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Impact of the Law of the Sea Treaty on the Soviet Fishing Industry

Gary Lee Roemmich
University of Rhode Island

THE UNIVERSITY OF RHODE ISLAND

IMPACT OF THE LAW OF THE SEA TREATY ON THE SOVIET FISHING INDUSTRY

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by
Gary Lee Roemmich

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INTRODUCTION

The signing of the United Nations Conference on the Law of the Sea (UNCLOS) Treaty was the maturation of an idea that was born thirty-six years ago. That treaty placed into effect the 200 mile exclusive economic zone (EEZ). A universal 200 mile EEZ could be a death knell for the high-seas fishing fleets we know today as the majority of the major fishing grounds lie within 200 miles of the coast.

The Soviet Union presently has the largest fishing fleet in the world and will perhaps feel the largest impact from the treaty signing. In the post World War II era, the Soviet Union became dedicated to becoming the world's major fish producer. By the late 1960's, Soviet vessels could be spotted on every major fishing ground around the globe. In spite of the great amount of capital invested, the Soviets could not displace Japan as the world's largest fish producer.

This paper intends to evaluate what impact the treaty will have on the Soviet fishing industry. The exclusion of the fleet from many of the major fishing grounds is sure to reduce the catch totals. Just how much the catch will be reduced is open to conjecture. An analysis of history is sure to provide an indication of the extent of the reduction. The effects of earlier EEZ's can be evaluated closely to see how much, if any, the local Soviet catch dropped.

Two other areas that need to be studied are bilateral fishing agreements and the use of joint ventures. The Soviets have used both concepts for years in various parts of the world. Their dependence upon these mechanisms is certain to increase dramatically. In fact, they have been used as tools to further the teachings of Marx and Lenin and broaden the sphere of Soviet influence.

CHAPTER I

THE EXCLUSIVE ECONOMIC ZONE DEVELOPMENT

Development.

The concept of a 200 mile EEZ was born in 1952 when Chile, Peru, and Ecuador claimed a 200 mile territorial sea in the Declaration of Santiago.[1] It was originally conceived to curb a pelagic whaling fleet being fitted by a Greek shipowner to work off South America. The concept was first rejected as being the whim of a few "small time" politicians and later contested bitterly as Peru began to exploit her own coastal resources.

The 1960's saw the deployment of large distant water fishing fleets off foreign shores. This caused a great deal of concern for many of the developing countries. In 1967, the Soviets caught 677,000 tons of hake from the Patagonian Shelf off Argentina.[2] In response, Argentina joined the "Santiago Three" and declared a 200 mile territorial sea in late 1967.[3] The Soviets were forced to acknowledge this claim and left Argentine waters.

The Soviet fleet then moved north to Uruguay. Uruguay declared a 200 mile territorial sea in 1969, pushing the Soviets further north to Brazil. The Brazilian government quickly established a 200 mile territorial sea (1970) to quickly push the Soviet fleet out of the area.[4] By the end of the 1960's, 15 countries claimed limits exceeding 12 miles.[5]

South America was not the only area that became concerned by the large Soviet fishing fleet during the 1960's. The United States saw extensive Soviet fishing on both coasts during the 1960's. This caused a great deal of concern in the American fishing industry and subsequently, the halls of Congress. As a result, the United States passed a 12-mile exclusive fishing zone.[6] Although deemed sufficient at the time, the United States, a decade later, also declared a comparable 200-mile exclusive fishing zone.[7]

The concept began to take hold during the 1970's. The developing countries saw a means of giving their small coastal fishing fleets a chance to compete with the large distant water fleets. At the UNCLOS III in 1973, the developing countries showed a great deal of concern over the depletion of fish stocks caused by the escalating efforts of distant-water fishing fleets.[8] The consensus was that individual states should have increased management authority over fisheries off their coasts. They also agreed that coastal states should have preferential rights in respect to adjacent fish resources.

