - 11°30'E. The fjord has a total length of about 140 km. The fjord may be regarded as three basins. The outer basin (746 km<sup>2</sup>) is limited by a threshold with a depth of 330 m at Agdenes - Brettingsnes and a 60-100 m deep threshold near the island Tautra. Fjordarms branching from the outer basin are the Orkdalsfjord, Gaulosen and the Stjørdalsfjord. The maximum depth of the outer basin, about 615 m, is found near Agdenes (Fig. 1).

The middle basin (441 km<sup>2</sup>) is limited by the threshold at Tautra and by a narrow sound, Skarnsundet, also acting as a threshold, with a depth of 130 m. The maximum depth (425 m) of the middle basin is found south of Ytterøya. The Borgenfjord (18.5 km<sup>2</sup>), which has a narrow and shallow connection to the Trondheimsfjord, is a branch from the middle basin.

The inner basin, the Beitstadfjord (233 km<sup>2</sup>), has a maximum depth of 270 m. The Beitstadfjord has two narrow branches, Verrasundet, which has a depth of more than 100 m, and Beistadsundet which leads into Hjellebotn. The depth here is less than 20 m.



**Fig. 1.** The Trondheimsfjord with locality names used in the text. The rivers Orkla, Gaula, Stjørdalselva, Verdalselva, and Ognå respectively opens to Orkdalsfjorden, Gaulosen, Stjørdalsfjorden, Verdal, and Steinkjer.

In our study, some stations were also investigated just outside the entrance to the Trondheimsfjord. These samples were taken in the Stjørnfjord (about 2 km long, maximum depth about 230 m) and near the island Smellingen (Fig. 1).

The sedimentary environment of the Trondheimsfjord is very complex, but some trends are typical. Generally, the sides of the fjord are steep and rocky. Sub-aquatic flow slides in medium fine-grained sand are frequent (Rosenqvist 1960). The softer materials are therefore found in the deeper basins. Much loose materials are also transported into the fjord from the neighbouring rivers, primarily Orkla, Gaula, Stjørdalselva, Verdalselva, and Ognå near Steinkjer. Coarser sediments can be found on ridges exposed to current, for instance on the threshold near Tautra.

The hydrography of the Trondheimsfjord will here only be treated superficially, as it earlier has been treated in detail by several authors (Follesø 1966, Wendelbo 1970, Jacobson 1976). The outer fjord has a good connection with coastal waters, and even the inner basin show no sign of stagnant water. A yearly inflow and exchange of the bottom water in the fjord is the rule. Stagnant conditions are only found in isolated areas like the inner part of the Borgenfjord (Gulliksen 1972, McClimans 1973).

The hydrographic station at Røberg (Fig. 1) illustrates well the hydrographic conditions in the fjord. The yearly amplitudes of salinity and temperature at 0 m, 50 m, 100 m and 400 m depth for the period 1963 - 1975 are shown in Table 1.

Supersaturation of oxygen has been recorded in the upper 10 - 20 m depth in spring and summer. The seasonal variations of the deeper water are negligible, and as oxygen percentages are never found below 70, which indicates good aeration of the deeper water masses.

The mean tidal range of the fjord is 1.83 m.

### **3 MATERIAL AND METHODS**

The sampling took place using the 64 feet research vessel "Harry Borthen I" which belonged to the Biological station in Trondheim. Samples were mostly taken with a triangular dredge or a detritus sledge (see Sneli 1998), but some samples were also taken with otter trawl, Agassiz trawl or Ockelmann-sledge. As the choice of gear is dependent on the nature of the substrate, the triangular dredge was primarily used on hard substrates while the detritus sledge was used on soft, level bottoms.

The treatment of the samples was dependent on the nature of the substrate. For samples containing hard substrates as rocks and boulders, the animals were picked by hand. Softer substrates were sieved through sieves with a mesh size of 3 and 1 mm and later sorted under a dissecting microscope. The material was fixed in 80 % alcohol, some compound ascidians first after narcotising with menthol.

**Table 1.** The yearly amplitude in temperature (T) and salinity (S) at 0 m, 50 m, 100 m, and 400 m at Røberg (stn.15) from 1963 to 1973

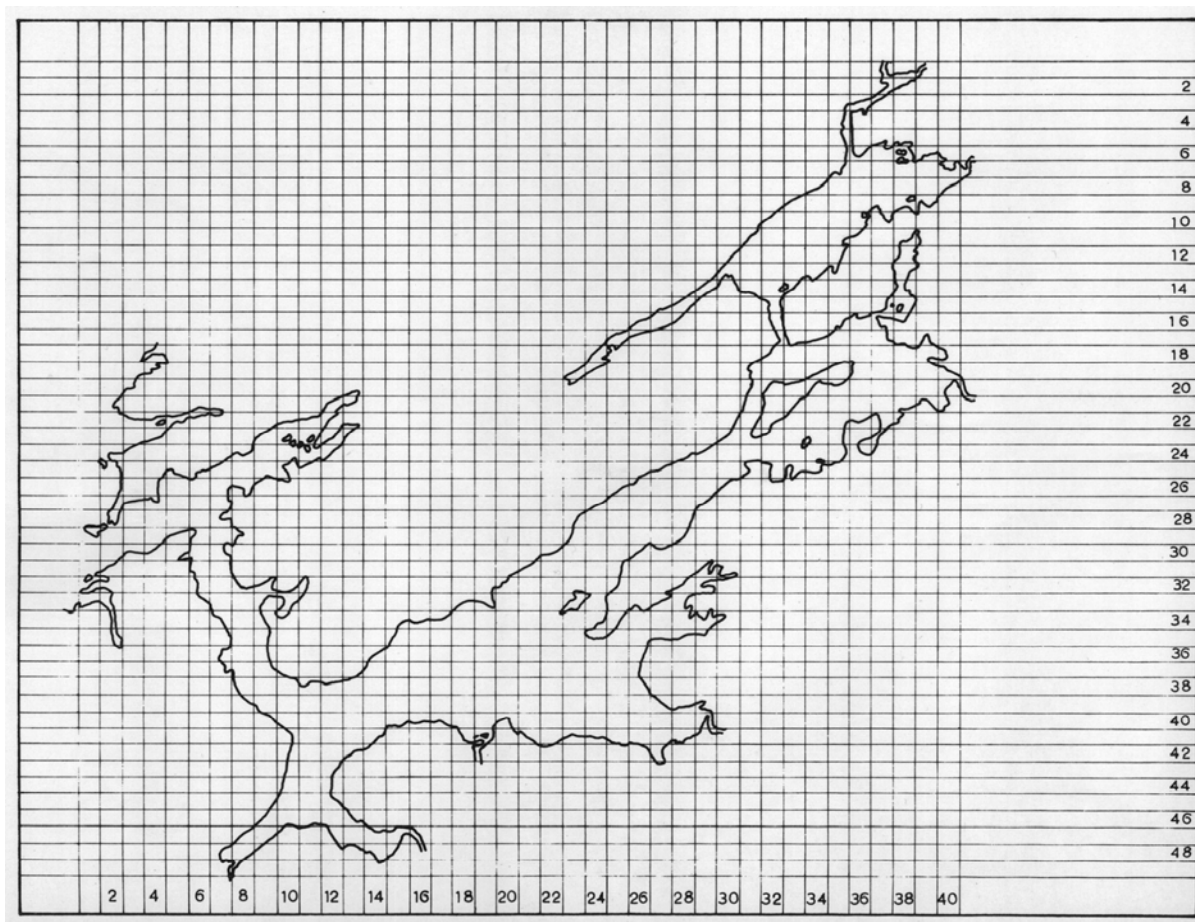
Year		0 m	50 m	100 m	400 m
1963	T	3.04 – 14.60	6.26 – 11.56	6.62 – 9.92	7.08 – 7.81
	S	32.12 – 21.15	32.66 – 34.29	33.44 – 34.65	34.76 – 35.25
1964	T	2.07 – 14.68	6.90 – 9.81	16.97 – 8.25	7.45 – 7.87
	S	20.34 – 32.50	32.86 – 34.07	33.55 – 34.67	34.65 – 34.94
1965	T	4.30 – 14.86	6.31 – 10.84	7.30 – 8.30	7.13 – 7.90
	S	19.89 – 32.50	31.94 – 34.43	33.98 – 34.78	34.72 – 34.97
1966	T	2.93 – 13.59	3.51 – 6.43	4.48 – 6.83	6.90 – 7.49
	S	24.20 – 33.40	3.39 – 33.80	33.69 – 34.58	34.76 – 34.80
1968	T	1.55 – 14.72	5.82 – 8.15	6.45 – 7.41	7.06 – 7.43
	S	8.84 – 33.95	32.57 – 34.31	33.53 – 34.78	34.07 – 34.99
1969	T	2.78 – 18.30	4.76 – 8.51	4.94 – 8.30	7.16 – 7.63
	S	8.60 – 33.75	33.33 – 34.07	33.89 – 34.79	34.74 – 34.97
1970	T	4.60 – 16.90	5.05 – 7.44	6.00 – 7.44	5.92 – 7.48
	S	12.67 – 34.07	34.02 – 34.67	34.02 – 34.67	34.60 – 34.83
1971	T	2.12 – 12.83	6.10 – 8.50	6.51 – 8.13	6.91 – 7.39
	S	10.76 – 32.07	32.10 – 33.86	33.82 – 34.60	34.51 – 34.95
1973	T	2.66 – 15.55	6.49 – 9.10	6.65 – 8.35	7.54 – 7.81
	S	17.82 – 32.62	33.11 – 34.07	33.63 – 34.61	34.86 – 34.98

The sampling stations were located in the field by landmarks using map no. 220 and 221 from "Norges Sjøkartverk". From 1973, radar was used to measure distances from shore. The sampling depths were determined by means of echosounder and the angle of the dredging wire (see Dons 1933).

For station numbering five digits was used, the two first denoting the year, the last three, the sample number in that year. Locality names refers to names on the maps from Norges Sjøkartverk. The two numbers given in parenthesis behind the name of a station refers respectively to the vertical and the horizontal axis in Fig. 2.

The investigations were supported with grants from Nansenfondet (60.000 kr.) and Harry Borthens legat (15.000 kr.).

The material is deposited in NTNU, the Museum of Natural History and Archaeology.



**Fig. 2.** Map for localisation of the sampling stations as given in the parenthesis behind each station number in the text. The left digits refer to the vertical axis and the right digits to the horizontal axis. For example (19-41) refers to the city of Trondheim.

#### 4 DREDGING STATIONS AND CONSPICUOUS ANIMALS

**Stn. 71001.** 27 Jan. SW of Furunes (25-31).

Depth: 11-40 m. Gear: Agazzis-trawl. Gravel and clay bottom.

**Conspicuous animals:** *Stichopus tremulus*, *Geodia* sp., *Modiolus modiolus*, *Astarte* sp.

**Prosobranchs:** *Capulus ungaricus*, *Colus gracilis*.

**Ascidians:** *Ciona intestinalis*, *Ascidia mentula*, *Ascidia conchilega*, *Ascidia virginea*, *Ascidia obliqua*, *Ascidiella aspersa*, *Polycarpa pomaria*.

**Stn. 71002.** 27 Jan. NW of Furunes (25-31).

Depth: 60-18 m. Gear: Agazzis-trawl. Gravel and clay bottom.

**Conspicuous animals:** *Stichopus tremulus*.

**Ascidians:** *Ascidia obliqua*, *Botrylloides aureum*, *Boltenia echinata*, *Polycarpa pomaria*.

**Stn. 71003.** 27 Jan. W of Furunes (25-31).

Depth: 60-25 m. Gear: Triangular dredge. Soft bottom with large rocks.

**Ascidians:** *Corella parallelogramma*, *Ascidia mentula*.

**Stn. 71004.** 27 Jan. Furunes (25-31).

Depth: 50-17 m. Gear: Triangular dredge. Gravel bottom.

**Polyplacophora:** *Tonicella rubra*.

**Prosobranchs:** *Emarginula fissura*, *Emarginula crassa*, *Acmaea testudinalis*, *Lepeta caeca*, *Iothia fulva*, *Velutina velutina*, *Turritella communis*, *Neptunea despecta*.

**Ascidians:** *Ascidia mentula*, *Styela rustica*.

**Stn. 71005.** 9 March. Geitneset (10-41).

Depth: 150 m. Gear: Triangular dredge. Hard bottom.

**Prosobranchs:** *Puncturella noachina*, *Iothia fulva*, *Jujubinus clelandi*, *Lacunina vineta*, *Buccinum undatum*, *Trophonopsis barvicensis*, *Philbertia linearis*.

**Stn. 71006.** 9 March. Geitneset (10-41).

Depth: 200-50 m. Gear: Triangular dredge. Soft and gravel bottom.

**Prosobranchs:** *Puncturella noachina*, *Iothia fulva*, *Trichotropis borealis*, *Buccinum undatum*, *Neptunea despecta*.

**Ascidians:** *Ascidia conchilega*, *Ascidia virginea*.

**Stn. 71007.** 9 March. Geitneset (10-41).

Depth: 500-50 m. Gear: Triangular dredge. Hard bottom.

**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Lunatia alderi*, *Buccinum undatum*, *Trivia arctica*.

**Ascidians:** *Ascidia obliqua*, *Boltenia echinata*.

**Stn. 71008.** 21 May. Orsandgrunnen (25-30).

Depth: 125-45 m. Gear: Triangular dredge. Soft bottom with shell and gravel.

**Prosobranchs:** *Emarginula fissura*, *Trophonopsis thratus*, *Enteroxenos oestergreni*.

**Stn. 71009.** 21 May. Orsandgrunnen (25-30).

Depth: 110-38 m. Gear: Triangular dredge. Gravel bottom.

**Prosobranchs:** *Emarginula crassa*, *Puncturella noachina*, *Lepeta caeca*, *Jujubinus clelandi*, *Trivia arctica*, *Neptunea despecta*, *Colus gracilis*.

**Ascidians:** *Ciona intestinalis*, *Ascidia virginea*, *Ascidia obliqua*, *Ascidia prunum*.

**Stn. 71010.** 21 May. Fånes (25-29).

Depth: 130-60 m. Gear: Triangular dredge. Shell, gravel and coarse mineral sand.

**Conspicuous animals:** *Ciona intestinalis*, *Stichopus tremulus*.

- Prosobranchs:** *Puncturella noachina, Jujubinus clelandi, Lunatia pallida, Velutina velutina, Trophonopsis barvicensis, Enteroxenos oestergreni, Neptunea despecta.*
- Ascidians:** *Ciona intestinalis, Rhopalaea nordgaardi, Ascidia chillega, Ascidia obliqua.*
- Stn. 71011.** 24 May. Fånes (26-29).  
Depth: 70-20 m. Gear: Triangular dredge. Stones, pebbles, and some gravel.
- Conspicuous animals:** *Modiolus modiolus, Ophiopholis aculeta, Psilaster andromeda, Cucumaria sp., Aclis sarsi.*
- Prosobranchs:** *Puncturella noachina, Lepeta caeca, Iothia fulva, Aclis sarsi, Jujubinus clelandi, Trophonopsis barvicensis, Trivia arctica, Neptunea despecta, Buccinum undatum, Colus gracilis.*
- Ascidians:** *Ascidia mentula, Ascidia virginea, Ascidia obliqua, Polycarpa pomaria, Molgula siphonalis.*
- Stn. 71012.** 4 May. Nordviksundet (31-21).  
Depth 300-400 m. Gear: Triangular dredge. Silt.
- Conspicuous animals:** *Calocaris macandrea, Amphiuura chiajei, Ophiura albida, Psolus phantapus.*
- Stn. 71013.** 24 May. Hoøya, Beitstadfjorden (32-14).  
Depth: 55-45 m. Gear: Triangular dredge. Coarse and fine mineral sand, wooden spines.
- Prosobranchs:** *Puncturella noachina, Acmaea virginea, Lepeta caeca, Jujubinus clelandi, Gibbula tumida, Velutina velutina.*
- Ascidians:** *Ascidia obliqua, Polycarpa fibrosa.*
- Stn. 71014.** 25 May. Rambergholmen, Beitstadfjorden (35-6).  
Depth: 50-20 m. Gear: Triangular dredge. Pebbles, stones.
- Conspicuous animals:** *Polyclinum aurantium.*
- Prosobranchs:** *Iothia fulva.*
- Ascidians:** *Polyclinum aurantium, Corella parallelogramma.*
- Stn. 71015.** 25 May. Giplingøen, Beitstadfjorden (31-14).  
Depth: 110-70 m. Gear: Triangular dredge. Fine mineral sand with some coarse sand and gravel.
- Prosobranchs:** *Jujubinus clelandi.*
- Ascidians:** *Ascidia virginea, Ascidia obliqua, Ascidiella scabra, Dendrodoa grossularia, Polycarpa fibrosa.*
- Stn. 71016.** 25 May. Giplingøen, Beitstadfjorden (31-14).  
Depth: 45-30 m. Gear: Triangular dredge. Pebbles, gravel, and coarse mineral sand.
- Polyplacophora:** *Hanleya hanleyi.*
- Prosobranchs:** *Puncturella noachina, Lepeta caeca, Oenopota trevelliiana, Jujubinus clelandi, Aporrhais pespelicani, Natica clausa, Neptunea despecta, Buccinum undatum.*



**Ascidians:** *Ciona intestinalis*, *Ascidia obliqua*, *Dendrodoa grossularia*,  
*Polycarpa pomaria*.

**Stn 71017.** 26 May. Hoøya, Beitstadjorden (32-14).

Depth: 80-30 m. Gear: Triangular dredge. Gravel, dead shells, mineral sand and silt.

