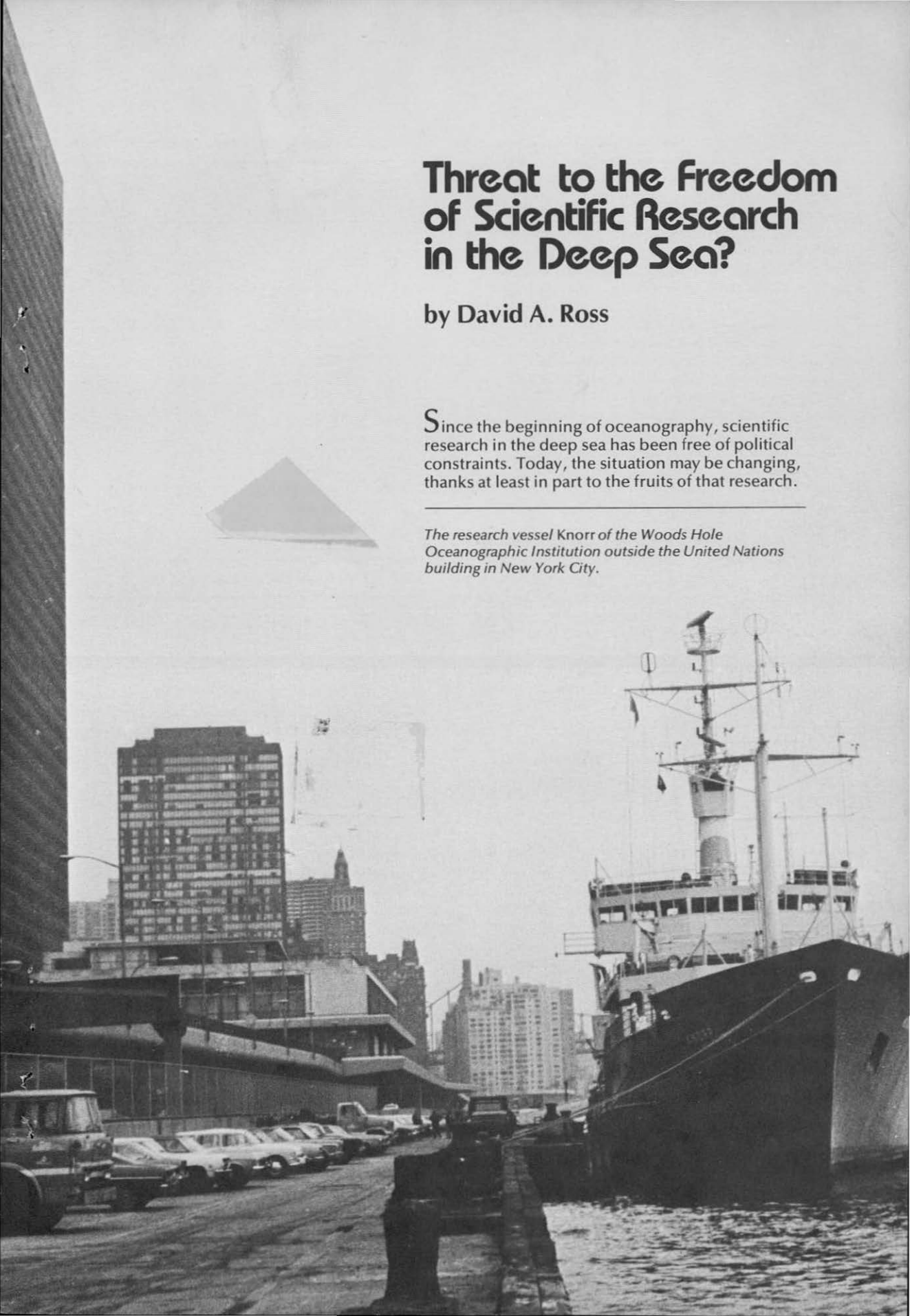
Threat to the Freedom of Scientific Research in the Deep Sea?

by David A. Ross

Since the beginning of oceanography, scientific research in the deep sea has been free of political constraints. Today, the situation may be changing, thanks at least in part to the fruits of that research.



The research vessel Knorr *of the Woods Hole Oceanographic Institution outside the United Nations building in New York City.*

Ironically, scientific work on manganese nodules (see page 60) and other resources has helped to focus economic attention on the abyss. The implications can be serious for both science and society.

To see how the problem has developed, we must go back a few decades. Until the end of World War II, it was generally accepted that a coastal nation could claim sovereignty only over those waters adjacent to its coast out to a distance of three nautical miles — the so-called territorial sea. In the mid-1940s, the United States claimed jurisdiction over the resources on its continental shelf, an area considerably larger than the territorial zone. Washington reasoned that since the continental shelf was a natural extension of the land, the resources of the shelf (petroleum was the main concern) were Federal property. Seaward expansion began in earnest as country after country extended the width of their territorial seas or made exclusive claims for fishing or other economic activities offshore.

In an attempt to impose some measure of moderation and standardization on these unilateral actions, two international meetings — the First and Second Law of the Sea Conferences — were held in Geneva in 1958 and 1960. Freedom of scientific research survived these deliberations in fairly good shape. There were a few restrictions within territorial seas, mostly involving prior permission by the appropriate coastal state. (The maximum width of the territorial sea was left in question; though the United States continued to observe the three-mile limit, other states thought in terms of 12 nautical miles.) In the waters beyond — the high seas — several basic freedoms were defined in a convention adopted by the 1958 Geneva Conference: navigation, fishing, overflights, and pipeline and cable laying. Though no specific mention was made of scientific research, freedom to conduct such work on the high seas was generally accepted as a basic right of individual nations.