In Caracas, in 1974, the debate quickly demonstrated that the coastal state concern was deeply held and strongly supported by a large majority of states participating in the Conference.[9] By the end of the Caracas session, what was once just a Latin American aberration had become the standard of expectation and the basis of negotiation. It became a foregone conclusion that the 200 mile EEZ would be universally accepted at an early date.[10]

It was after the Caracas session that a number of countries claimed increased economic zones. Table 1 shows the years that each country extended their jurisdiction. By the end of 1980, 87 countries were to have claimed EEZ's of 200 miles.[11] In fact, of the ten leading fishing countries, only the People's Republic of China had extended jurisdiction less than 200 miles (see Table 1).

The Argentine-Soviet incident was not the only one to have major international implications. The Cod War of 1979 and 1980 brought Iceland and Great Britain to an armed confrontation.[12] Warships on both sides were used to stress their respective government's wishes. It was only Iceland's persistence which was to finally win out in the tense, potentially highly explosive situation.

The acts that made the 200 mile EEZ a recognized standard were the declarations of the United States, Canada, Norway, the European Economic Community (EEC) and the USSR. With this group of countries supporting the EEZ, it was to become only a matter of time before it became an internationally recognized standard.

Soviet Stand.

Many people were quite surprised when the Soviet Union showed their support for the 200 mile EEZ. Without a doubt, their fishing industry had the most to lose. In fact, 99 percent of all of the presently exploited fish stocks would come under national jurisdiction.[13] However, the Soviet fishing interests were secondary to interests of the Soviet Navy.

TABLE 1

NATIONS CLAIMING EXTENDED JURISDICTION AND YEAR OF ENTRY INTO FORCE (DECEMBER 1980)

200 miles
Exclusive economic zones:

Bangladesh	1974
Barbados	1979
Burma	1977
Cape Verde	1978
Colombia	1978
Comoro Islands	1976
Costa Rica	1975
Cuba	1977
Dominican Rep.	1977
Fija[a]	
France	1977
Grenada	1978
Guatemala	1976
Guinea Bissau	1978
Haiti	1977
Honduras	1951
Iceland	1979
India	1977
Indonesia	1980
Ivory Coast	1977
Kampuchea	1978
Kenya	1979
DPR Korea	1977
Malaysia[d]	1980
Maldives[d]	1976
Mauritania	1978
Mauritius	1977
Mexico[e]	1976
Morocco[e]	1980
Mozambique	1976
New Zealand	1978
Nicaragua	1978
Nigeria	1980
Norway	1977
Pakistan	1976
Papua New Guinea	1978
Offshore waters	
Philippines	1979
Portugal	1977
Sao Tomee	
Principe	1978
Seychelles[e]	1977
Spain[e]	1978
Sri Lanka	1977
Surinam	1978
Togo	1977
Venezuela	1978
Vietnam	1977
Western Samoa[a]	
PDR Yemen	1978

Exclusive fishing zones:

Angola	1976
Australia	1979
The Bahamas	1977
Canada	1977
Chile	1952
Denmark	1977
Gambia	1978
FR Germany	1977
Guyana	1977
Ireland	1977
Japan	1977
Kiribati	1978
Rep of Korea	1954
Netherlands	1977
Oman	1977
Senegal	1976
Solomon Islands	1978
South Africa	1977
Sweden	1978
Tuvala	1978
UK	1977
USA	1977
USSR	1976
Vanuatu	1978

TABLE 1 (continued)

Territorial Sea:

Argentina	1967	Peru	1947
Benin	1976	Sovereignty and jurisdiction over the sea, its soil and subsoil	
Brazil	1970		
PR Congo	1977		
Ecuador	1966		
El Salvador	1950	Sierra Leone	1971
Ghana	1977	Somali Democratic Republic	1972
Guinea	1965		
Liberia	1976	Uruguay	1969
Panama	1967		

Extension between 12-200 miles:

Albania	1976	15 miles	Madagascar	1973	50 miles
Belgium	1978	median line	Malta	1978	24 miles
Cameroon	1974	50 miles	Poland	1978	median line
Gabon	1972	100 miles	Qatar[b]	1974	
GDR	1978	median line	Saudi Arabia[b]	1974	
Iran[b,c]	1973		Tanzania	1973	50 miles

[a] Legislation enacted. Entry into force pending.
[b] Outer limit of superjacent waters of the continental shelf.
[c] Median line in Sea of Oman.
[d] Areas defined by geographic coordinates.
[e] Except Mediterranean.