**Conspicuous animals:** *Polycarpa pomaria*.

**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Cheritiella metula*, *Alvania jeffreysi*.

**Scaphopoda:** *Antalis entale*.

**Ascidians:** *Ciona intestinalis*, *Ascidia conchilega*, *Ascidia obliqua*, *Polycarpa pomaria*.

**Stn. 71018.** 26 May. Hoøya, Beitstadjorden (32-14).

Depth: 45-35 m. Gear: Triangular dredge. Empty shells, shell-gravel.

**Conspicuous animals:** *Macandrevia cranium*, *Polycarpa pomaria*, *Aclis sarsi*, *Manzonia zetlandica*, *Onoba semicostata*.

**Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Melanella platyacme*, *Natica clausa*, *Trophonopsis clathratus*, *Trophonopsis barvicensis*, *Neptunea despecta*, *Philbertia linearis*, *Eulima bilineata*, *Aclis sarsi*, *Manzonia zetlandica*, *Alvania jeffreysi*, *Onoba semicostata*.

**Ascidians:** *Ciona intestinalis*, *Ascidia virginea*, *Ascidia obliqua*, *Polycarpa pomaria*.

**Stn. 71019.** 26 May. Sandvikneset, Skarnsundet (32-17).

Depth: 150-50 m. Gear: Triangular dredge. Hard bottom, pebbles and gravel (dead stony corals).

**Conspicuous animals:** *Lophelia pertusa* (dead).

**Prosobranchs:** *Puncturella noachina*, *Iothia fulva*, *Bittium reticulatum*, *Velutina velutina*, *Trophonopsis clathratus*, *Trophonopsis barvicensis*, *Buccinum undatum*, *Eulima bilineata*.

**Ascidians:** *Ciona intestinalis*, *Ascidia virginea*, *Polycarpa pomaria*.

**Stn. 71020.** 26 May. Venneshavn Lighthouse, Skarnsundet (32-15)

Depth: 170-30 m. Gear: Triangular dredge. Stones, pebbles and gravel.

**Conspicuous animals:** *Lithodes maja*, *Ascidia conchilega*, *Polycarpa pomaria*.

**Polyplacophora:** *Hanleya hanleyi*.

**Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Iothia fulva*, *Trichotropis borealis*, *Velutina velutina*, *Trophonopsis clathratus*, *Neptunea despecta*.

**Ascidians:** *Ascidia conchilega*, *Ascidia obliqua*, *Dendrodoa grossularia*, *Polycarpa pomaria*, *Boltenia echinata*.

**Stn. 71021.** 27 May. W of Kjerringvika, Skarnsundet (32-17).

Depth: 170-50 m. Gear: Triangular dredge. Stony corals, some mineral sand.

**Conspicuous animals:** *Lophelia pertusa*, *Paragorgia arborea*, *Paramuricea placomus*, *Primnoa resedaeformis*.

**Prosobranchs:** *Eulima bilineata*, *Trophonopsis barvicensis*, *Trophonopsis clathratus*, *Jujubinus clelandi*, *Gibbula tumida*, *Margarites groenlandicus*, *Hinia incrassata*, *Neptunea despecta*, *Anatoma crispata*, *Emarginula fissura*, *Emarginula crassa*, *Puncturella noachina*, *Iothia fulva*, *Epitonium greenlandicum*, *Capulus ungaricus*, *Trichotropis borealis*, *Buccinum undatum*, *Hemiaclis ventrosa*, *Alvania abyssicola*, *Alvania jeffreysi*, *Onoba semicostata*, *Skenea rugulosa*, *Skenea basis-trata*.

**Ascidians:** *Ciona intestinalis*, *Ascidia conchilega*, *Ascidia obliqua*, *Polycarpa pomaria*.

**Stn. 71022.** 27 May. S of Ytterøya (32,33-19).

Depth: 250-150 m. Gear: Ockelmann dredge. Silt and some mineral sand.

**Prosobranchs:** *Anatoma crispata*, *Iothia fulva*, *Eulima bilineata*, *Melanella lubrica*, *Alvania jeffreysi*, *Alvania subsoluta*, *Cingula turgida*, *Eulima bilineata*.

**Stn. 71023.** 8 June. Brettingsnes (7-28).

Depth: 160-220 m. Gear: Chain dredge. Stony corals.

**Conspicuous animals:** *Lophelia pertusa*, *Paramuricea placomus*, *Capnella glomerata*, *Acesta excavata*, *Delectpectens vitreus*, *Leodice* sp., *Pandalus propinquus*.

**Prosobranchs:** *Anatoma crispata*, *Eulima bilineata*, *Emarginula crassa*, *Puncturella noachina*, *Lepeta caeca*, *Buccinum undatum*, *Iothia fulva*, *Gibbula tumida*, *Velutina velutina*, *Epitonium greenlandicum*, *Trophonopsis clathratus*, *Trophonopsis barvicensis*, *Alvania jeffreysi*, *Alvania cimicoides*, *Onoba semicostata*.

**Stn. 71024.** 8 June. Brettingsnes (7-28).

Depth: 60-10 m. Gear: Chain dredge. Pebbles and gravel.

**Conspicuous animals:** *Alcyonium digitatum*, *Placostegus bidentatus*, *Pomatoceros triqueter*, *Modiolus modiolus*, *Dendrodoa grossularia*.

**Polyphacophora:** *Callochiton septemvalvis*, *Acanthochitona crinitus*.

**Prosobranchs:** *Capulus ungaricus*, *Trophonopsis barvicensis*.

**Ascidians:** *Dendrodoa grossularia*.

**Stn. 71025.** 8 June. Stjørnfjorden (8-25).

Depth: 220 m. Gear: Agazzis trawl. Soft bottom, clay.

**Conspicuous animals:** *Brissopsis lyrifera*, *Stichopus tremulus*, *Calocaris macandreae*.

- Stn. 71026.** 9 June. Stjørnfjorden.  
Depth: 200 m. Gear: Trawl. Soft bottom.  
**Conspicuous animals:** *Pandalus borealis*, *Phasiphaea tarda*, *Calocaris macandreae*,  
*Entmopterus spinax*.
- Stn. 71027.** 9 June. Brettingsnes (7-28).  
Depth: 150-200 m. Gear: Chain dredge. Hard bottom, stony corals.  
**Conspicuous animals:** *Tragosia* sp.  
**Prosobranchs:** *Calliostoma formosa*.
- Stn. 71028.** 9 June. Selva (5,6-30).  
Depth: 150-100 m. Gear: Chain dredge. Rocky bottom.
- Stn. 71029.** 9 June. Selva (5-30).  
Depth: 150-50 m. Gear: Chain dredge. Pebbles.  
**Polyplacophora:** *Callochiton septemvalvis*, *Tonicella rubra*.  
**Prosobranchs:** *Acmaea testudinalis*, *Philbertia linearis*, *Buccinum undatum*.
- Stn. 71029b.** 10 June. Flesa (8-26).  
Depth: 20 m. Gear: Triangular dredge. Pebbles and stones.
- Stn. 71030.** 10 June. Flesa (8-26).  
Depth: 130-90 m. Gear: Triangular dredge. Muddy bottom.  
**Conspicuous animals:** *Amphiura chiajei*, *Amphilepis filiformis*.
- Stn. 71031.** 10 June. Steilesteinene lighthouse, Stjørnfjorden.  
Depth: 100-50 m. Gear: Triangular dredge. Pebbles with sand.  
**Conspicuous animals:** *Astarte* sp., *Ciona intestinalis*, *Alvania cimicoides*.  
**Prosobranchs:** *Puncturella noachina*, *Iothia fulva*, *Jujubinus clelandi*,  
*Turritella communis*, *Capulus ungaricus*, *Lunatia montagui*,  
*Buccinum undatum*, *Neptunea despecta*, *Trophonopsis barvi-*  
*cencis*, *Colus islandicus*, *Eulimella scillae*, *Eulima bilineata*.  
**Ascidians:** *Ciona intestinalis*.
- Stn. 71080.** 24 Aug. Flakgalten (14-40,41).  
Depth: 40-10 m. Gear: Triangular dredge. Pebbles, stones, Crustose coralines.  
**Conspicuous animals:** *Modiolus modiolus*.  
**Polyplachopora:** *Tonicella rubra*.  
**Prosobranchs:** *Velutina velutina*, *Philbertia linearis*, *Emarginula fissura*,  
*Puncturella noachina*, *Acmaea virginea*, *Lepeta caeca*, *Iothia*  
*fulva*, *Margarites groenlandicus*, *Jujubinus clelandi*, *Gibbula*  
*cineraria*, *Gibbula tumida*, *Trichotropis borealis*, *Lunatia*  
*alderi*, *Margarites helycinus*, *Lunatia montagui*, *Aporrhais*  
*pespelecani*, *Eulima bilineata*. *Alvania cimicoides*, *Manzonia*  
*zetlandica*, *Buccinum undatum*, *Onoba semicostata*.  
**Ascidians:** *Ciona intestinalis*, *Ascidia conchilega*.

**Stn. 71081.** 24 Aug. Frøsetskjærene (13-42).

Depth: 60-25 m. Gear: Triangular dredge. Silt and clay with some pebbles and stones.

**Conspicuous animals:** *Haploops* sp.

**Prosobranchs:** *Anatoma crispata*, *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Trophonopsis barvicensis*, *Eulima bilineata*.

**Ascidians:** *Eudistoma vitreum*, *Rhopalaea nordgaardi*, *Ascidia conchilega*, *Ascidia obliqua*.

**Stn. 71082.** 24 Aug. Rydningsberget - Halseskjærene, Orkdalsfjorden (11-43).

Depth: 400 m. Gear: Ockelmann dredge. Clay.

**Stn. 71083.** 24 Aug. Geitastranda, Orkdalsfjorden (9-46).

Depth: 40 m. Gear: Triangular dredge. Pebbles and stones.

**Conspicuous animals:** *Astarte* spp., *Psilaster andromeda*.

**Prosobranchs:** *Turritella communis*.

**Stn. 71084.** 24 Aug. Aastrand, Orkdalsfjorden (9-46).

Depth: 170-130 m. Gear: Triangular dredge. Clay.

**Prosobranchs:** *Lepeta caeca*.

**Stn. 71085.** 24 Aug. Sandløkken, Orkdalsfjorden (10-47).

Depth: 40 m. Gear: Triangular dredge. Pebbles, gravel.

**Prosobranchs:** *Lepeta caeca*.

**Stn. 71086.** 24 Aug. Sildværet, Orkdalsfjorden (10-47).

Depth: 20 m. Gear: Triangular dredge. Pebbles, gravel. Much dead material.

**Stn. 71087.** 24 Aug. Thamshavn, Orkdalsfjorden (8-48).

Depth: 140 m. Gear: Ockelmann dredge. Soft bottom.

**Prosobranchs:** *Lunatia montagui*.

**Stn. 71088.** 25 Aug. Lundsneset, Gaulosen (11-46).

Depth: 60-40 m. Gear: Triangular dredge. Clay and silt.

**Conspicuous animals:** *Cardium* sp., *Modiolus modiolus*, *Cyprina islandica*.

**Prosobranchs:** *Lepeta caeca*, *Jujubinus clelandi*, *Gibbula tumida*, *Lacuna vincta*, *Turritella communis*.

**Stn. 71089.** 25 Aug. Stykkerne, Gaulosen (11-46).

Depth: 60-20 m. Gear: Triangular dredge. Clay and silt.

**Conspicuous animals:** Polychaetes, *Ophiuria sarsi*, *Virgularia mirabilis*, *Pennatula phosphorea*.

**Prosobranchs:** *Acmaea testudinalis*, *Lacuna vincta*.

**Stn. 71090.** 25 Aug. Svalnestangen, Gaulosen (13-48).

Depth: 80- 40 m. Gear: Triangular dredge. Clay and silt.

**Ascidians:** *Corella parallelogramma*.

**Stn. 71091.** 25 Aug. Gaulosen (14-48).

Depth: 170 m. Gear: Ockelmann dredge. Clay.

**Stn. 71092.** 25 Aug. Steinshylla, Gaulosen (13-46).

Depth: 150-100 m. Gear: Triangular dredge. Clay with some silt.

**Conspicuous animals:** Polychaetes.

**Stn. 71093.** 25 Aug. Komstein, Orkdalsfjorden (10-44).

Depth: 90-40 m. Gear: Triangular dredge. Gravel and pebbles.

**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Trivia arctica*.

**Pyramidellidae:** *Eulimella scillae*.

**Ascidians:** *Ascidia conchilega*, *Ascidia obliqua*, *Ascidiella scabra*.

**Stn. 71094.** 25 Aug. Geitneset (10-41).

Depth: 30-60 m. Gear: Triangular dredge. Sand, shell and some stones.

**Conspicuous animals:** *Tragosia* sp., *Geodia* sp., *Paramuricea placomus*.

**Polyplacophora:** *Tonicella marmorea*.

**Prosobranchs:** *Puncturella noachina*, *Acmaea virginea*, *Iothia fulva*, *Gibbula cineraria*, *Gibbula tumida*, *Trichotropis borealis*, *Lunatia montagui*, *Lunatia alderi*, *Hinia incrassatus*, *Hinia pygmaeus*.

**Ascidians:** *Ascidia obliqua*, *Corella parallelogramma*, *Ascidia obliqua*.

**Stn. 71095.** 26 Aug. Røberg (10-38)

Depth: 200-150 m. Gear: Triangular dredge. Clay. Some stony corals.

**Conspicuous animals:** *Tragosia* sp., *Phakellia* sp., *Lophelia pertusa* (dead).

**Prosobranchs:** *Emarginula crassa*, *Puncturella noachina*, *Lacuna vineta*, *Neptunea despecta*.

**Ascidians:** *Rhopalaea nordgaardi*, *Ascidia virginea*, *Ascidia obliqua*.

**Stn. 71096.** 26 Aug. Storneset, Røberg (10-38)

Depth: 40-60 m. Gear: Triangular dredge. Dead shell and gravel.

**Polyplacophora:** *Hanleya hanleyi*.

**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Trophonopsis barvicensis*.

**Pyramidellidae:** *Chrysallida obtusa*.

**Ascidians:** *Didemnum* sp., *Ascidia conchilega*, *Ascidia obliqua*.

**Stn. 71097.** 26 Aug. Storneset, Røberg (10-38).

Depth: 20-30 m. Gear: Triangular dredge. Pebbles.

**Polyplacophora:** *Tonicella marmorea*.

**Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Acmaea virginea*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Buccinum undatum*.

