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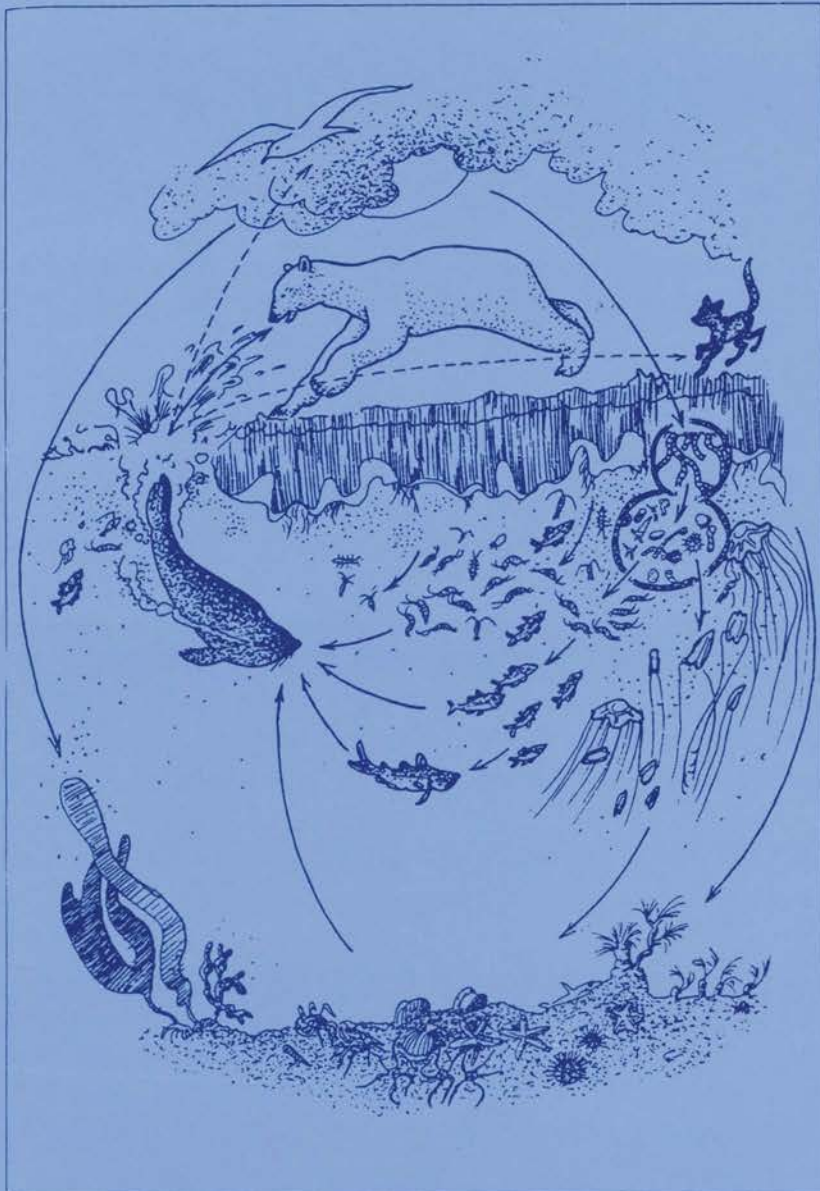
# RAPPORTSERIE

NR. 77 - OSLO 1992

NICOLAY DORONIN

## ECOLOGICAL CONDITIONS IN THE BARENTS SEA

(Institutes and literature catalogue)





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## INTRODUCTION

This work has been done by INTAARI Joint Enterprise in cooperation with the Arctic and Antarctic Research Institute (AARI), St.Petersburg. The Client is Norsk Polarinstitut (Oslo, Norway), and the scientific leader of the project has been Dr. N.Doronin from INTAARI.

To fulfill the work references were collected from the libraries of the Academy of Sciences, the Geographical Society, the Arctic and Antarctic Research Institute and the Murmansk Branch of the AARI. Information about institutions in connection with their activity in the Barents Sea ecological studies was obtained from the literature and from personal contacts with scientists from the relevant institutions.

## **1. A LIST OF RUSSIAN INSTITUTIONS INVOLVED IN ECOLOGICAL INVESTIGATIONS IN THE BARENTS SEA**

### **1. Biological Research Institute of St.Petersburg University.**

Oranienbaumskoye Shosse, 2,  
Stary Petergof  
198104 St.Petersburg  
Phone: +7-(812)-257-54-51

### **2. Botanic Institute of the Academy of Sciences (BIN).**

Professor Popov St., 2  
197022 St.Petersburg  
Phone: +7-(812)-234-12-37  
-234-45-12

### **3. Ecological Centre (Ecocentre)**

Liteiny Pr., 59  
191104 St.Petersburg  
Telex: 121487 NORD  
Fax: +7-(812)-314-99-60  
Phone: +7-(812)-310-54-18