Source: Tony Loftas, "FAO's EEZ Programme," Marine Policy, July 1981, pp. 233, Table 5.

Originally, the Soviets opposed the 200 mile EEZ. They claimed:

> Some States were seeking to permit the coastal State to set its own limits for the economic zone. Such a proposal would create chaos in the delimitation of the high seas and was clearly motivated by political and hegemonistic aims.[14]

The major Soviet fear was that economic zones would creep and become zones of political control as well. This would serve to limit the maneuverability of the Soviet Navy, merchant marine, and oceanographic research.[15]

Even if the EEZ's did not creep, they would endanger Soviet ocean use by withdrawing the world's most productive fishing waters from the high seas and putting fishing resources within the coastal states' jurisdiction. They argued that fish only lived for a short period of time and if not caught and utilized, they would die. It was wrong to waste any available resources of fish with a large percentage of the world population suffering from starvation.[16] They argued that EEZ's "would in practice mean the end of technically well-equipped and very economically run deep-sea fishing, and its replacement by small fleets of coastal tramp vessels." The fact that the Soviet Union exports only 4-1/2 percent of her catch shows her dependence on her fishing investment and food supply.[17]

The Soviet Union recognized the need to make some concessions on the fisheries questions to guarantee her freedom for her other fleets. The following statement shows their willingness to make concessions:

> . . . some States consider that if the territorial sea were fixed at twelve miles, the coastal States might have to receive some special fishing rights beyond the limits of the territorial sea in contiguous areas. The Soviet Union fully understands the importance of that matter and is ready to seek for its just and correct solution.[18]

The initial Soviet solution was contained in its 1972 draft article on fishing. It provided the coastal States with a share of the anadromous species but purposely excluded them from any preferential treatment for the nonanadromous species. This would not disturb the Soviet fishing off North America and Western Europe.[19]

However, the EEZ claims of the United States, Norway, Canada, and the Common Market left the Soviets no alternative. They realized that "the handwriting was on the wall" and moved to make the most of the situation. On December 10, 1976, the Presidium of the U.S.S.R. Supreme Soviet published a decree on temporary measures for the preservation of living resources and regulation of fishing in the marine regions contiguous to the coast of the Soviet Union.[20]

This legislative act temporarily established a 200 mile EEZ pending the signing of the UNCLOS III treaty. This was done to "safeguard the interests of the Soviet Union." They claimed that unlike other countries, their measures were only temporary measures to protect the living resources. The decree was in strict accordance with the provisions of the treaty. This decree showed that the Soviet Union fully supported the UNCLOS III treaty and intended to use their support as a rallying point for the developing countries.

CHAPTER II

DRAFT LAW OF THE SEA TREATY FISHING PROVISIONS

Exclusive Economic Zone.

Fisheries was one of the major items addressed during the conferences. The large, highly efficient fleets of Japan, the Soviet Union, Korea and others had caused a great deal of concern in most of the developing countries as well as a few developed countries. Some way was needed to protect the coastal fisheries and prevent over-exploitation of the fish stocks themselves. The treaty made provisions to cover both of these areas.

The basic item was the standardization of the Exclusive Economic Zone (EEZ). Article 55 was used to define what the EEZ is. It was defined as follows:

> The exclusive economic zone is an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Pact, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this convention.[21]

This article legalized in international law a concept that had been growing in popularity since the 1950's. The breadth of the EEZ was established as 200 nautical miles measured from the baseline of the territorial sea.[22]

According to the treaty, the coastal State has complete control over the fisheries in its territorial and internal waters by virtue of its sovereignty over the area. The sovereign rights include exploring, exploiting, conserving, and

managing the natural resources, both living and non-living, in the EEZ. Conservation of the resources was to be a primary concern. It will establish the quotas that are available to their own fishing fleets.

The treaty also requires that the coastal State gives other States access to the "surplus" of the total allowable catch. The coastal State has to follow certain criteria in the allotment of its surplus. The high seas fleets will need to establish the fact that many areas where they currently are operating are habitual fishing grounds. This need is of paramount importance. If this is established, the fleet can justify its claim to a portion of the total catch regardless of its relations with the coastal State. Once the precedent is established, the Soviets may be able to force themselves into many of the EEZ's around the world.