**Ascidians:** *Ascidia mentula*.

**Stn. 71098.** 26 Aug. Røberg (10-38).

Depth: 50-100 m. Gear: Triangular dredge. Pebbles, gravel and corals.

**Conspicuous animals:** *Paramuricea placomus*, *Primnoa resaediformis*.

**Prosobranchs:** *Anatoma crispata*, *Emarginula crassa*, *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Gibbula tumida*, *Velutina velutina*, *Lacuna vincta*.

**Ascidians:** *Synoicum pulmonaria*, *Didemnum albidum*, *Rhopalaea nordgaardi*, *Corella parallelogramma*, *Ascidia mentula*, *Ascidia conchilega*, *Ascidia virginea*, *Ascidia obliqua*, *Dendrodoa grossularia*, *Polycarpa pomaria*, *Pyura tessellata*.

**Stn. 71099.** 26 Aug. Præstbukta, Røberg (11-38).

Depth: 30 m. Gear: Rektangular dredge. Stones and pebbles.

**Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Buccinum undatum*.

**Ascidians:** *Ciona intestinalis*, *Ascidia mentula*, *Ascidia virginea*, *Ascidia obliqua*.

**Stn. 71100.** 26 Aug. Trondheimsfjorden (13-40).

Depth: 490 m. Gear: Ockelmann dredge. Soft bottom (clay).

**Conspicuous animals:** *Sacculina*-like foraminiferans.

**Stn. 71101.** 5 Oct. Østmarkneset (19,20-40).

Depth: 40-20 m. Gear: Triangular dredge. Shell and gravel.

**Conspicuous animals:** Polychaetes, *Munida* sp., Paguridae.

**Prosobranchs:** *Puncturella noachina*, *Acmaea testudinalis*, *Lepeta caeca*, *Iothia fulva*, *Turritella communis*, *Aporrhais pespelecani*, *Lunatia montagui*, *Lunatia pallida*, *Neptunea despecta*, *Hinia incrassatus*, *Eulima bilineata*, *Onoba semicostata*, *Alvania punctura*.

**Ascidians:** *Polyclinum aurantium*, *Ciona intestinalis*.

**Stn. 71102.** 5 Oct. Østmarkneset (20-40).

Depth: 80-50 m. Gear: Triangular dredge. Gravel, mineral sand and clay.

**Conspicuous animals:** Nemerteans, polychaetes.

**Prosobranchs:** *Trichotropis borealis*.

**Stn. 71103.** 5 Oct. Storegrunn (19-37).

Depth: 20-25 m. Gear: Triangular dredge. Rocky bottom with stones and pebbles.

**Conspicuous animals:** Poriferans.

**Prosobranchs:** *Puncturella noachina*, *Acmaea virginea*, *Lepeta caeca*, *Iothia fulva*, *Buccinum undatum*, *Neptunea despecta*.

**Ascidians:** *Ciona intestinalis*, *Ascidia mentula*.

**Stn. 71104.** 5 Oct. Ambornes (19-33).

Depth: 40-50 m. Gear: Triangular dredge. Shell, gravel, and sand.

**Conspicuous animals:** *Modiolus modiolus*.

**Polyplocophora:** *Hanleya hanleyi*.

- Prosobranchs:** *Puncturella noachina*, *Acmaea virginea*, *Eulima bilineata*, *Trophonopsis barvicensis*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Gibbula cineraria*, *Gibbula tumida*, *Margarites groenlandicus*, *Lacuna vineta*, *Capulus ungaricus*, *Velutina velutina*, *Neptunea despecta*, *Alvania cimicoides*, *Onoba semicostata*.
- Ascidians:** *Ascidia mentula*, *Ascidia virginea*.
- Stn. 71105.** 6 Oct. Høvringen (17-40).  
Depth: 60-40 m. Gear: Triangular dredge. Stones, sand, shell-gravel and silt.
- Conspicuous animals:** *Thyone* sp., *Aphrodite* sp.
- Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Iothia fulva*, *Trivia arctica*.
- Ascidians:** *Ascidia obliqua*.
- Stn. 71106.** 6 Oct. Høvringen (17-40,41).  
Depth: 100-70 m. Gear: Triangular dredge. Pebbles, gravel, silt, clay, slag.
- Conspicuous animals:** Maldanidae, *Stichopus tremulus*.
- Ascidians:** *Styela coriacea*.
- Stn. 71107.** 6 Oct. Holmgrunnene (18-40).  
Depth: 8-5 m. Gear: Triangular dredge (2 samples).
- Conspicuous animals:** *Echinus* sp., *Ophiocomina nigra*, *Modiolus modiolus*.
- Polyplacophora:** *Tonicella rubra*.
- Prosobranchs:** *Acmaea testudinalis*, *Acmaea virginea*, *Gibbula cineraria*, *Margarites helycinus*, *Margarites groenlandicus*.
- Stn. 71108.** 6 Oct. Holmgrunnene (19-40).  
Depth: 90-70 m. Gear: Triangular dredge. Clay, organic debris, mud.
- Conspicuous animals:** *Stichopus tremulus*.
- Ascidians:** *Ciona intestinalis*.
- Stn. 71109.** 6 Oct. Munkholmen (18-41).  
Depth: 80-70 m. Gear: Triangular dredge. Stones, pebbles, gravel, mud, pieces of broken bottles.
- Conspicuous animals:** *Hyas coarctatus*.
- Polyplacophora:** *Hanleya hanleyi*.
- Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Aporrhais pespelicani*, *Velutina velutina*, *Trophonopsis barvicensis*, *Philbertia linearis*, *Neptunea despecta*.
- Ascidians:** *Ascidia virginea*.
- Stn. 71110.** 6 Oct. Trondheimsfjorden (18-38).  
Depth: 280 m. Gear: Ockelmann dredge. Mud, detritus.
- Prosobranchs:** *Puncturella noachina*, *Alvania subsoluta*.

## 1972

**Stn. 72001.** 14 March. Saksvikskjær (22-41).

Depth: 25-20 m. Gear: Triangular dredge. Stones, pebbles.

**Prosobranchs:** *Puncturella noachina*, *Acmaea virginea*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Buccinum undatum*, *Hinia incrassatus*.

**Ascidians:** *Ciona intestinalis*.

**Stn. 72002.** 14 March. Saksvikskjær (22-41).

Depth: 40-20 m. Gear: Triangular dredge. Stones, pebbles and some mud.

**Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Velutina velutina*, *Iothia fulva*, *Jujubinus clelandi*, *Trivia arctica*, *Turritella communis*, *Capulus ungaricus*, *Hinia incrassatus*, *Aporrhais pespelecani*, *Lunatia alderi*, *Eulima bilineata*.

**Ascidians:** *Ciona intestinalis*.

**Stn. 72003.** 14 March. Strindfjorden (21-38).

Depth: 220 m. Gear: Detritus sledge. Silt, clay, foraminiferans.

**Conspicuous animals:** *Stichopus tremulus*, *Astropecten irregularis*.

**Prosobranchs:** *Haliella stenostoma*, *Alvania subsoluta*.

**Stn. 72004.** 14 March Haugberget (24-41).

Depth: 60-40 m. Gear: Triangular dredge. Clay.

**Conspicuous animals:** *Stichopus tremulus*, *Astropecten irregularis*.

**Prosobranchs:** *Aporrhais pespelecani*, *Lunatia alderi*, *Eulima bilineata*.

**Ascidians:** *Ciona intestinalis*, *Ascidia conchilega*, *Ascidiella aspersa*.

**Stn. 72005.** 14 March. "Threshold", Stjørdalsfjorden (25-41).

Depth: 50-30 m. Gear: Triangular dredge. Stones, pebbles, silt and clay.

**Prosobranchs:** *Puncturella noachina*, *Iothia fulva*, *Trivia arctica*, *Alvania cimicoides*.

**Ascidians:** *Ascidia virginea*.

**Stn. 72006.** 14 March. Flatholmen, Stjørdalsfjorden (27-41).

Depth: 40 m. Gear: Triangular dredge. Pebbles.

**Prosobranchs:** *Lepeta caeca*.

**Stn. 72007.** 14 March. Flatholmen, Stjørdalsfjorden (27-41).

Depth: 40-15 m. Gear: Triangular dredge. Stones, pebbles.

**Prosobranchs:** *Puncturella noachina*, *Acmaea virginea*, *Lepeta caeca*, *Iothia fulva*, *Hinia incrassatus*, *Jujubinus clelandi*, *Gibbula cineraria*, *Gibbula tumida*, *Margarites groenlandicus*, *Turritella communis*, *Lunatia alderi*, *Lacuna vincta*, *Trichotropis borealis*, *Aporrhais pespelecani*, *Hinia pygmaeus*, *Buccinum undatum*, *Philberthia* sp.

**Ascidians:** *Ascidia virginea*.



- Stn. 72008.** 15 March. Steinvikholmen, Åsenfjorden (27-35).  
 Depth: 50 m. Gear: Triangular dredge. Clay, silt.  
**Conspicuous animals:** *Brissopsis lyrifera*, *Ctenodiscus crispatus*.  
**Prosobranchs:** *Lepeta caeca*, *Haliella stenostoma*, *Alvania subsoluta*.  
**Ascidians:** *Ascidiella aspersa*.
- St. 72009.** 15 March. Fiskvik, Åsenfjorden (26-37).  
 Depth: 40-30 m. Gear: Triangular dredge. Clay, empty shells.  
**Conspicuous animals:** *Ctenodiscus crispatus*.  
**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Turritella communis*,  
*Capulus ungaricus*.  
**Pyramidellidae:** *Eulimella scillae*.
- Stn. 72010.** 15 March. Åsenfjorden (25-36).  
 Depth: 80-60 m. Gear: Detritus sledge and triangular dredge (2 samples). Stones,  
 pebbles, sand.  
**Prosobranchs:** *Aclis sarsi*, *Alvania jeffreysi*, *Puncturella noachina*, *Lepeta*  
*caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Lunatia montagui*,  
*Neptunea despecta*, *Melanella lubrica*, *Trophonopsis barvi-*  
*censis*, *Oenopota violacea*, *Anatoma crispata*.  
**Pyramidellidae:** *Eulimella scillae*.  
**Ascidians:** *Ciona intestinalis*, *Polycarpa pomaria*.
- Stn. 72011.** 15 March. Saltøy, Åsenfjorden (28-34).  
 Depth: 15-20 m. Gear: Triangular dredge. Shell, gravel.  
**Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Lepeta caeca*,  
*Jujubinus clelandi*, *Gibbula cineraria*, *Turritella communis*,  
*Aphorrhais pespelecani*, *Velutina velutina*.  
**Ascidians:** *Ascidia conchilega*.
- Stn. 72012.** 15 March. Langstein, Åsenfjorden (29-34)  
 Depth: 50 m. Gear: Triangular dredge. Clay.  
**Conspicuous animals:** *Ctenodiscus crispatus*.  
**Ascidians:** *Corella parallelogramma*.
- Stn. 72013.** 15 March. Paradisbukten, Åsenfjorden (29-34).  
 Depth: 10-20 m. Gear: Triangular dredge. Clay.  
**Conspicuous animals:** *Ctenodiscus crispatus*.  
**Prosobranchs:** *Turritella communis*.  
**Ascidians:** *Ascidiella scabra*.
- Stn. 72014.** 15 March. Skurvegrunn, Åsenfjorden (29-34).  
 Depth: 10-20 m. Gear: Triangular dredge. Shells and pebbles.  
**Polyplacophora:** *Hanleya hanleyi*.  
**Prosobranchs:** *Puncturella noachina*, *Acmaea virginea*, *Lepeta caeca*, *Iothia*  
*fulva*, *Eulimella macandreae*.  
**Ascidians:** *Ascidia virginea*.

- Stn. 72015.** 15 March. Furuholmen, Åsenfjorden (28-34).  
Depth 15-20 m. Gear: Triangular dredge. Stones and pebbles.  
**Prosobranchs:** *Emarginula fissura*, *Acmaea testudinalis*, *Acmaea virginea*,  
*Lepeta caeca*, *Iothia fulva*.
- Stn. 72016.** 15 March. Nysbeinet, Åsenfjorden (28-33).  
Depth 80-12 m. Gear: Stones, pebbles and gravel.  
**Polyplacophora:** *Hanleya hanleyi*.  
**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Jujubinus clelandi*,  
*Gibbula tumida*, *Lunatia alderi*, *Trophonopsis barvicensis*,  
*Margarites groenlandicus*, *Turritella communis*, *Aphorrhais pespelecani*, *Hinia incrassatus*.
- Stn. 72017.** 15 March. Åsenfjorden (28-32).  
Depth: 110 m. Gear: Detritus sledge. Silt and clay with faecal pellets.  
**Prosobranchs:** *Eulima stenostoma*, *Thesbia nana*.
- Stn. 72018.** 15 March. Tørø, Åsenfjorden (29-31).  
Depth: 40 m. Gear: Triangular dredge. Clay and slag with organic (wooden) material.  
**Conspicuous animals:** *Ctenodiscus crispatus*.  
**Prosobranchs:** *Puncturella noachina*, *Lunatia pallida*, *Buccinum undatum*,  
*Natica clausa*.  
**Ascidians:** *Ascidiella scabra*.
- Stn. 72019.** 16 March. Steinsgrunn, Åsenfjorden (27-33).  
Depth: 50-15 m. Gear: Triangular dredge. Stones and pebbles.  
**Conspicuous animals:** *Modiolus modiolus*.  
**Prosobranchs:** *Puncturella noachina*, *Acmaea testudinalis*, *Lepeta caeca*.  
**Ascidians:** *Ascidia virginea*.
- Stn. 72020.** 16 March. Frosta, Åsenfjorden (27-33).  
Depth: 55-35 m. Gear: Triangular dredge. Stones, pebbles and some clay.  
**Conspicuous animals:** *Ctenodiscus crispatus*.  
**Polyplacophora:** *Leptochiton alveolus*.  
**Prosobranchs:** *Anatoma crispata*, *Emarginula fissura*, *Puncturella noachina*,  
*Iothia fulva*, *Lepeta caeca*, *Turritella communis*, *Aphorrhais pespelecani*, *Neptunea despecta*.
- Stn. 72021.** 16 March. Vikleiret, Åsenfjorden (25-34).  
Depth 20-25 m. Gear: Triangular dredge. Sand and clay.  
**Prosobranchs:** *Lepeta caeca*, *Turritella communis*, *Aphorrhais pespelecani*.  
**Ascidians:** *Pelonaia corrugata*.
- Stn. 72022.** 16 March. Hernesøren (25-35).  
Depth: 25-35 m. Gear: Triangular dredge. Clay, sand.  
**Conspicuous animals:** *Stichopus tremulus*.

- Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Margarites helycinus*, *Lacuna vincta*, *Turritella communis*, *Aporrhais pespelecani*, *Melanella* sp.
- Pyramidellidae:** *Odostomia unidentata*, *Eulimella scillae*.
- Ascidians:** *Ciona intestinalis*.
- Stn. 72023.** 16 March. Øksningen (25-35).  
Depth: 40-30 m. Gear: Triangular dredge. Stones and clay.
- Polyplacophora:** *Leptochiton alveolus*.
- Prosobranchs:** *Onoba semicostata*, *Anatoma crispata*, *Puncturella noachina*, *Emarginula fissura*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Eumetula arctica*, *Alvania cimicoides*, *Neptunea despecta*.
- Ascidians:** *Ascidiella scabra*.
- Stn. 72024.** 16 March. Strindfjorden (21-37).  
Depth: 200-250 m. Gear: Detritus sledge. Fine clay.
- Conspicuous animals:** *Amphiura* sp.
- Prosobranchs:** *Haliella stenostoma*, *Alvania subsoluta*.
- Stn. 72025.** 21 March. Grav, Ytterøya (31-23).  
Depth: 150-70 m. Gear: Triangular dredge. Gravel and clay.
- Conspicuous animals:** Porifera (*Geodia* sp.), *Stichopus tremulus*.
- Ascidians:** *Rhopalaea nordgaardii*, *Ascidia conchilega*, *Ascidia obliqua*, *Styela coricea*, *Polycarpa pomaria*.
- Stn. 72026.** 21 March. Hvitingen (31-25).  
Depth: 120-75 m. Gear: Triangular dredge. Silt, clay and gravel.
- Ascidians:** *Ascidia conchilega*, *Ascidia virginea*, *Ascidia obliqua*, *Polycarpa pomaria*.
- Stn. 72027.** 21 March. Haugsandgrunnen (32-24).  
Depth: 50-25 m. Gear: Triangular dredge. Stones, pebbles, gravel, sand and clay.
- Conspicuous animals:** *Modiolus modiolus*.
- Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Velutina velutina*, *Admete viridula*, *Neptunea despecta*.
- Ascidians:** *Synoicum pulmonaria*, *Ascidia mentula*, *Ascidia conchilega*, *Ascidia obliqua*.
- Stn. 72028.** 21 March. S. Hestøgrunnen (33-24).  
Depth: 30-10 m. Gear: Triangular dredge. Stones, shell and gravel.
- Prosobranchs:** *Odostomia* sp., *Trichtropis borealis*, *Acmaea virginea*.
- Ascidians:** *Styela rustica*.