### **4. Institute of Ecological Problems of the North**

Vyucheskogo St., 57  
Arkhangelsk

### **5. Institute of Industrial Ecology. Kola Science Centre of the Academy of Sciences.**

Fersman St., 14  
184200 Apatity  
Telex: 126118 PGI SU

### **6. Institute of Water Problems of the North. Karelian Science Centre of the Academy of Sciences**

Uritsky St., 50  
185000 Petrozavodsk

### **7. Murmansk Department of the Northern Branch of the Geographical Society**

Oktyabrskaya St., 24  
183038 Murmansk

### **8. Murmansk Marine Biological Institute (MMBI) of the Academy of Sciences**

Vladimirskaya St., 17  
183023 Murmansk

- 9. Northern Branch of the Polar Research Institute of Marine Fishery and Oceanography (Sev. PINRO)**  
 Uritsky St., 17  
 Arkhangelsk
- 10. Permanent Commission for Ecology and Natural Resources attached to the Murmansk Regional Sovjet of Peoples Deputies**  
 Prospekt Lenina, 75  
 183038 Murmansk
- 11. Petrozavodsk University (Hydrophysics Group)**  
 Lenin St., 30  
 185000 Petrozavodsk
- 12. Polar Research Institute of Marine Fishery and Oceanography (PINRO)**  
 Knipovich St., 6  
 183763 Murmansk
- 13. St.Petersburg Department of the States Oceanographic Institute (LOGOIN)**  
 23 Liniya, 2a  
 199026 St.Petersburg
- 14. Zoological Institute of the Academy of Sciences (ZIN)**  
 Universitetskaya Nab., 1  
 199034 St.Petersburg  
 Phone: +7-(812)-218-00-11  
 -218-03-11

In the references listed below also the following acronyms are used:

- GGI** is Gosudarstvenny Gidrologichesky Institut (States Hydrological Institute)
- GOIN** is Gosudarstvenny Okeanografichesky Institut (States Oceanographic Institute)
- IOAN** is Insitut Okeanologii Akademii Nauk (Institute of Oceanology of the Akademy of Sciences)
- MGU** is Moskovsky Gosudarstvenny Universitet (Moskow States University)

**VINITI** is Vsesoyuzny Institut Nauchnoy i Technicheskoy Informatsii (All-Union Institute for Scientific and Technical Information)

**VNIRO** is Vsesoyuzny Nauchno-issledovatel'skiy Institut Morskogo Rybnogo Khozyaystva i Okeanografii (All-Union Research Institute for Marine Fishery and Oceanography)

**L.**, and **M.** stand for Leningrad and Moscow respectively, indicating where the book was published.

The old names of the institution which were changed are given in full.



## **2. AN EVALUATION OF THE PRIORITY OF THE INSTITUTIONS IN CONNECTION WITH PLANNING OF JOINT ECOLOGICAL PROGRAMMES IN THE BARENTS SEA.**

The leading role in the ecological and biological investigations of the Barents Sea belongs to the Murmansk Marine Biological Institute (MMBI) (No 8). As the institute is attached to the Academy of Sciences its main interest is basic research, but it has enough experience to solve applied problems. The director, G.G.Matishev, is the most appropriate contact person. He also coordinates the activity of the Murmansk Department of the Northern Branch of the Geographical Society (No 7).

PINRO (No 12) has more applied orientation. Their research is mostly connected with fishery. They have groups of advanced scientists in biology and ecology and have great experience in the Barents Sea study.

A series of publications on ecological problems was issued by the Institute of Industrial Ecology (No 5). Because of a common attachment to the Academy of Sciences it works in close cooperation with the MMBI.

Biological Research Institute (No1), Botanic (No 2) and Zoological (No14) Institutes of the Academy of Sciences are engaged in general biological studies and sometimes particular investigators from them are involved in the problems connected with the Barents Sea ecology.

St.Petersburg Department of the States Oceanographic Institute (LOGOIN) (No 13) has no biological group, but it has carried out studies in ecosystem modelling, informational bases and hydrodynamical modelling for the use in complex ecological models.

Ecological Centre (No 3) has no field experience in the Barents Sea investigations. It is a newly founded agency specialized on the implementation of joint ecological programmes.

The Institute of Ecological Problems of the North (No 4) is mostly connected with the ecological investigations of land and rivers. Some time ago there was formed a laboratory of marine hydrology. It can be engaged in studies of the White and Barents Seas.

The other institutions are rather new, but directly or indirectly they are connected with the Barents Sea ecological investigations.

### 3. A LIST OF AVAILABLE RELEVANT RUSSIAN ECOLOGICAL PUBLICATIONS.

**Adrov M.M.** An influence of winter vertical circulation on bio- and hydrochemical regime of the Barents Sea bottom waters. Trudy PINRO, v. 23, 1968, 116-136.

**Adrov M.M.** To the problem of interaction between distribution of temperature, oxygen and fish stocks in some oceanic fishery areas in the North. Trudy PINRO, v. 16, 1964, 251-268.