The "total allowable catch" (TAC) may be the concept with the greatest amount of controversy. Biologically, this quota will be extremely difficult to establish. A country may set a quota low enough that their own fisheries catch the entire quota with no surplus. Another State that habitually fishes the EEZ has a right to a percentage of the catch. The State could take the coastal State into an international court of law and force it to justify its value for "TAC." Many of the developing States will have extreme difficulty in justifying their TAC in the face of the developed countries' superior fishery research fleets.

This also brings about another problem; that being the difficulty of setting a TAC. This is based on the concept of Optimum Sustainable Yield (OSY) which in turn is based on Maximum Sustainable Yield (MSY). Although both of these concepts work well in theory, their effectiveness in reality is highly questionable. Both of these concepts are really somewhat nebulous. The concept of MSY has been described as:

> . . . based on many premises which may not be true. MSY assumes that the stock is more or less self-contained and before exploitation has attained a steady state at the carrying capacity during the period of exploitation. . . . Finally, it assumes that the process of reducing the stock is reversible. MSY concentrates on the stock to the exclusion of such factors as relationships within a trophic level, relationships between trophic levels, and changes in carrying capacity due to factors such as climate and pollution.[23]

It is quite conceivable that two different people will come up with two different MSY's given the same set of information. If fishing authorities cannot agree on a method, then how can politicians be expected to reach a consensus answer. The lack of research facilities in the developing countries is certain to damage their creditability.

Optimum sustainable yield was the concept used in the draft treaty. Based on MSY, the treaty defines it as "maximum sustainable yield as qualified by relevant environmental and economic factors."[24] This definition is meaningless. Sometimes OSY will be zero; other times it will be MSY. There is no operational basis for making a decision. This leaves open many avenues for litigation and negotiation.

What is likely to happen is that there will be hard negotiations around the world concerning the TAC. The countries that have the most to give will be the ones that gain the most. The Soviet Union certainly stands to gain the most in this regard.

Along with the concept of OSY is the objective of optimum utilization. Article 62 requires that the coastal State must strive to achieve this objective. This is based on a philosophy that a fishing resource not fully utilized is a resource wasted. This concept is questionable at best. Many feel that this only serves the needs of the more powerful fishing nations. It also can be used as a tool in litigation and negotiations to gain a percentage of a country's TAC.

High Seas Fishing

The treaty also deals with fisheries on the high seas. The treaty attempts to deal with these in a fashion that is identical to those for the EEZ. If the legislation's effects in the EEZ are questionable, the same laws for the high seas is ridiculous. At least in the EEZ, there is a coastal State as a central authority fixing the TAC, enforcing conservation measures and allotting the surplus to competing States. The high seas fisheries have not central management authority. The TAC is fixed by the fishing States in negotiations among themselves. The non-fishing States have no voice in the matter. The basis is not unlike the earlier Geneva Convention on fisheries.[25] Its provisions for overfishing were simply rhetoric to the fishing nations about conservation. There were

no mechanisms for reducing the quantities of fish caught among the fishing States. If the regulations won't work under the auspices of the Geneva Convention on fisheries, what makes the United Nations believe that essentially the same laws under a different title (UNCLOS III) will work any better?

Anadromous Species.

The anadromous species and their unique problems were also addressed in the treaty. It gave the State of origin the primary responsibility for conservation and management of the anadromous stocks. These stocks should be fished in the rivers and EEZ's of the State of origin. The high seas fishing for the stocks would be controlled by negotiations and agreements among the States concerned. The TAC will be set by the State of origin but it must consult other States and all of them must agree to the revised quotas. The only guidelines given are that the interests of the coastal State and conservation will be kept in mind. The economic dislocation of the high-seas fishing States is to be avoided.

The only enforcer of quotas is the State of origin itself. They are dependent on the figures supplied by the high-seas fishing States concerning their total catch. There is no way to ban or effectively control high seas fishing for these stocks. The State of origin does not have the authority to intercept and board the high-seas fleets of other States. The major fishing nations certainly hold the cards in future bilateral and multilateral agreements that will cover the anadromous species.