**Stn. 72029.** 21 March. Valøya, Fiborg (34-24).

Depth: 50 m. Gear: Triangular dredge.

**Conspicuous animals:** *Thyasira* sp., *Ctenodiscus crispatus*.

**Stn. 72030.** 22 March. Indre Hestøygrunnen (34-23).

Depth: 60-50 m. Gear: Triangular dredge. Stones, pebbles, shell, gravel and clay.

**Prosobranchs:** *Anatoma crispata*, *Emarginula fissura*, *Puncturella noachina*, *Iothia fulva*, *Velutina velutina*, *Lunatia montagui*, *Eulima bilineata*, *Admete viridula*, *Chrysallida decusata*, *Oenopota nobilis*.

**Ascidians:** *Ascidia conchilega*, *Ascidia obliqua*, *Polycarpa pomaria*, *Molgula occulta*.

**Stn. 72031.** 22 March. Indre Hestøgrunnen (34-22).

Depth: 40-60 m. Gear: Triangular dredge. Pebbles, shell, gravel and clay.

**Conspicuous animals:** *Modiolus modiolus*.

**Prosobranchs:** *Anatoma crispata*, *Lepeta caeca*, *Emarginula fissura*, *Iothia fulva*, *Puncturella noachina*, *Chrysallida obtusa*, *Lunatia pallida*, *Neptunea despecta*.

**Ascidians:** *Ascidia virginea*, *Dendrodoa grossularia*, *Polycarpa pomaria*.

**Stn. 72032.** 22 March. Øvrebukt, Ytterøya (34-20).

Depth: 100-90 m. Gear: Triangular dredge. Clay.

**Stn. 72033.** 22 March. Øvrebukt, Ytterøya (34-20).

Depth: 60-50 m. Gear: Triangular dredge. Clay.

**Stn. 72034.** 22 March. Viken, Levanger (36-22).

Depth: 40-20 m. Gear: Triangular dredge. Clay, shell and gravel.

**Conspicuous animals:** *Modiolus modiolus*.

**Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Lepeta caeca*, *Eulima bilineata*, *Iothia fulva*, *Jujubinus clelandi*, *Velutina velutina*, *Alvania punctura*, *Alvanica cimicoides*, *Aporrhais pespelecani*.

**Ascidians:** *Ciona intestinalis*, *Ascidia mentula*, *Ascidia obliqua*, *Dendrodoa grossularia*.

**Stn. 72035.** 22 March. Fjordgrunnskjær (37-19).

Depth: 25-5 m. Gear: Triangular dredge. Stones and pebbles with some clay.

**Conspicuous animals:** *Modiolus modiolus*.

**Polyplacophora:** *Tonicella rubra*.

**Prosobranchs:** *Acmaea testudinalis*, *Acmaea virginea*, *Margarites helycinus*, *Margarites groenlandicus*, *Bittium reticulatum*, *Alvania punctura*, *Chrysallida spiralis*, *Chrysallida obtusa*, *Gibbula cineraria*, *Onoba striata*.

**Ascidians:** *Ascidia conchilega*.

**Stn. 72036.** 22 March. Trones - Hylla (38-18).

Depth: 250-200 m. Gear: Triangular dredge. Clay.

**Conspicuous animals:** *Brissopsis lyrifera*.

**Polyplacophora:** *Tonicella rubra*.

**Prosobranchs:** *Acmaea virginea*.

**Stn. 72037.** 22 March. Sund (37-16).

Depth: 12-14 m. Gear: Triangular dredge. Silt, sand, shell and gravel.

**Prosobranchs:** *Gibbula cineraria*, *Turritella communis*, *Aporrhais pespelicani*, *Velutina velutina*.

**Stn. 72038.** 22 March. Høsholmen (37-17).

Depth: 20-10 m. Gear: Triangular dredge. Stones, pebbles and clay.

**Prosobranchs:** *Acmaea virginea*, *Lepeta caeca*, *Turritella communis*, *Nephtea despecta*, *Trichotropis borealis*, *Aporrhais pespelicani*, *Onoba semicostata*.

**Stn. 72039.** 11. April, Esviknes. (9-35).

Depth: 80-40 m. Gear: Triangular dredge. Shell, gravel.

**Conspicuous animals:** *Geodia* sp., *Stichopus tremulus*.

**Prosobranchs:** *Puncturella noachina*, *Iothia fulva*, *Jujubinus clelandi*, *Gibbula tumida*, *Lunatia alderi*, *Cerithiella metula*, *Capulus ungaricus*, *Trivia arctica*, *Trichotropis borealis*, *Hinia pygmaeus*, *Lunatia montagui*, *Eulima bilineata*, *Anatoma crispata*, *Alvania cimicoides*.

**Ascidians:** *Ascidia conchilega*, *Ascidia virginea*, *Ascidia obliqua*, *Polycarpa pomaria*, *Pyura tessellata*.

**Stn. 72040.** 11 April. Vikbukt (9-35).

Depth: 80-50 m. Gear: Triangular dredge. Silt.

**Prosobranchs:** *Puncturella noachina*, *Turritella communis*, *Lunatia montagui*, *Lunatia alderi*, *Melanella stenostoma*.

**Pyramidellidae:** *Eulimella scillae*.

**Stn. 72041.** 12 April. Vorpflua (6-29).

Depth: 40-10 m. Gear: Triangular dredge. Pebbles with crustose coralines.

**Conspicuous animals:** *Modiolus modiolus*, *Echinus* sp.

**Prosobranchs:** *Acmaea testudinalis*, *Puncturella noachina*.

**Stn. 72042.** 12 April. Agdenesflua (6-29).

Depth: 75-40 m. Gear: Triangular dredge. Rocky bottom with some stones.

**Conspicuous animals:** *Cucumaria frondosa*, *Echinus* sp., *Paramuricea placomus*.

**Prosobranchs:** *Emarginula fissura*.

**Ascidians:** *Aplidium glabrum*, *Pyura tessellata*, *Molgula siphonalis*.

**Stn. 72043.** 12 April. Agdenesflua (6-29).

Depth: 80-50 m. Gear: Triangular dredge. Hard bottom (one stone).

**Conspicuous animals:** *Cucumaria frondosa*, *Echinus* sp.

- Prosobranchs:** *Emarginula fissura*, *Margarites groenlandicus*, *Lunatia montagui*, *Neptunea despecta*.
- Ascidians:** *Ascidia conchilega*, *Styela coriacea*, *Boltenia echinata*, *Molgula siphonalis*.
- Stn. 72044.** 12 April. Brettingsnes (7-28).  
Depth: 150-60 m. Gear: Triangular dredge. Hard bottom.
- Conspicuous animals:** *Geodia* sp. with *Hanleya nagelfar*, *Primnoa resaediformis* with *Gorgonocephalus caputmedusae*, *Paramuricea placomus*.
- Polyplacophora:** *Hanleya nagelfar*.
- Prosobranchs:** *Velutina velutina*, *Hinia incrassatus*.
- Ascidians:** *Synoecium pulmonaria*, *Ascidia conchilega*, *Polycarpa pomaria*, *Boltenia echinata*.
- Stn. 72045.** 12. April. Brettingsnes (7-28).  
Depth: 50-20 m. Gear: Triangular dredge. Gravel bottom.
- Conspicuous animals:** *Geodia* sp., *Modiolus modiolus*.
- Prosobranchs:** *Emarginula fissura*, *Emarginula crassa*, *Jujubinus clelandi*, *Capulus ungaricus*, *Trichotropis borealis*.
- Ascidians:** *Eudistoma vitreum*, *Didemnum albidum*, *Ciona intestinalis*, *Ascidia conchilega*, *Ascidia obliqua*, *Dendrodoa grossularia*, *Styela coriacea*, *Boltenia echinata*, *Pyura tessellata*.
- Stn. 72046.** 12 April. Hasselviken (7-29).  
Depth: 40-30 m. Gear: Triangular dredge. Shell and gravel.
- Prosobranchs:** *Hinia incrassatus*, *Emarginula fissura*, *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Neptunea despecta*, *Jujubinus clelandi*, *Aporrhais pespelicani*, *Turritella communis*, *Buccinum undatum*.
- Ascidians:** *Corella parallelogramma*, *Ascidia mentula*, *Ascidia conchilega*, *Ascidia virginea*, *Boltenia echinata*.
- Stn. 72047.** 12 April. Sørvik (7-31).  
Depth: 80-40 m. Gear: Triangular dredge. Hard bottom with pebbles.
- Conspicuous animals:** *Echinus* sp.
- Prosobranchs:** *Aporrhais pespelecani*, *Velutina velutina*, *Trivia arctica*.
- Ascidians:** *Synoecium pulmonaria*, *Ascidia mentula*, *Ascidia conchilega*, *Pyura tessellata*.
- Stn. 72048.** 12 April. Årlotten (7-31).  
Depth: 200-100 m. Gear: Triangular dredge. Sand, silt.
- Prosobranchs:** *Anatoma crispata*, *Emarginula crassa*, *Puncturella noachina*, *Eulima bilineata*.
- Ascidians:** *Aplidium pallidum*, *Polycarpa pomaria*.
- Stn. 72049.** 12 April. Årlotnes - Galgenes (7-30).  
Depth: 550 m. Gear: Detritus sledge. Clay.
- Prosobranchs:** *Buccinum humphreysianum*.

**Stn. 72050.** 13 April. Selva - Breivikskjærene (6-30).

Depth: 160-120 m. Gear: Triangular dredge (2 samples). Hard bottom.

**Conspicuous animals:** Poriferans, crinoids and ascidians.

**Prosobranchs:** *Emarginula crassa*.

**Ascidians:** *Eudistoma vitreum*, *Leptoclinides faeroensis*, *Rhopalaea nordgaardi*, *Ascidia obliqua*, *Polycarpa pomaria*, *Boltenia echinata*, *Pyura tessellata*.

**Stn. 72051.** 13 April. Selva (6-30).

Depth: 80-60 m. Gear: Triangular dredge. Shell gravel and sand.

**Polyplacophora:** *Hanleya hanleyi*.

**Prosobranchs:** *Alvania cimicoides*, *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Gibbula tumida*, *Lacuna vincta*, *Cerithiella arctica*, *Capulus ungaricus*, *Trichotropis borealis*, *Lunatia montagui*, *Trophonopsis clathratus*, *Bittium reticulatum*, *Trivia arctica*, *Eulima bilineata*, *Colus gracilis*, *Spirotropis monterosatoi*, *Rissoa membranacea*.

**Ascidians:** *Distaplia clavata*, *Ascidia conchilega*, *Ascidia virginea*, *Polycarpa pomaria*, *Boltenia echinata*.

**Stn. 72052.** 13 April. Kalurdalen (6-32).

Depth: 120-90 m. Gear: Triangular dredge. Shell gravel and sand.

**Conspicuous animals:** *Modiolus modiolus*.

**Polyplacophora:** *Hanleya hanleyi*, *Leptochiton alveolus*.

**Prosobranchs:** *Anatoma crispata*, *Iothia fulva*, *Emarginula fissura*, *Jujubinus clelandi*, *Puncturella noachina*, *Gibbula tumida*, *Lacuna vincta*, *Trivia arctica*, *Eulima bilineata*.

**Ascidians:** *Aplidium pallidum*, *Rhopalaea nordgaardi*, *Ascidia mentula*, *Styela coriacea*, *Pyura tessellata*.

**Stn. 72053.** 13. April. Årsteinnes (7-33).

Depth: 40-50 m. Gear: Triangular dredge. Small stones and shell gravel.

**Prosobranchs:** *Puncturella noachina*, *Acmaea virginea*, *Lepeta caeca*, *Iothia fulva*.

**Ascidians:** *Ascidia mentula*.

**Stn. 72054.** 13 April. Galgenes (8-32).

Depth: 200-50 m. Gear: Triangular dredge. Clay, sand, shell gravel. Much dead material.

**Prosobranchs:** *Scisurella crispata*, *Emarginula fissura*, *Emarginula crassa*, *Puncturella noachina*, *Jujubinus clelandi*, *Trichotropis borealis*, *Trivia arctica*, *Eulima bilineata*, *Balcis macrophthal-mica*.

**Stn. 72055.** 13 April. Havnenes, Selbekken (7-37).

Depth: 150-110 m. Gear: Triangular dredge. Sand and silt, but the dredge must also have touched hard bottom.

**Conspicuous animals:** *Geodia* sp., *Stichopus tremulus*.

- Prosobranchs:** *Emarginula fissura*, *Iothia fulva*, *Lacuna divaricata*, *Cerithiella arctica*, *Melanella stenostoma*, *Lunatia montaquii*, *Neptunea despecta*, *Eulima bilineata*, *Colus gracilis*.
- Stn. 72056.** 26 April. Korsholmfluene, Beitstadfjorden (33,34-13).  
Depth: 80-20 m. Gear: Triangular dredge. Stones, pebbles, and some mineral sand.
- Conspicuous animals:** Poriferans, *Stichopus tremulus*.
- Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Velutina velutina*, *Neptunea despecta*, *Melanella stenostoma*, *Admete viridula*.
- Ascidians:** *Ascidia conchilega*, *Ascidia virginea*, *Ascidia obliqua*, *Polycarpa pomaria*.
- Stn. 72057.** 26 April. Galgsøya, Beitstadfjorden (35-11).  
Depth: 60-30 m. Gear: Triangular dredge. Stones, pebbles, gravel, mineral sand and silt.
- Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Lepeta caeca*, *Jujubinus clelandi*, *Trichotropis borealis*, *Neptunea despecta*.
- Ascidians:** *Ascidia conchilega*.
- Stn. 72058.** 27 April. Kirknes - Låtra, Beitstadfjorden (35-12).  
Depth: 60 m. Gear: Triangular dredge. Clay.
- Stn. 72059.** 27 April. Hemresskjærene, Beitstadfjorden (35-10).  
Depth: 40-25 m. Gear: Triangular dredge. Stones and pebbles.
- Prosobranchs:** *Lepeta caeca*, *Iothia fulva*, *Jujubinus clelandi*, *Neptunea despecta*, *Spirotropis monterosatoi*.
- Ascidians:** *Ascidia conchilega*, *Ascidia virginea*, *Ascidia obliqua*.
- Stn. 72060.** 27 April. Steinkjerfjorden (37-8).  
Depth: 95 m. Gear: Triangular dredge. Clay.
- Conspicuous animals:** *Virgularia mirabilis*.
- Stn. 72061.** 27 April. Hoøyvågen, Beitstadfjorden (37-6).  
Depth: 40-18 m. Gear: Triangular dredge. Pebbles, silt, and clay. Some empty shells.
- Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*, *Jujubinus clelandi*, *Turritella communis*.
- Stn. 72062.** 27 April. Fjordgrunnen, Beitstadfjorden (36-6).  
Depth: 40-50 m. Gear: Triangular dredge. Stones, pebbles, silt and clay.
- Conspicuous animals:** Dead shells of *Glossus humanus*.
- Prosobranchs:** *Lepeta caeca*, *Neptunea despecta*, *Puncturella noachina*, *Anatoma crispata*.
- Ascidians:** *Ascidia conchilega*, *Dendrodoa grossularia*, *Polycarpa pomaria*.