In the years following the 1958 and 1960 Conferences, the expansion of territorial claims continued. By 1977, more than 27 states had declared territorial seas of more than 12 miles (Table 1), and most had adopted the 12-mile limit. During this period, the developing and less-developed countries of the world were awakening to the potential of the vast mineral and biological resources of the ocean. In 1967, Ambassador Arvid Pardo of Malta made an eloquent plea to the United Nations that the resources of the ocean should become "the common heritage of mankind." Within a decade, this noble thought was to become a hollow dream, as coastal countries pushed their claims of sovereignty farther and farther seaward. These pressures led to the Third Law of the Sea Conference, convened in 1973; it has met yearly since then. One result of these meetings and

Table 1: Changes in territorial sea claims (1973-1977).

Breadth (Nautical miles)	Number of Countries 1973	1975	1977 (Sept.)
3	25	30	26
4	4	4	4
6	11	13	8
10	1	1	1
12	54	57	60
15	1	0	1
18	1	1	0
20	0	0	1
30	3	4	3
50	1	3	4
100	0	1	2
130	1	1	0
150	0	1	2
200	10	9	14
Modified archipelago	0	3	3
No legislation	6	1	1
Greater than 12 nautical miles	17	20	27

Source: U.S. State Department reports.

negotiations (believed by many to be the most complex ever held) is that coastal States will gain control over what is called the Exclusive Economic Zone (EEZ) that extends seaward for at least 200 nautical miles off the coastal State. The distance can be even wider if the original 200 miles does not include the entire continental margin (continental shelf, continental slope, and continental rise — a region surprisingly renamed by the conference participants as the continental shelf). Within the EEZ, the coastal State will have clear control over the scientific research proposed by another country. It should be emphasized that the EEZ contains a large portion of what was previously defined as high seas; it covers more than 35 percent of the ocean. These extended claims have already presented considerable problems for marine scientific research.

In the past, there was at least some solace in the fact that there were no restrictions on scientific research in what remained beyond the EEZ (called the Area by the Conference). Unfortunately, even this blessing may not last long. At the most recent session of the Conference (New York, 1977), a few articles appeared in the negotiating text that would extend controls on scientific research into the Area. In large part, this occurred because the developing and less-developed countries are trying to create a Seabed Authority to control the exploitation of the large quantities of manganese nodules in the Area. The Authority would be composed of all States, each having equal sovereignty and voting rights. Clearly, the maritime powers would not represent a majority, or even close to it. Two specific articles in

the 1977 negotiating text concern scientific research in the Area (I quote only the sections that could prove most difficult):

Article 143 says that "States Parties shall promote international co-operation in marine scientific research in the Area exclusively for peaceful purposes by: . . . (b) Ensuring that programmes are developed through the Authority . . . for the benefit of developing countries and technologically less-developed countries."

Article 151, paragraph 7 says that "The Authority shall carry out marine scientific research concerning the Area and its resources, and may enter into contracts for that purpose. The Authority shall promote and encourage the conduct of marine scientific research in the Area, harmonize and co-ordinate such research, and arrange for the effective dissemination of the results thereof."

The potential problems lie in the interpretations of "promote," "peaceful purposes," and "ensuring" in Article 143 and "promote" and "harmonize and coordinate" in Article 151. One view is that the Authority would have considerable control over scientific research in the Area.

It is, of course, premature at this time to predict whether or not these articles will be accepted, or whether they will even survive the 1978 Law of the Sea Conference in New York. The acceptance of these articles could prove to be catastrophic in terms of freedom of marine science in the remaining portions of the oceans. I suspect that most marine scientists and administrations feel that the possibility of this becoming effective is infinitesimal — a feeling most of us had only a few short years ago about scientific research ever being controlled in a 200-mile Exclusive Economic Zone.

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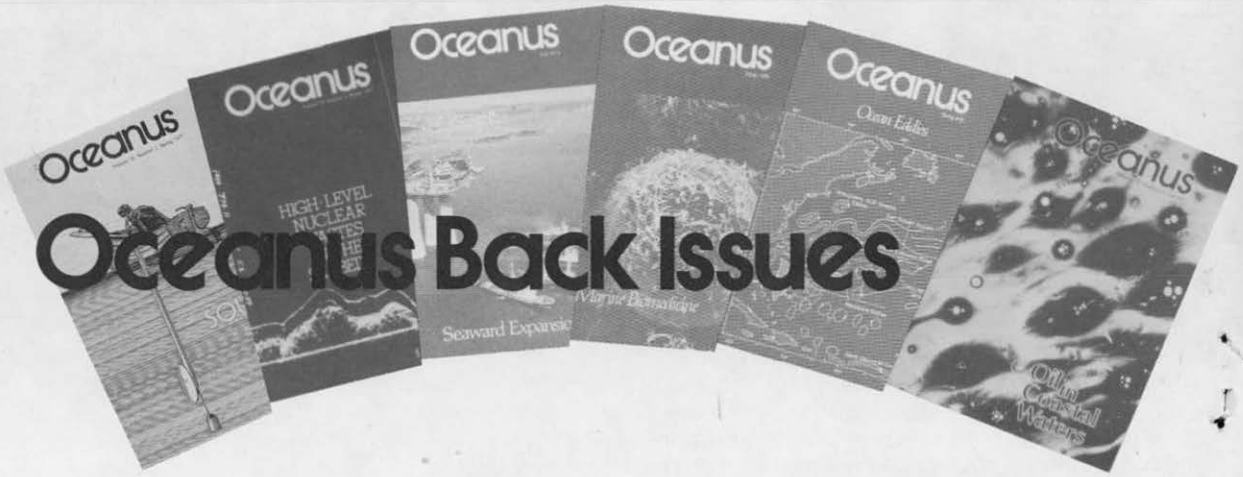

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