**Adrov M.M.** To the problem of practical use of statistical distribution of some oceanographical characteristics . Materials of fishery investigations in the Northern Basin, v. 6, Murmansk, 1966, 148-162.

**Adrov M.M.** To the problem of the influence of vertical circulation on the formation of fish concentrations in the Barents Sea. Trudy PINRO, v. 27, 1970, 53-66.

**Alexeyeva A.G., Sapronetskaya N.G., Tsekhotskaya L.K.** Some methods to evaluate primary production by chemical parameters. Trudy PINRO, v. 60, 1978, 109-117.

**Aleyev V.R.** Relationship between herring distribution in the Barents Sea and hydrological conditions. Trudy PINRO, v. 1, 1938, 120-133.

**Antipova T.V., Degtyaryova A.A., Timokhina A.F.** Multi-year changes of plankton and benthos biomass in the Barents Sea. Materials of fishery investigations in the Northern Basin. Murmansk, PINRO, v. 21, 1974, 81-87.

**Antsulevich A.Ye.** The first discovery of hydroids *Monocoryne* (Hydrozoa, Myriothelidae) in the waters of the USSR. Zoologicheskyy Zhurnal, 67, No 6, 1988, 931-933.

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**Averintsev V.G.** On Arctic warming and related processes. Za Rybnuyu Industriyu Severa, No 12, 1935, 15-17.

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**Fishery description of the Western-Central region of the Barents Sea.** Murmansk, 1963, 24 pp.

**Fishery description of the North-Eastern slope of the Barents Sea Murmansk Bank.** Murmansk, 1966, 24 pp.

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#### 4. AN EVALUATION OF THE PRIORITY OF THE LISTED PUBLICATIONS

The list of publications comprises the main existing literature sources on the Barents Sea biology and ecology since the end of the last century till the present time. Taking into account the broadness of the problem the Catalogue cannot pretend to be a comprehensive one, but it is a sufficient basis for an acquaintance with the degree of biological and ecological knowledge about the Barents Sea, reached in Russia, as well as the present tendencies in its studies.

The earliest reference is **Gertsenstein, 1885**. The first regular investigations in the Barents Sea hydrometeorology are connected with the activity of the Murmansk Biological Station in the first half of the century. Works by **Linko A.K. (Linko A.K., 1900- Linko A.K., 1915)** reflecting how the scope of work of the Station had been formed, are of some special historical interest. The works by **Deryugin K.M. (Deryugin K.M., 1915-Deryugin K.M., 1934)** are significant. He paid a great attention to relations between the life of marine organisms and the hydrological conditions of the basin.

The scientific works by **Zenkevich L.A. (Zenkevich L.A., 1927-Zenkevich L.A., 1956)** are fundamental, especially his book "The Seas of the USSR, their Fauna and Flora".

Publications related to the scientific background for fishery take considerable place in the recent literature. This studies are mainly carried out by PINRO and are published in the Proceeding of that Institute (**Adrov M.M., Degtyaryova A.A, Ponomarenko V.P.** and other authors)

Ecology as a branch of science appeared in Russian publication since 1880-ties. In respect with the Barents Sea ecology the major part of works belong to the MMBI, which now is specialized in this direction. The works are mostly published as separate issues by Publishing House of the Kola Science Centre of the Academy of Sciences (**Matishov G.G, 1988, 1989, 1990** and others).

The listed literature also includes some proceeding of the conferences organized by PINRO and MMBI. They can attract interest, though the information given is not as detailed as in original publications.

It seems to be impossible to evaluate the quality of the data reported in the listed literature without consideration of each particular paper. So the only remark is suitable that all the hydrological and hydrochemical observations since 1920-ties till the present time are carried out in accordance to the existing standards published in the relevant **Recommended Practicies for Works at Oceans and Seas**.



## 5. CONCLUSION

This Catalogue comprises a list of 14 Russian institutions related to the biological and ecological investigations of the Barents Sea. It does not imply that other institutes of the same type in Russia or individual scientists from them cannot be engaged in the projects of this direction.

The list of literature has more than 200 references. Most of them were not translated from Russian, so they can be unknown to scientists from other countries. The contemporary science is international and we hope, that the Catalogue will help to give an impression about the input made by Russian scientists into biological and ecological studies of the Barents Sea.

All the publications published by the institutions of the Academy of Sciences are available in the Library of the Academy of Sciences in St. Petersburg.

The books and magazines published in Murmansk may be found in the library of PINRO in Murmansk.

The libraries of the AARI and the Geographical Society in St. Petersburg have a great collection of the publications connected with the Arctic expeditions since the end of the last century.

The references marked as Dep. VINITI signify the unpublished manuscripts. Xerox copies may be ordered via mail from VINITI. All Russian libraries have direct contact to that specialized stock of manuscripts. Ph. Dr. theses are also available both in the VINITI and corresponding Universities.

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