- Stn. 72063.** 27 April. Fjordgrunnen, Beitstadjorden (36-6).  
Depth: 60-40 m. Gear: Triangular dredge. Pebbles, gravel, silt and clay.  
**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*.  
**Ascidians:** *Ascidia concilega*, *Dendrodoa grossularia*.
- Stn 72064.** 27. april. Ramberg - Sæterviken, Beitstadjorden, (35-6).  
Depth: 45-35 m. Gear: Triangular dredge. Stones, pebbles, gravel, silt and clay.  
**Prosobranchs:** *Puncturella noachina*.  
**Ascidians:** *Ascidiella scabra*, *Dendrodoa grossularia*, *Polycarpa pomaria*.
- Stn. 72065.** 27. April Inlet to Beistadsundet (35-6).  
Depth: 30 m. Gear: Triangular dredge. Rock, stones and pebbles.  
**Prosobranchs:** *Puncturella noachina*, *Iothia fulva*.  
**Ascidians:** *Ascidia conchilega*.
- Stn. 72066.** 28 April. Hjellebotn (37,38-1).  
Depth: 14 m. Gear: Detritus sledge. Clay, mud.  
**Conspicuous animals:** *Ophiura albida*, *Ophiura texturata*, *Corbula gibba*, Polychaetes, Ascidians.  
**Prosobranchs:** *Aporrhais pespelicani*, *Buccinum undatum*, *Oenopota turricula*.  
**Ascidians:** *Ciona intestinalis*, *Ascidia obliqua*, *Ascidiella aspersa*.
- Stn. 72067.** 28 April. Hjellebotn (37-2).  
Depth 20-15 m. Gear: Detritus sledge and triangular dredge (2 samples). Clay, mud.  
**Conspicuous animals:** *Haploops* sp., small *Modiolus modiolus*.  
**Prosobranchs:** *Hinia incrassatus*, *Buccinum undatum*.  
**Ascidians:** *Ciona intestinalis*, *Corella parallelogramma*, *Dendrodoa grossularia*, *Styela rustica*, *Boltenia echinata*.
- Stn.72068.** 28 April. Langset, Beistadsundet (36-3).  
Depth: 22 m. Gear: Triangular dredge. Clay.  
**Conspicuous animals:** *Ctenodiscus crispatus*.
- Stn. 72069.** 28. April. Rambergholmen, Beistadsundet (35-6).  
Depth: 40-20 m. Gear: Triangular dredge. Stones, pebbles and gravel with some clay.  
**Prosobranchs:** *Iothia fulva*, *Gibbula cineraria*, *Neptunea despecta*.
- Stn. 72070.** 28 April. Vaggen, Beitstadjorden (34-8).  
Depth: 80-40 m. Gear: Triangular dredge. Shell-gravel and silt, much dead material.  
**Prosobranchs:** *Puncturella noachina*, *Lepeta caeca*.  
**Ascidians:** *Didemnum albidum*, *Ascidia conchilega*, *Ascidiella scabra*, *Polycarpa pomaria*.

- Stn. 72071.** 28 April. Slåttaviken, Beitstadvfjorden (31-11).  
Depth: 60-30 m. Gear: Triangular dredge (2 samples). Sample 1: One large rock, few stones. Sample 2: Stones, pebbles, shell gravel, and some clay.
- Prosobranchs:** *Emarginula fissura*, *Puncturella noachina*, *Jujubinus clelandi*,  
*Aporrhais pespelecani*, *Melanella stenostoma*.
- Ascidians:** *Ascidiella scabra*.
- Stn. 72072.** 28 April. Beitstadvfjorden (31-12).  
Depth: 180 m. Gear: Detritus sledge. Clay.
- Prosobranchs:** *Gibbula tumida*, *Natica clausa*.
- Stn. 72073.** 28 April. Småseigrunnen, Beitstadvfjorden (30-13).  
Depth: 75-10 m. Gear: Triangular dredge. Stones and pebbles.
- Conspicuous animals:** *Geodia* sp., *Modiolus modiolus*.
- Polyplacophora:** *Tonicella rubra*.
- Prosobranchs:** *Gibbula tumida*, *Emarginula fissura*.
- Ascidians:** *Ascidia virginea*, *Ascidia obliqua*.
- Stn. 72074.** 28 April. Selsetviken, Skarnsundet (32-15).  
Depth: 200-100 m. Gear: Triangular dredge. Shell-gravel, silt and clay.
- Conspicuous animals:** *Geodia* sp.
- Polyplacophora:** *Leptochiton alvelus*.
- Prosobranchs:** *Puncturella noachina*, *Jujubinus clelandi*, *Trichotropis borealis*, *Neptunea despecta*, *Beringius turtoni*.
- Ascidians:** *Ascidia conchilega*, *Ascidia obliqua*, *Polycarpa pomaria*.
- Stn. 72075.** 27 June. Vanvikan (16-34).  
Depth: 150-100 m. Gear: Triangular dredge. Stones, pebbles, and some sand.
- Stn. 72076.** 27 June. Vanvikan (17-34).  
Depth: 200 m. Gear: Triangular dredge. Clay.
- Stn. 72077.** 27 June. Selligrunnen (21-31).  
Depth: 70-50 m. Gear: Triangular dredge. Stony corals.
- Conspicuous animals:** *Lophelia pertusa*.
- Prosobranchs:** *Alvania cimicoides*, *Velutina velutina*, *Neptunea despecta*,  
*Buccinum undatum*, *Emarginula fissura*, *Eumetula arctica*,  
*Puncturella noachina*, *Skenea peterseni*, *Anatoma crispata*,  
*Trichotropis borealis*.
- Ascidians:** *Diplosoma listerlanum*, *Ascidia conchilega*, *Ascidia virginea*,  
*Ascidia obliqua*, *Polycarpa pomaria*.
- Stn. 72078.** 27 June. Nordgrunnen (22-32).  
Depth: 50 m. Gear: Triangular dredge. Shell-gravel.
- Conspicuous animals:** *Modiolus modiolus*.
- Prosobranchs:** *Puncturella noachina*, *Jujubinus clelandi*, *Gibbula cineraria*,  
*Neptunea despecta*, *Anatoma crispata*, *Alvania cimicoides*,  
*Alvania jeffreysi*, *Skenea leavigata*, *Spirotropis monterosatoi*,

*Trophonopsis barvicensis, Eulima bilineata, Buccinum undatum.*

**Ascidians:** *Ascidia conchilega, Ascidiella aspersa, Polycarpa pomaria.*

**Stn. 72079.** 27 June. Klostertaren, Tautra lighthouse (23-32).

Depth: 50-15 m. Gear: Triangular dredge. Hard bottom with shell-gravel.

**Conspicuous animals:** *Cucumaria frondosa, Modiolus modiolus.*

**Prosobranchs:** *Acmaea virginea, Iothia fulva, Margarites groenlandicus, Buccinum undatum, Hinia incrassatus.*

**Ascidians:** *Ciona intestinalis, Corella parallelogramma, Ascidia virginea, Ascidia obliqua.*

**Stn. 72080.** 28 June. Bjørnås, Leksvika (23-29).

Depth 200-150 m. Gear: Triangular dredge. Pebbles, sand and clay.

**Conspicuous animals:** *Geodia* sp., Crinoidea.

**Ascidians:** *Ascidia conchilega, Ascidia obliqua, Dendrodoa grossularia, Polycarpa pomaria.*

**Stn. 72081.** 28 June. Bjørnås, Leksvika (23-29).

Depth: 150-75 m. Gear: Triangular dredge. Small stones and clay.

**Prosobranchs:** *Puncturella noachina.*

**Ascidians:** *Polycarpa pomaria.*

**Stn. 72082.** 28 June. Volden (25-26).

Depth: 10-50 m. Gear: Triangular dredge. Small stones, shell-gravel and clay.

**Conspicuous animals:** *Brissopsis lyrifera.*

**Prosobranchs:** *Puncturella noachina, Iothia fulva.*

**Stn 72083.** 28 June. Purkvikgrunnen (29-26).

Depth: 50-25 m. Gear: Triangular dredge. Stones, pebbles, shell-gravel and some clay.

**Conspicuous animals:** *Asterias rubens, Modiolus modiolus.*

**Prosobranchs:** *Emarginula fissura, Puncturella noachina, Lepeta caeca, Iothia fulva, Jujubinus clelandi, Velutina velutina, Trophonopsis clathratus, Buccinum undatum, Neptunea despecta, Trivia arctica.*

**Ascidians:** *Ascidia mentula, Ascidia virginea, Polycarpa pomaria.*

**Stn. 72084.** 28 June. Purkvikgrunnen (29-26).

Depth 25-28 m. Gear: Triangular dredge (2 samples). Hard bottom with some stones.

**Conspicuous animals:** Porifera, *Asterias rubens.*

**Polyplacophora:** *Tonicella rubra.*

**Prosobranchs:** *Puncturella noachina, Acmaea virginea, Iothia fulva, Margarites groenlandicus, Trivia arctica, Velutina velutina, Buccinum undatum, Anatomia crispata, Neptunea despecta, Hinia incrassatus.*

- Ascidians:** *Corella parallelogramma*, *Ascidia virginea*, *Ascidia obliqua*,  
*Polycarpa pomaria*.
- Stn. 72085.** 28 June. Purkvik - Kristvik (28-26,27).  
Depth: 260-230 m. Gear: Triangular dredge. Clay.  
**Prosobranchs:** *Alvania subsoluta*.
- Stn. 72086.** 29 June Fånesbukten (26-28).  
Depth: 150-75 m.. Gear: Triangular dredge. Pebbles, gravel, shellsand and clay.  
**Prosobranchs:** *Lepeta caeca*, *Iothia fulva*.  
**Ascidians:** *Ascidia obliqua*, *Polycarpa pomaria*.
- Stn. 72087.** 29 June. Flågrunnen, Fånes (27-29).  
Depth: 25-15 m. Gear: Triangular dredge. Hard bottom, stones, pebbles.  
**Polyplacophora:** *Tonicella marmorea*.  
**Prosobranchs:** *Acmaea virginea*, *Gibbula cineraria*, *Gibbula tumida*, *Margarites groenlandicus*, *Trichotropis borealis*, *Velutina velutina*,  
*Lepeta caeca*.  
**Ascidians:** *Ciona intestinalis*, *Corella parallelogramma*, *Styela rustica*,  
*Molgula siphonalis*.
- Stn. 72104.** 30. Aug. Geitneset - Tønnebukta (9,10-39,40).  
Depth: 500 m. Gear: Shrimp trawl. Clay.  
**Conspicuous animals:** *Stichopus tremulus*, *Bolocera* sp.  
**Prosobranchs:** *Alvania jeffreysi*.
- Stn. 72105.** 31 Aug. Vanvika (Breivik) (15-35).  
Depth: 300-370 m. Gear: Shrimp trawl. Soft bottom.  
**Conspicuous animals:** Fishes.
- Stn. 72106.** 31 Aug. Vanvikan - Høvringen (16,17-35,36,37,38).  
Depth: 460-400-460 m. Gear: Shrimp trawl. Clay.  
**Conspicuous animals:** *Stichopus tremulus*, *Calocaris macandreae*.  
**Prosobranchs:** *Enteroxenos oestergreni*, *Gibbula cineraria*.

## 1973

- Stn. 73001.** 23 March. Tautra - Leksvika (23-3).  
Depth: 200 m. Gear: Detritus sledge. Mud.  
**Conspicuous animals:** Ascidians.  
**Prosobranchs:** *Aclis sarsi*, *Admete viridula*, *Alvania abyssicola*, *Alvania jeffreysi*, *Alvania scrobiculata*, *Balcis platyacme*, *Thyphlomangelia nivalis*, *Taranis moerchi*, *Anatoma crispata*, *Bo-retrophon barvicencis*, *Cingula turgida*, *Ceithiella metula*, *Natica clausa*, *Skenea basistriata*, *Velutina velutina*.  
**Pyramidellidae:** *Eulimella gracilis*.  
**Ascidians:** *Ascidia obliqua*.
- Stn. 73002.** 29 March. Selligrunnen (21-31).

Depth: 50-80 m. Gear: Triangular dredge. Stony corals.

**Conspicuous animals:** *Lophelia pertusa*.  
**Prosobranchs:** *Emarginula crassa*.  
**Ascidians:** *Ciona intestinalis*, *Rhopalaea nordgaardi*, *Ascidia virginea*,  
*Ascidiella* sp., *Polycarpa pomaria*.

**Stn. 73003.** 5 April. Geitneset - Røberg (10,11-40).

Depth: 500 m. Gear: Detritus sledge. Organic material, very little mud.

**Conspicuous animals:** Buccinidae.  
**Prosobranchs:** *Aclis sarsi*, *Cingula turgida*, *Skenea basistriata*.  
**Pyramidellidae:** *Chrysallida eximia*.

**Stn. 73004.** 5 April. Geitneset (10-41).

Depth: 100-30 m. Gear: Triangular dredge. Hard bottom.

**Conspicuous animals:** *Modiolus modiolus*, *Echinus* sp.  
**Polyplacophora:** *Tonicella marmorea*.  
**Prosobranchs:** *Jujubinus clelandi*.

**Stn. 73005.** 5 April. Trondheimsfjorden (12-41).

Depth: 500 m. Gear: Detritus sledge. Fine mud.

**Stn. 73006.** 9 April. SE of Smellingen.

Depth: 120-90 m. Gear: Triangular dredge. Hard bottom.

**Conspicuous animals:** Porifera.  
**Ascidians:** *Dendrodoa grossularia*, *Polycarpa pomaria*, *Boltenia echinata*, *Pyura tessellata*.

**Stn. 73007.** 9 April. SE of Smellingen.

Depth: 160-120 m. Gear: Triangular dredge. Hard bottom, stony corals (dead), gravel.

**Conspicuous animals:** *Astarte* sp., *Arca* sp., *Terebratulina* sp., *Polycarpa pomaria*.  
**Polyplacophora:** *Hanleya hanleyi*.  
**Prosobranchs:** *Colus gracilis*, *Lunatia montagui*, *Natica clausa*, *Onoba semicostata*, *Spirothropis monterosatoi*.  
**Ascidians:** *Didemnum albidum*, *Ciona intestinalis*, *Ascidia obliqua*, *Polycarpa pomaria*.

**Stn. 73008.** 9 April. Selvabukta (5-30).

Depth: 100 m. Gear: Triangular dredge. Gravel and coarse sand

**Prosobranchs:** *Colus fusiformis*, *Lunatia montagui*.  
**Ascidians:** *Didemnum albidum*, *Ascidia conchilega*, *Dendrodoa grossularia*, *Polycarpa pomaria*.

**Stn. 73009.** 10 April. Brettingsnes (7-28).

Depth: 80-30 m. Gear: Triangular dredge. Hard bottom.

**Conspicuous animals:** *Alcyonium digitatum*, *Galathea* sp., *Modiolus modiolus*.  
**Prosobranchs:** *Acmaea virginea*, *Capulus ungaricus*, *Gibbula cineraria*, *Buccinum undatum*.

**Ascidians:** *Synoicum pulmonaria*, *Didemnum albidum*, *Ciona intestinalis*, *Ascidia mentula*, *Ascidia conchilega*, *Dendrodoa grossularia*, *Boltenia echinata*.

**Stn. 73010.** 10 April. Brettingsnes (7-28).

Depth 250-120 m. Gear: Triangular dredge. Stony corals (dead), hard bottom with some mud.

**Conspicuous animals:** *Paragorgia arborea*, *Primnoa resaediformis*, *Paramuricea placomus*, *Cucumaria frondosa*, *Didemnum albidum*.

**Polyplacophora:** *Hanleya hanleyi*.

**Prosobranchs:** *Buccinum undatum*.

**Ascidians:** *Didemnum albidum*, *Rhopalaea nordgaardi*, *Ascidia conchilega*, *Polycarpa pomaria*, *Pyura tessellata*, *Molgula siphonalis*.

**Stn. 73011.** 10 April. Karvikgrund, Stjørnfjorden.

Depth: 60-40 m. Gear: Triangular dredge. Hard bottom with empty shells.

**Conspicuous animals:** *Paramuricea placomus*.

**Ascidians:** *Ascidia obliqua*.

**Stn. 73012.** 10 April. Stjørnfjorden.

Depth: 120 m. Gear: Detritus sledge. Sand and mud.

**Conspicuous animals:** Prosobranchs and ascidians.

**Prosobranchs:** *Lunatia montagui*, *Emarginula fissura*, *Admete viridula*, *Colus sarsi*, *Trophonopsis clathratus*, *Colus gracilis*, *Capulus ungaricus*, *Cerithiella metula*, *Spirotropis monterosatoi*, *Trichotropis borealis*, *Clelandella clelandi*, *Neptunea despecta*.

**Ascidians:** *Ascidia obliqua*, *Dendrodoa grossularia*, *Polycarpa fibrosa*.

**Stn. 73013.** 11 April. Towards Smellingen from Trondheimsleia.

Depth: 200-500 m. Gear: Triangular dredge. Gravel bottom.

**Conspicuous animals:** *Astarte* sp.

**Prosobranchs:** *Neptunea despecta*, *Colus fusiformis*.

**Ascidians:** *Dendrodoa grossularia*, *Molgula siphonalis*.

**Stn. 73014.** 11 April. Towards Smellingen from Trondheimsleia.

Depth: 70 m. Gear: Triangular dredge. Hard bottom.

**Conspicuous animals:** Porifera, *Paramuricea placomus*, *Polycarpa pomaria*, *Ascidia mentula*.

**Prosobranchs:** *Colus gracilis*.

**Ascidians:** *Aplidium pallidum*, *Didemnum albidum*, *Ascidia mentula*, *Dendrodoa grossularia*, *Styela rustica*, *Polycarpa pomaria*, *Boltenia echinata*, *Pyura tessellata*.

- Stn. 73015.** 12. April. Røberg (11-38)  
Depth: 200-100 m. Gear: Triangular dredge. Hard bottom with some mud.  
**Conspicuous animals:** *Acesta excavata*, *Psolus squamatus*.
- Stn. 73016.** 12 April. Røberg (11-39).  
Depth: 200 m. Gear: Triangular dredge. Stony corals, hard bottom,  
**Conspicuous animals:** *Lophelia pertusa*.
- Stn. 73017.** 24 April. Røberg (11-39).  
Depth: 250-200 m. Gear: Triangular dredge. Stony corals,  
**Conspicuous animals:** *Lophelia pertusa*, *Acesta excavata*.
- Stn. 73018.** 16 May. Måneskinnsvik - Hestviken (9,10-39,40).  
Depth: 500 m. Gear: Shrimp trawl. Soft bottom.  
**Conspicuous animals:** *Stichopus tremulus*.
- Stn. 73028.** 9 July. Rylgrunnen (21-33).  
Depth: 70-110 m. Gear: Triangular dredge. Gravel bottom.  
**Conspicuous animals:** *Waldheimia* sp., *Astarte* sp.  
**Polyplacophora:** *Ischnochiton albus*, *Leptochiton asellus*.  
**Ascidians:** *Polycarpa pomaria*.
- Stn. 73029.** 9 July. Rørvikgrunnen (21-32).  
Depth: 80-60 m. Gear: Triangular dredge. Shell gravel bottom.  
**Conspicuous animals:** *Polycarpa pomaria*.  
**Prosobranchs:** *Iothia fulva*, *Buccinum undatum*, *Colus gracilis*.  
**Ascidians:** *Ascidia obliqua*, *Polycarpa pomaria*, *Pyura tessellata*.
- Stn. 73030.** 9 July. W of Tautra (22-32).  
Depth: 60 m. Gear: Triangular dredge. Shell gravel with some small stones.  
**Polyplacophora:** *Hanleya hanleyi*, *Leptochiton asellus*.  
**Prosobranchs:** *Iothia fulva*, *Buccinum undatum*.  
**Ascidians:** *Ciona intestinalis*, *Ascidia virginea*, *Polycarpa pomaria*.
- Stn. 73031.** 9 July. Tautra - Tømmerdalen (22-31).  
Depth: 200 m. Gear: Detritus sledge. Sand and silt.  
**Prosobranchs:** *Neptunea despecta*, *Spirotropis monterosatoi*, *Anatoma crispata*, *Velutina velutina*, *Skenea basistriata*, *Trichotropis borealis*, *Oenopta violacea*, *Metzgeria albella*, *Natica clausa*, *Laeocochlis granosa*, *Admete viridula*, *Capulus ungaricus*, *Cerithiella metula*, *Oenopota turricula*, *Aclis minor*, *Puncturella noachin*, *Eulima bilineata*, *Setia turgida*, *Alvania jefreysi*, *Trophonopsis barvicencis*, *Trophonopsis clathratus*, *Calliostoma formosa*.  
**Ascidians:** *Eudistoma vitreum*, *Ascidia conchilega*, *Ascidia obliqua*, *Styela theeli*, *Polycarpa pomaria*, *Rhopalaea nordgaardi*, *Botrylloides* sp., *Aplidium* sp.

**Stn. 73032.** 11 July. Røberg (10-39).

Depth: 220-260 m. Gear: Triangular dredge. Stony corals.

**Conspicuous animals:** *Lophelia pertusa*.

**Prosobranchs:** *Calliostoma formosa*, *Emarginula crassa*, *Trichotropis borealis*.

**Ascidians:** *Didemnum albidum*, *Ciona intestinalis*, *Rhopalaea nordgaardi*, *Ascidia conchilega*.

**Stn. 73033.** 11 July. Røberg (10-39)

Depth 350-300 m. Gear: Triangular dredge. Stony corals.

**Conspicuous animals:** *Lophelia pertusa*.

**Scaphopoda:** *Antalis entale*.

**Ascidians:** *Didemnum albidum*, *Ciona intestinalis*, *Rhopalaea nordgaardi*, *Ascidia conchilega*.

**Stn. 73034.** 11 July. Røberg (11-38).

Depth: 170-100 m. Gear: Triangular dredge. First hard, later more sandy bottom.

**Prosobranchs:** *Emarginula crassa*, *Lunatia montagui*.

**Ascidians:** *Didemnum albidum*, *Rhopalaea nordgaardi*, *Ascidia conchilega*, *Ascidia obliqua*, *Dendrodoa grossularia*, *Boltenia echinata*, *Polycarpa pomaria*.

**Stn. 73035.** 12 July. Tua, Munkholmen (18-39).

Depth: 110-90 m. Gear: Triangular dredge. Hard bottom,

**Conspicuous animals:** *Geodia* sp..

**Ascidians:** *Ascidia conchilega*, *Dendrodoa grossularia*, *Polycarpa pomaria*.

**Stn. 73036.** 12 July. Tua, Munkholmen (18,19-40).

Depth: 150-100 m. Gear: Triangular dredge. Hard bottom with dead *Lophelia pertusa*.

**Prosobranchs:** *Emarginula fissura*.

**Ascidians:** *Ascidia conchilega*, *Ascidia obliqua*, *Dendrodoa grossularia*, *Didemnum albidum*, *Polycarpa pomaria*, *Rhopalaea* sp.

**Stn. 73037.** 12 July. Storegrunnen (19-37).

Depth: 100 m. Gear: Triangular dredge. Rocks.

**Ascidians:** *Ascidia mentula*, *Dendrodoa grossularia*, *Polycarpa pomaria*, *Boltenia echinata*.

**Stn.73038.** 12 July. Indregrunnen, Strindfjorden (20-36).

Depth: 60 m. Gear: Triangular dredge. Clay with some gravel.

**Prosobranchs:** *Iothia fulva*.

**Scaphopoda:** *Antalis entale*.

**Ascidians:** *Ascidia obliqua*, *Polycarpa fibrosa*, *Polycarpa pomaria*, *Boltenia echinata*.



**Stn. 73039.** 12 July. Indregrunnen, Strindfjorden (21-36).

Depth: 140-100 m. Gear: Triangular dredge. Stones, gravel, and clay.

**Ascidians:** *Rhopalaea* sp., *Ascidia obliqua*, *Polycarpa pomaria*.

**Stn. 73040.** 12 July. Strindfjorden (21-37).

Depth: 200 m. Gear: Detritus sledge.

**Conspicuous animals:** Foraminiferans.

**Stn. 73041.** 12 July. Tua, Munkholmen (18,19-40).

Depth: 80-60 m. Gear: Triangular dredge.

**Conspicuous animals:** *Geodia* sp.

**Prosobranchs:** *Emarginula fissura*, *Iothia fulva*.

**Ascidians:** *Ascidia mentula*, *Styela coriacea*, *Dendrodoa grossularia*, *Polycarpa pomaria* with *Boltenia echinata* on *Geodia*, *Pyura tessellata*.

## 5 DISCUSSION

Høisæter et al. (1997) summarises from published articles the number of molluscan species found in the Trondheimfjord since 1760. The number of Prosobranch species amounts to 119. During the years 1971 to 1973 we found 83 species (Table 2, Appendix 2). In the Appendix species not recorded are marked.

Of the 119 species listed by Høisæter et al. (1997) 39 species were not found during the investigations in 1971 to 1973 (Tab. 2). In 1971 to 1973 we did not sample in the littoral zone or on very shallow bottoms (< 10 m depth) and 10 of the species listed in Table 2 are typical littoral or shallow living species. Thus only 29 prosobranch species with a common distribution further north or south of the Trondheimfjord were not found in our search.

Gulliksen & Brattegard (1997) states that 75 ascidian species are recorded along the Norwegian coast, of which 45 have been found in the Trondheimfjord. During the investigation 1971-1973 we recorded 31 of these species (Tab. 3 and Appendix 3). *Boltenia achinata*, *Molgula occulta*, *Polyclinum auranticum*, *Polycarpa fibrosa*, *Styela coriacea*, and *Styela theeli* were new species to the fjord. We have no explanation why we missed the 14 more species said to be distributed in the fjord. Also, none of them has been found in the years 1973 to 2004, but no intensive sampling aiming to look for ascidians has been performed in these years.

**Table 2.** Prosobranch species listed as recorded in the Trondheimfjord by Høisæter *et al.* (1997) but not found during the investigations 1971 to 1973.

X: distributed all along the coast, N: northern distribution from north of Norway and south to somewhere on the coast, S: distributed from south of Norway to somewhere north on the coast

Species name	
<i>Aclis walleri</i> (Jeffreys, 1867)	S
<i>Alvania semistriata</i> (Montagu, 1808)	S
<i>Amauropsis islandica</i> (Gmelin, 1791)	N
<i>Ansates pellucida</i> (L., 1758)	X
<i>Aporrhais serresianus</i> (Michaud, 1828)	S
<i>Astyris rosacea</i> (Gould, 1840)	N
<i>Bathycrinicola curta</i> (Warén, 1972)	S
<i>Buccinum hydrophanum</i> Hancock, 1846	N
<i>Calliostoma zizyphinum</i> (L., 1758)	S
<i>Calyptoconcha pellucida</i> (Verrill, 1880)	S
<i>Cingula trifasciata</i> (J. Adams, 1800)	S
<i>Dikoleps pusilla</i> (Jeffreys, 1847)	S
<i>Halielloides nitida</i> (Verrill, 1884)	S
<i>Hydrobia ulvae</i> (Pennant, 1777)	X
<i>Lacuna pallidula</i> (da Costa, 1778)	S
<i>Lacuna parva</i> (da Costa, 1778)	S
<i>Lamellaria latens</i> (Müller, 1776)	S
<i>Lamellaria perspicua</i> (L., 1758)	S
<i>Liomesus ovum</i> (Turton, 1825)	S
<i>Marsenina glabra</i> (Couthouy, 1839)	N
<i>Melanella frielei</i> (Jordan, 1895)	S
<i>Nucella lapillus</i> (L., 1758)	X
<i>Oenopota bergensis</i> (Friele, 1886)	X
<i>Oenopota cancellata</i> (Mighels & Adams, 1842)	X
<i>Oenopota harpularia</i> (Couthouy, 1839)	N
<i>Onoba aculeus</i> (Gould, 1841)	X
<i>Patella vulgata</i> L., 1758	S
<i>Polygireulima polita</i> (L., 1758)	S
<i>Pusillina sarsi</i> (Lovén, 1846)	S
<i>Rissoa parva</i> (da Costa, 1779)	X
<i>Skeneopsis planorbis</i> (Fabricius, 1780)	X
<i>Torellia vestita</i> Jeffreys, 1867	S
<i>Trophon clavatus</i> G. O. Sars, 1878	S
<i>Troschelia berniciensis</i> (King, 1846)	N
<i>Velutina plicatilis</i> (Müller, 1776)	1
<i>Velutina undata</i> Brown, 1839	1
<i>Vitreolina philippi</i> (de Rayneval & Ponzi, 1854)	S

**Table 3.** Ascidian species found in the Trondheimfjord during the investigation from 1971 to 1973. General distribution along the Norwegian coast is compiled from Gulliksen & Brattegard (1997): X: distributed all along the coast, N: northern distribution from north of Norway and south to somewhere on the coast, S: distributed from south of Norway to somewhere north on the coast.

Species	
<i>Aplidium glabrum</i> (Verrill, 1871)	X
<i>Aplidium pallidum</i> (Verrill, 1871)	X
<i>Ascidia conchilegia</i> (O.F. Müller, 1776)	S
<i>Ascidia mentula</i> (O.F. Müller, 1776)	S
<i>Ascidia obliqua</i> (Alder, 1863)	X
<i>Ascidia prunum</i> (O. F. Müller, 1776)	X
<i>Ascidia virginea</i> (O. F. Müller, 1776)	X
<i>Ascidiella aspersa</i> (O. F. Müller, 1776)	S
<i>Ascidiella scabra</i> (O. F. Müller, 1776)	S
<i>Boltenia echinata</i> (Linnaeus, 1767)	X
<i>Botrylloides aureum</i> (M. Sars, 1851)	N
<i>Ciona intestinalis</i> (Linnaeus, 1767)	X
<i>Corella parallelogramma</i> (O. F. Müller, 1776)	S
<i>Dendrodoa grossularia</i> (van Beneden, 1846)	X
<i>Didemnum albidum</i> (Verrill, 1871)	X
<i>Diplosoma listerianum</i> (H. Milne-Edwards, 1841)	S
<i>Distaplia clavata</i> (M. Sars, 1851)	N
<i>Eudistoma vitreum</i> (M. Sars, 1851)	N
<i>Leptoclinides faeroensis</i> (Bjerkan, 1905)	X
<i>Molgula occulta</i> (Kupffer, 1875)	S
<i>Molgula siphonalis</i> (M. Sars, 1859)	X
<i>Pelonaia corrugata</i> (Forbes & Goodsir, 1841)	X
<i>Polyclinum aurantium</i> (H. Milne-Edwards, 1841)	S
<i>Polycarpa fibrosa</i> (Stimpson, 1852)	X
<i>Polycarpa pomaria</i> (Savigny, 1816)	X
<i>Pyura tessellata</i> (Forbes, 1848)	S
<i>Rhopalaea nordgaardi</i> (Hartmeyer, 1922)	S
<i>Styela coriacea</i> (Alder & Hancock, 1848)	X
<i>Styela rustica</i> (Linnaeus, 1767)	X
<i>Styela theeli</i> (Ärnäck-Christie-Linde, 1921)	S
<i>Synoicum pulmonaria</i> (Ellis & Solander, 1786)	X

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## APPENDIX

Appendix 1: List of recorded species with station number in alphabetic order of the Phylum Mollusca, Classes Polyplacophora, Prosobranchia, Heteropoda-Pyramidellomorpha, Scaphopoda, and Phylum Tunicata, Class Ascidiacea.

### Polyplacophora

<i>Acanthocitona critinus</i> (= <i>A. fascicularis</i> )	71024
<i>Callochiton laevis</i>	71024, 71029
<i>Hanleya abyssorum</i>	72044
<i>Hanleya hanleyi</i>	71016, 71020, 71104, 71016, 71096, 72014, 72016, 72051, 72052, 73030, 73010, 73007
<i>Stenosemus albus</i> (= <i>Ischnochiton album</i> )	73028
<i>Leptochiton asellus</i> (= <i>Lepidopleurus asellus</i> )	73028, 73030
<i>Leptochiton alveolus</i> (= <i>Lepidopleurus alveolus</i> )	72020, 72023, 72039, 72052, 72074
<i>Tonicella marmorea</i>	71094, 71097, 72087, 73004
<i>Toncella rubra</i>	71004, 71029, 71080, 71107, 72035, 72036, 72073, 72084

### Prosobranchia

<i>Aclis minor</i>	73031
<i>Aclis sarsi</i>	71011, 71018, 72010, 73001, 73003
<i>Admete viridula</i>	72027, 72030, 72056, 73001, 73012, 73031
<i>Alvania abyssicola</i>	71021, 73001
<i>Alvania cimicoides</i>	71023, 71031, 71080, 71104, 72005, 72023, 72034, 72039, 72051, 72077, 72078
<i>Alvania jeffreysi</i>	71017, 71018, 71021, 71022, 71023, 71101, 71080, 71081, 72004, 72010, 72078, 72104, 73001, 73031,

<i>Alvania punctura</i>	71101, 72034, 72035
<i>Alvania scrobiculata</i>	73001
<i>Alvania subsoluta</i>	71022, 71110, 72003, 72008, 7202472085
<i>Alvania zetlandica</i> (= <i>Manzonia zetlandica</i> )	71080, 71018
<i>Anatoma crispata</i>	71021, 71022, 71023, 71081, 71098, 72010, 72020, 72023, 72030, 72031, 72039, 72048, 72052, 72054, 72062, 72077, 72078, 72084, 73001, 73031
<i>Aporrhais pespelecani</i>	71016, 71080, 71101, 71109, 72002, 72004, 72007, 72011, 72016, 72020, 72021, 72022, 72034, 72037, 72038, 72046, 72047, 72066, 72071
<i>Beringius turtoni</i>	72074
<i>Bittium reticulatum</i>	71019, 72035, 72051
<i>Buccinum humphreysianum</i>	72049
<i>Buccinum undatum</i>	71005, 71006, 71007, 71011, 71016, 71019, 71021, 71023, 71029, 71031, 71080, 71097, 71099, 71103, 72001, 72007, 72018, 72046, 72066, 72067, 72077, 72078, 72079, 72083, 72084, 73009, 73010, 73029, 73030,
<i>Calliostoma occidentale</i> (= <i>Calliostoma formosa</i> )	71027, 73031, 73032
<i>Capulus ungaricus</i>	71001, 71021, 71024, 71031, 71104, 72002, 72039, 72045, 72051, 73009, 73012, 73031
<i>Cerithiella metula</i>	71017, 72039, 72051, 72055, 73001, 73012, 73031,
<i>Colus gracilis</i>	71001, 71009, 71011, 72051, 72055, 73007, 73012, 73014, 73029,
<i>Colus islandicus</i>	71031
<i>Emarginula crassa</i>	71004, 71009, 71021, 71023, 71095, 71098, 72045, 72048, 72050, 72054,
<i>Emarginula fissura</i>	71004, 71008, 71018, 71020, 71021, 71080, 71097, 71099, 71105, 71109, 72002, 72015, 72020, 72023, 72030, 72031, 72034, 72042, 72043, 72045, 72046, 72052, 72054, 72055, 72057, 72071, 72077, 72083, 73012, 73036, 73041



<i>Enteroxenos oestergreni</i>	71008, 71010, 72106
<i>Epitonium greenlandicum</i>	71021, 71023
<i>Eulima bilineata</i>	71019, 71022, 71031, 72002, 72030, 72034, 72039, 72048, 72051, 72052, 72054, 72055, 73031
<i>Eumetula arctica</i>	72023, 72077
<i>Gibbula cineraria</i>	71080, 71094, 71107, 72007, 72011, 72035, 72037, 72069, 72078, 72087, 72106, 73009
<i>Gibbula tumida</i>	71013, 71021, 71023, 71080, 71088, 71089, 72007, 72016, 72039, 72051, 72052, 72072, 72073, 72087
<i>Haliella stenostoma</i>	72003, 72008, 72017, 72024, 72040, 72055, 72056 72071
<i>Hemiaclis ventrosa</i>	71021
<i>Hinia incrassata</i>	71021, 71094, 71101, 72002, 72007, 72016, 72044, 72046, 72067, 72084
<i>Hinia pygmaea</i>	71094, 72007, 72039
<i>Hinia reticulata</i>	72079, 73009
<i>Iothia fulva</i>	71004, 71005, 71006, 71007, 71011, 71014, 71017, 71018, 71019, 71020, 71021, 71022, 71023, 71031, 71080, 71081, 71093, 71094, 71096, 71097, 71098, 71099, 71101, 71103, 71104, 71105, 71109, 72001, 72002, 72005, 72007, 72010, 72014, 72015, 72020, 72023, 72027, 72030, 72031, 72034, 72039, 72046, 72051, 72052, 72053, 72055, 72056, 72059, 72065, 72069, 72079, 72082, 72083, 72084, 72086, 72098, 73038, 73041
<i>Jujubinus clelandi</i> (= <i>Clelandella miliaris</i> )	71005, 71009, 71010, 71011, 71013, 71015, 71016, 71018, 71021, 71031, 71080, 71088, 71097, 71104, 71109, 72001, 72002, 72007, 72010, 72011, 72016, 72023, 72034, 72039, 72045, 72046, 72051, 72054, 72056, 72057, 72059, 72071, 72074, 72078, 72083, 73004, 73012
<i>Lacuna vincta</i>	71005, 71088, 71089, 71095, 71098, 71104, 72007, 72022, 72051, 72052, 72055
<i>Laeocochlis macandreae</i>	73031

(= *Laeocochlis sinistra*)

<i>Lepeta caeca</i>	71007, 71009, 71011, 71013, 71016, 71017, 71018, 71023, 71080, 71081, 71084, 71085, 71088, 71093, 71096, 71097, 71098, 71099, 71101, 71103, 71104, 71109, 72002, 72006, 72007, 72008, 72009, 72010, 72011, 72014, 72015, 72016, 72019, 72020, 72021, 72022, 72023, 72027, 72031, 72034, 72038, 72046, 72051, 72053, 72056, 72057, 72061, 72063, 72070, 72083, 72086, 72087
<i>Littorina littorea</i>	71007, 71008, 71093, 72016, 72017, 72018, 72054, 72056, 72061, 72072
<i>Littorina obtusata/Littorina fabalis</i>	71020, 71084, 71093, 72017, 72020, 72071, 72074
<i>Littorina cf. saxatilis</i>	71029, 72008, 72017
<i>Lunatia alderi</i> (= <i>Polinices pulchellus</i> )	71007, 71080, 71094, 72002, 72007, 72016, 72039, 72040
<i>Lunatia montagui</i> (= <i>Polinices montagui</i> )	71031, 71080, 71087, 71094, 71101, 72010, 72030, 72040, 72043, 72051, 72055
<i>Lunatia pallida</i> (= <i>Polinices pallida</i> )	71010, 71101, 72018, 72031, 72039, 73007, 73008, 73012, 73034
<i>Margarites groenlandicus</i>	71021, 71080, 71104, 71107, 72007, 72016, 72035, 72043, 72079, 72080, 72084, 72087
<i>Margarites helycinus</i>	71080, 71107, 72022, 72035
<i>Melanella lubrica</i>	71022, 72010
<i>Melanella platyacmae</i> (= <i>M. orphanensis</i> )	71018, 73001
<i>Melanella</i> sp.	72022
<i>Metzgeria albella</i>	73031
<i>Natica clausa</i> (= <i>Cryptonatica affinis</i> )	71016, 71018, 72072, 73001, 73007, 73031
<i>Neptunea despecta</i>	71004, 71006, 71009, 71010, 71011, 71016, 71018, 71020, 71021, 71031, 71101, 71103, 71104, 71109, 72040, 72020, 72023, 72027, 72031, 72038, 72043, 72046, 72055, 72056, 72057, 72059, 72062, 72069, 72074, 72077, 72078, 72083, 72084, 73012, 73013

<i>Oenopota violacea</i>	72010, 73031
<i>Oenopota nobilis</i>	72030
<i>Oenopota trevelliiana</i>	71016
<i>Oenopota turricula</i>	72066, 73031
<i>Onoba semicostata</i>	71018, 71021, 71023, 71080, 71101, 71104, 72023, 72028, 72035, 72038, 73003
<i>Philbertia leufroyi</i> (= <i>Raphitoma boothi</i> )	72007
<i>Philbertia linearis</i> (= <i>Raphitoma linearis</i> )	71005, 71018, 71029, 71080, 71109
<i>Polygireulima macrophthalmica</i> (= <i>Curveulima macrophthalmica</i> )	72054
<i>Puncturella noachina</i>	71005, 71006, 71007, 71009, 71010, 71011, 71013, 71016, 71017, 71018, 71019, 71020, 71021, 71023, 71031, 71080, 71093, 71094, 71095, 71096, 71097, 71098, 71099, 71101, 71103, 71104, 71105, 71109, 71110, 72001, 72002, 72005, 72007, 72009, 72011, 72014, 72016, 72018, 72019, 72020, 72022, 72023, 72027, 72030, 72031, 72034, 72039, 72040, 72041, 72046, 72048, 72051, 72052, 72053, 72054, 72056, 72057, 72061, 72062, 72063, 72064, 72065, 72070, 72071, 72077, 72078, 72081, 72082, 72083, 72084
<i>Rissoa membranacea</i>	72051
<i>Setia tugida</i>	71022, 73001, 73003, 73031
<i>Skenea basistriata</i> <i>Skenea laevigata</i>	71021, 73001, 73003, 73031 72078
<i>Skenea peterseni</i>	72077
<i>Skenea rugulosa</i>	71021
<i>Spirotropis monterosatoi</i> (= <i>Spirotropis modiolus</i> )	72051, 72059, 72078, 73007, 73012, 73031
<i>Taranis moerchi</i>	73001

<i>Tectura testudinalis</i>	71004, 71029, 71089, 71101, 71107, 72015, 72019, 72035, 72041
<i>Tectura virginea</i>	71013, 71080, 71094, 71097, 71103, 71104, 71107, 72001, 72007, 72014, 72015, 72028, 72035, 72036, 72038, 72053, 72079, 72084, 72087, 73009
<i>Thesbia nana</i>	72017
<i>Trichotropis borealis</i>	71006, 71020, 71021, 71080, 71094, 71102, 72007, 72028, 72038, 72039, 72045, 72051, 72054, 72057, 72074, 72077, 72087, 73012, 73031, 73032
<i>Trivia arctica</i>	71007, 71009, 71011, 71093, 71105, 72002, 72005, 72039, 72047, 72052, 72054, 72083, 72084
<i>Trophonopsis barvicensis</i>	70093, 71005, 71010, 71011, 71018, 71019, 71021, 71023, 71024, 71031, 71081, 71096, 71104, 71109, 72010, 72016, 72078, 73001, 73031
<i>Trophonopsis clathratus</i>	71008, 71018, 71019, 71020, 71021, 71023, 72051, 72083, 73012, 73031
<i>Turrisipho fenestratus</i>	73008, 73013
<i>Turrisipho moebii</i>	73012
<i>Turritella communis</i>	71004, 71031, 71083, 71088, 71101, 72002, 72007, 72009, 72011, 72013, 72016, 72020, 72021, 72022, 72037, 72038, 72040, 72046, 72061
<i>Typhomangelia nivalis</i>	73001
<i>Velutina velutina</i>	71004, 71013, 71020, 71080, 71098, 71104, 72011, 72037, 72047, 72077, 72083, 72084, 73001, 73031

### **Heterobranchia - Pyramidellomorpha**

<i>Chrysallida decusata</i>	72030
<i>Chrysallida spiralis</i>	72035
<i>Chrysallida eximia</i>	73003
<i>Chrysallida obtusa</i>	71096, 72031, 72035
<i>Chrysallida</i> sp.	71018, 71023, 71104, 71109, 72002
<i>Eulimella gracilis</i>	73001

<i>Eulimella scillae</i>	71031, 72022
<i>Eulimella</i> sp.	72051, 73034
<i>Menestho ob liqua</i>	72003
<i>Odostomia unidentata</i>	72022
<i>Odostomia</i> sp.	71018, 71021, 71101, 72010

## **Scaphopoda**

<i>Dentalium entale</i>	71017, 73031, 73033, 73038, 73039
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## **Tunicata - Ascidiacea**

<i>Ascidia conchilega</i>	71001, 71006, 71010, 71017, 71020, 71021, 71080, 71081, 71093, 71096, 71098, 72004, 72011, 72025, 72026, 72027, 72030, 72035, 72039, 72043, 72044, 72045, 72046, 72047, 72051, 72056, 72057, 72059, 72062, 72063, 72065, 72070, 72074, 72077, 72078, 72080, 73008, 73009, 73010, 73031, 73032, 73033, 73034, 73035, 73036
<i>Ascidia mentula</i>	71001, 71003, 71004, 71011, 71097, 71098, 71099, 71103, 71104, 72027, 72034, 72046, 72047, 72052, 72053, 72083, 73009, 73014, 73037, 73041
<i>Ascidia obliqua</i>	71001, 71002, 71007, 71009, 71010, 71011, 71013, 71015, 71016, 71017, 71018, 71020, 71021, 71081, 71093, 71094, 71095, 71096, 71098, 71099, 71105, 72025, 72026, 72027, 72030, 72034, 72039, 72045, 72050, 72056, 72059, 72066, 72073, 72074, 72077, 72079, 72080, 72084, 72086, 73001, 73007, 73011, 73012, 73029, 73031, 73034, 73036, 73038, 73039
<i>Ascidia prunum</i>	71009
<i>Ascidia virginea</i>	71001, 71006, 71009, 71011, 71015, 71018, 71019, 71095, 71098, 71099, 71104, 71109, 72005, 72007, 72014, 72019, 72026, 72031, 72039, 72046, 72051, 72056, 72059, 72073, 72077, 72079, 72083, 72084, 73002, 73030
<i>Asciadiella aspersa</i>	71001, 72004, 72008, 72066, 72078

<i>Asciidiella scabra</i>	71015, 71093, 72013, 72018, 72023, 72064, 72070, 72071
<i>Asciidiella</i> sp.	73002
<i>Aplidium glabrum</i>	72042
<i>Aplidium pallidum</i>	72048, 72052, 73014
<i>Boltenia echinata</i>	71002, 71007, 71020, 72043, 72044, 72045, 72046, 72050, 72051, 72067, 73006, 73009, 73014, 73034, 73037, 73038, 73041
<i>Botrylloides aureum</i>	71002
<i>Ciona intestinalis</i>	71001, 71009, 71010, 71016, 71017, 71018, 71019, 71021, 71031, 71080, 71099, 71101, 71103, 71108, 72001, 72002, 72004, 72010, 72022, 72034, 72045, 72066, 72067, 72079, 72087, 73002, 73007, 73009, 73030, 73032, 73033,
<i>Corella parallelogramma</i>	71003, 71014, 71090, 71094, 71098, 72012, 72046, 72067, 72079, 72084, 72087
<i>Dendrodoa grossularia</i>	71015, 71016, 71020, 71098, 72031, 72034, 72045, 72062, 72063, 72064, 72067, 72080, 73006, 73008, 73009, 73012, 73013, 73014, 73034, 73035, 73036, 73037, 73041
<i>Didemnum albidum</i>	71098, 72045, 72070, 73007, 73008, 73009, 73010, 73014, 73032, 73033, 73034, 73036
<i>Didemnum</i> sp.	71096
<i>Diplosoma listerlanum</i>	72077
<i>Distaplia clavata</i>	72051
<i>Eudistoma vitreum</i>	71081, 72045, 72050, 73031
<i>Leptoclinides faeroensis</i>	72050
<i>Molgula occulta</i>	72030
<i>Molgula siphonalis</i>	71011, 72042, 72043, 72087, 73010, 73013
<i>Pelonaria corrugata</i>	72021
<i>Polyclinum aurantium</i>	71014, 71101

<i>Polycarpa fibrosa</i>	71013, 71015, 73012, 71038
<i>Polycarpa pomaria</i>	71001, 71002, 71011, 71016, 71017, 71018, 71019, 71020, 71021, 72010, 72025, 72026, 72030, 72031, 72039, 72044, 72048, 72050, 72051, 72056, 72062, 72064, 72070, 72074, 72077, 72078, 72080, 72081, 72083, 72084, 72086, 73002, 73006, 73007, 73008, 73010, 73014, 73028, 73029, 73030, 73031, 73034, 73035, 73036, 73037, 73038, 73039, 73041
<i>Pyura tessellata</i>	71098, 72039, 72042, 72045, 72047, 72050, 72052, 73006, 73010, 73014, 73029, 73041
<i>Rhopalaea nordgaardi</i>	71010, 71081, 71095, 71098, 72025, 72050, 72052, 73002, 73010, 73032, 73033, 73034, 73039
<i>Rhopalaea</i> sp.	73036
<i>Styela coriacea</i>	71106, 72025, 72043, 72045, 72052, 73041
<i>Styela rustica</i>	71004, 72028, 72067, 72087, 73014
<i>Styela theeli</i>	73031
<i>Synoicum pulmonaria</i>	71098, 72027, 72044, 72047, 73009

Appendix 2. Number of prosobranch species known or supposed to occur in the Trondheimsfjord (Sector 13) as compiled by T. Høisaeter, J.-A. Sneli, P. Bie Wikander and T. Brattegard (Brattegard & Holthe 1997), compared with recorded species during 1971-1973.

	Sector 13	1971 - 1973
<i>Aclis minor</i> (Brown, 1827)	s	P
<i>Aclis sarsi</i> (Dautzenberg & Fischer, 1912)	s	P
<i>Aclis walleri</i> (Jeffreys, 1867)	s	
<i>Admete viridula</i> (O. Fabricius, 1780)	x	P
<i>Alvania cimicoides</i> (Forbes, 1844)	s	P
<i>Alvania jeffreysi</i> (Waller, 1864)	x	P
<i>Alvania punctura</i> (Montagu, 1803)	s	P
<i>Alvania scrobiculata</i> (Møller, 1842)	n	P
<i>Alvania semistriata</i> (Montagu, 1808)	s	
<i>Alvania subsoluta</i> (Aradas, 1847)	s	P
<i>Alvania testae</i> (Aradas & Maggiore, 1844)	s	P
<i>Alvania zetlandica</i> (Montagu, 1815)	s	P
<i>Amauropsis islandica</i> (Gmelin, 1791)	n	
<i>Anatoma crispata</i> (Fleming, 1828)	x	P
<i>Ansates pellucida</i> (L., 1758)	x	
<i>Aporrhais pespelecani</i> (L., 1758)	s	P
<i>Aporrhais serresianus</i> (Michaud, 1828)	s	
<i>Astyris rosacea</i> (Gould, 1840)	n	
<i>Bathycrinicola curta</i> (Warén, 1972)	s	
<i>Beringius turtoni</i> (Bean, 1834)	n	P
<i>Bittium reticulatum</i> (da Costa, 1778)	s	P
<i>Buccinum humphreysianum</i> Bennett, 1824	s	P
<i>Buccinum hydrophanum</i> Hancock, 1846	n	
<i>Buccinum undatum</i> L., 1758	x	P
<i>Calliostoma occidentale</i> (Mighels & Adams, 1842)	n	P
<i>Calliostoma zizyphinum</i> (L., 1758)	s	
<i>Calyptoconcha pellucida</i> (Verrill, 1880)	s	
<i>Capulus ungaricus</i> (L., 1758)	s	P
<i>Cerithiella metula</i> (Lovén, 1846)	x	P
<i>Cingula trifasciata</i> (J. Adams, 1800)	s	
<i>Clelandella miliaris</i> (Brocchi, 1814)	s	P
<i>Colus gracilis</i> (da Costa, 1778)	x	P
<i>Colus islandicus</i> (Mohr, 1786)	n	P
<i>Cryptonatica affinis</i> (Gmelin, 1791)	x	P
<i>Curveulima macrophthalmica</i> (Warén, 1972)	s	P
<i>Dikoleps pusilla</i> (Jeffreys, 1847)	s	
<i>Emarginula crassa</i> J. Sowerby, 1813	s	P
<i>Emarginula fissura</i> (L., 1767)	s	P
<i>Enteroxenos oestergreni</i> Bonnevie, 1902	s	P
<i>Epitonium greenlandicum</i> (Perry, 1811)	x	P



<i>Eulima bilineata</i> Alder, 1848	s	P
<i>Eumetula arctica</i> (Mørch, 1857)	s	P
<i>Gibbula cineraria</i> (L., 1758)	x	P
<i>Gibbula tumida</i> (Montagu, 1803)	x	P
<i>Haliella stenostoma</i> (Jeffreys, 1858)	s	P
<i>Halielloides nitida</i> (Verrill, 1884)	s	
<i>Hemiaclis ventrosa</i> (Friele, 1876)	x	P
<i>Hydrobia ulvae</i> (Pennant, 1777)	x	
<i>Iothia fulva</i> (Müller, 1776)	x	P
<i>Lacuna pallidula</i> (da Costa, 1778)	l	
<i>Lacuna parva</i> (da Costa, 1778)	l	
<i>Lacuna vincta</i> (Montagu, 1803)	x	P
<i>Laiocochlis sinistrata</i> (Nyst, 1835)	n	P
<i>Lamellaria latens</i> (Müller, 1776)	s	
<i>Lamellaria perspicua</i> (L., 1758)	s	
<i>Lepeta caeca</i> (Müller, 1776)	x	P
<i>Liomesus ovum</i> (Turton, 1825)	s	
<i>Littorina arcana</i> Ellis, 1978	x	
<i>Littorina fabalis</i> (W. Turton, 1825)	x	
<i>Littorina littorea</i> (L., 1758)	x	P
<i>Littorina neglecta</i>		
<i>Littorina obtusata</i> (L., 1758)	x	P
<i>Littorina saxatilis</i> (Olivi, 1792)	x	P
<i>Margarites groenlandicus</i>		P
<i>Margarites helycinus</i> (Phipps, 1774)	x	P
<i>Margarites striatus</i> (Leach, 1819)	x	
<i>Marsenina glabra</i> (Couthouy, 1839)	n	
<i>Melanella frielei</i> (Jordan, 1895)	s	
<i>Melanella lubrica</i> (Monterosato, 1891)	s	P
<i>Melanella orphanensis</i> Clarke, 1974	s	P
<i>Metzgeria albella</i> (Dunker & Metzger, 1874)	n	P
<i>Moelleria costulata</i> (Møller, 1842)	l	?
<i>Nassarius incrassata</i> (Ström, 1768)	s	P
<i>Nassarius pygmaea</i> (Lamarck, 1822)	s	P
<i>Nassarius reticulata</i> (L., 1758)	s	P
<i>Neptunea despecta</i> (L., 1758)	n	P
<i>Nucella lapillus</i> (L., 1758)	x	
<i>Oenopota bergensis</i> (Friele, 1886)	x	
<i>Oenopota cancellata</i> (Mighels & Adams, 1842)	x	
<i>Oenopota decussata</i> (Couthouy, 1839)	n	
<i>Oenopota harpularia</i> (Couthouy, 1839)	n	
<i>Oenopota nobilis</i> (Møller, 1842)	n	P
<i>Oenopota trevillianiana</i> (Turton, 1834)	x	P
<i>Oenopota turricula</i> (Montagu, 1803)	S	P
<i>Oenopota violacea</i> (Mighels & Adams, 1842)	x	P
<i>Onoba aculeus</i> (Gould, 1841)	x	

<i>Onoba semicostata</i> (Montagu, 1803)	s	P
<i>Patella vulgata</i> L., 1758	s	
<i>Polinices montagui</i> (Forbes, 1838)	x	P
<i>Polinices pallidus</i> (Broderip & G. B. Sowerby I, 1829)	x	P
<i>Polinices pulchellus</i> (Risso, 1826)	s	P
<i>Polygireulima polita</i> (L., 1758)	s	
<i>Puncturella noachina</i> (L., 1771)	x	P
<i>Pusillina sarsi</i> (Lovén, 1846)	s	
<i>Raphitoma boothi</i> (Brown, 1839)	s	P
<i>Raphitoma linearis</i> (Montagu, 1803)	s	P
<i>Rissoa membranacea</i> (J. Adams, 1800)	s	P
<i>Rissoa parva</i> (da Costa, 1779)	x	
<i>Setia turgida</i> (Jeffreys, 1870)	s	P
<i>Skenea basistriata</i> (Jeffreys, 1877)	s	P
<i>Skenea laevigata</i> (Friele, 1876)	x	P
<i>Skenea peterseni</i> (Friele, 1877)	x	P
<i>Skenea rugulosa</i> (G. O. Sars, 1878)	s	P
<i>Skeneopsis planorbis</i> (Fabricius, 1780)	x	
<i>Solariella obscura</i> (Couthouy, 1838)	n	
<i>Spirotropis modiolus</i> (Cristofori & Jan, 1832)	n	P
<i>Taranis moerchi</i> (Malm, 1863)	x	P
<i>Tectura testudinalis</i> (Müller, 1776)	x	P
<i>Tectura virginea</i> (Müller, 1776)	x	P
<i>Thesbia nana</i> (Lovén, 1846)	x	P
<i>Torellia vestita</i> Jeffreys, 1867	s	
<i>Trichotropis borealis</i> Broderip & G. B. Sowerby I, 1829	x	P
<i>Trivia arctica</i> (Pulteney, 1799)	s	P
<i>Trophon barvicensis</i> (Johnston, 1852)	x	P
<i>Trophon clathratus</i> (L., 1767)	x	P
<i>Trophon clavatus</i> G. O. Sars, 1878	s	
<i>Trophon truncatus</i> (Ström, 1767)	l	
<i>Troschelia berniciensis</i> (King, 1846)	n	
<i>Turrisipho dalli</i> (Friele, 1882)	l	
<i>Turrisipho fenestratus</i> (Turton, 1834)	n	P
<i>Turrisipho moebii</i> (Dunker & Metzger, 1874)	x	P
<i>Turritella communis</i> Risso, 1826	s	P
<i>Typhlomangelia nivalis</i> (Lovén, 1846)	x	P
<i>Velutina plicatilis</i> (Müller, 1776)	l	
<i>Velutina undata</i> Brown, 1839	l	
<i>Velutina velutina</i> (Müller, 1776)	x	P
<i>Vitreolina philippi</i> (de Rayneval & Ponzi, 1854)	s	
<i>Volutopsius norwegicus</i> (Gmelin, 1791)	n	
Records	119	82

## Rapportserien

«Norges teknisk-naturvitenskapelige universitet, Vitenskapsmuseet Rapport zoologisk serie» er en videreføring av »Vitenskapsmuseet Rapport Zoologisk Serie» og presenterer stoff fra de zoologiske fagområdene ved Vitenskapsmuseet. Serien bringer i hovedsak arbeider fra oppdragsprosjekter og andre undersøkelser og forskning ved Seksjon for Naturhistorie. Serien er ikke periodisk og antall numre varierer pr. år. Serien startet i 1974 og det finnes parallelle botaniske og arkeologiske rapportserier ved Vitenskapsmuseet. Mindre arbeider og utredninger som av ulike grunner trenger en rask publisering og distribusjon presenteres i en egen notatserie: »Norges teknisk-naturvitenskapelige universitet, Vitenskapsmuseet Zoologisk notat».

### Til forfatterne

#### Manuskripter

Manuskripter bør leveres som papirutskrift og som tekstfil i Word. Vitenskapelige slekts- og artsnavn kursiveres. Manuskripter til rapportserien skal skrives på norsk, unntatt abstract (se nedenfor). Unntaksvis, og etter avtale med redaktøren, kan manuskripter på engelsk bli tatt inn i serien. Tekstfilen(e) skal inneholde en ren «brødtekst», dvs. med færrest mulig formateringskoder. Hovedoverskrifter skal skrives med store bokstaver, de øvrige overskrifter med små bokstaver. Manuskriptet skal omfatte:

1. Eget ark med manuskriptets tittel og forfatterens/forfatterens navn. Tittelen bør være kort og inneholde viktige henvisningsord.
2. Et referat på norsk på maksimum 200 ord. Referatet innledes med bibliografisk referanse og avsluttes med forfatterens/forfatterens navn og adresse(r).
3. Et abstract på engelsk som er en oversettelse av det norske referatet.

#### Manuskriptet bør for øvrig inneholde:

4. Et forord som ikke overstiger en trykkside. Forordet kan gi bakgrunnen for arbeidet det rapporteres fra, opplysninger om eventuell oppdragsgiver og prosjekt- og programtilknytning, økonomisk og annen støtte, institusjoner og enkeltpersoner som bør takkes osv.
5. En innledning som gjør rede for den faglige problemstillingen og arbeidsgangen i undersøkelsen.
6. En innholdsfortegnelse som viser stoffets inndeling i kapitler og underkapitler.
7. Et sammendrag av innholdet. Sammendraget bør ikke overstige 3 % av det øvrige manuskriptet. I spesielle tilfeller kan det i tillegg også tas med et «summary» på engelsk.
8. Tabeller og figurer leveres på separate ark og skrives i egne filer. I teksten henvises de til som «Tabell 1», «Figur 1» osv.

## Litteraturhenvisninger

En oversikt over litteratur som det er henvist til i manuskriptteksten samles bakerst i manuskriptet under overskriften «Litteratur». Henvisninger i teksten gis som Haftorn (1971), Arnekleiv & Haug (1996) eller, dersom det er flere enn to forfattere, som Sæther *et al.* (1981). Om det blir vist til flere arbeider, angis det som «som flere forfattere rapporterer (Haftorn 1971, Thingstad *et al.* 1995, Arnekleiv & Haug 1996,))», dvs. forfatterne nevnes i kronologisk orden, uten komma mellom navn og årstall. Litteraturlisten ordnes i alfabetisk rekkefølge: det norske alfabetet følges: aa = å (utenom for nederlandske, finske og etniske navn), ö = ø osv. Flere arbeid av samme forfatter i samme år angis ved a, b, osv. (Elven 1978a, b). Ved lik alfabetisk prioritet går to forfattere foran tre eller flere («*et al.*»).

### Eksempler:

#### Tidsskrift/serie

Slagsvold, T. 1977. Bird song activity in relation to breeding cycle, spring weather, and environmental phenology. – *Ornis Scand.* 8: 197-222.

Arnekleiv, J.V. & Haug, A. 1996. Fiskebiologiske undersøkelser i Holmvatnet og Rundtuvatnet, Rana kommune, Nordland, 1995. – *Vitenskapsmuseet Rapp. Zool. Ser.* 1996, 3: 1-22.

#### Kapittel

Nilsson, S.G. & Ericson, L. 1992. Conservation of plants and animal populations in theory and practice. s. 71-112 i Hansson, L. (red.). *Ecological principles of nature conservation.* – Elsevier Appl. Sci., London.

#### Monografi/bok

Urke, H. A. 2001. Utvikling av sjøtoleranse og vandringsåtfærd hos Atlantisk laks (*Salmo salar* L.) med og utan oppdrettsbakgrunn. – Cand.scient. oppgave i akvakultur. Norges teknisk-naturvitenskapelige universitet, Zoologisk institutt. 79 s. Upubl.

Haftorn, S. 1971. *Norges Fugler.* – Universitetsforlaget, Oslo. 862 s.

#### Illustrasjoner

Figurer (i form av fotografier, tegninger osv.) leveres separat, på egne ark, dvs. de skal ikke inkluderes eller monteres i brødteksten. På papirutskriften av manuskriptet skal det i venstre marg angis hvor i teksten figurene ønskes plassert. Strekfigurer, kartutsnitt o.l. figurer skal være trykkeferdige fra forfatterens hånd. Skal rapporten inneholde fargebilder, bør også disse leveres som jpg-filer.

#### Opplag

Rapporten trykkes vanligvis i et opplag på 150-300 eksemplare



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