Highly Migratory Species.

The highly migratory species (tunas) were also addressed in the treaty. Article 64 dealt specifically with these unique fisheries.

> 1. The coastal State and other States whose nationals fish in the region for the highly migratory species listed in annex I shall cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region both within and beyond the exclusive economic zone. In regions where no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall cooperate to establish such an organization and participate in its work.[26]

It has been determined that 40 percent of the highly migratory species are caught in the EEZ's. Most of the remaining 60 percent caught on the high seas are by Japan, the U.S.A., Spain, South Korea, and France.[27]

The United States was one of the first countries to take a stand on the highly migratory species. They claim that no one State has control over these stocks as they move over very large distances without reference to coastal waters. The fish are pelagic; their appearance in a particular EEZ is one of coincidence. However, it must be noted that the U.S. does not have any significant stocks in the coastal waters.[28]

A definite controversy occurs with regard to these fish stocks. According to Article 56, the coastal State has sovereign rights over the living resources in its EEZ. The article does not make any exceptions. However, Article 64 tasks the States with cooperating directly or through

international organizations to ensure conservation and optimum utilization of such species both within and out of the EEZ. Which article has precedence is unknown. Valid arguments can be made by proponents of both sides concerning their interests.

Even if a conference is formed, there are no mechanisms to force a State to adhere to the allocations allotted to it. This is added to the fact that there is no requirement that a country must participate in the conference. A State could join a conference and remain a member as long as the quotas are to their benefit. Once the quota is dropped, they could leave the conference and act independently.

How to allocate the quotas is another problem. A historical basis would not be fair to the developing States as they are fairly new to these fisheries. The interests of the large, high-seas fleets must also be looked after as the developing countries should not be able to develop their fisheries at the developed countries expense. It is highly unlikely that any quota could be reached that would be acceptable to all parties. These fisheries will probably continue as they have throughout history.

As we can see, the treaty has a number of problem areas. Most of these areas can be either ignored or used to the advantage of the high seas fleets. The treaty standardized the 200 nautical mile EEZ but it provided mechanisms for the high seas fleets to enter the EEZ's and demand their share. The high seas, anadromous, and highly migrational fisheries quite often simply restated the status quo. Perhaps this was

intentioned to ensure the acceptance of the treaty. The high-seas fleets will continue to fish these stocks as they always have.

CHAPTER III

HISTORICAL DEVELOPMENT OF THE SOVIET FISHING INDUSTRY

To effectively determine where the Soviet fishing industry is headed in the future, one must look at the past to determine how and more importantly why they've done what they have. Presently, they have the world's largest fleet in terms of number of vessels and combined tonnage.[29] This rise has not been accidental but the results of a total dedication towards the goals of becoming the world's major fish producer.

The fishing fleet's history has undergone three different stages in reaching today's status: pre-revolutionary Russia, the revolution through World War II, and the third stage, post-World War II Russia. The fourth stage began with the signing of the new UNCLOS III treaty.

Pre-Revolutionary Russia.

Fishing has been an occupation of Russians since the middle of the 12th century. Most of the lakes and rivers of European Russia were fished by local inhabitants. Even then, fishing was an act of the State; the fishermen at the White Lake Fish Yard were under the direct control of the Department of the Great Palace in Moscow.[30]

By the end of the fifteenth century, all of the rivers and lakes in the settled areas were fished. There was some trade in caviar and salt fish (sturgeon) but most was consumed locally. Fishing was the major stimulus in the exploration and development of new territories in central and Asian Russia.[31]

Fisheries development really picked up steam during the late 1800's. The development of steamships provided the nation with the ability to supply many of the districts in European Russia. The building of railroads further facilitated the transportation of fish.

Legislative reforms also promoted fisheries development. Two major pieces of legislation were the abolition of serfdom (1861 reform) and the salt tax abolition.[32] With the abolition of serfdom, the available labor pool grew drastically. The salt tax revocation lowered production costs and greatly raised the investors' profits. Both reforms made the industry financially attractive.

The abolition of private fishing grounds, their transfer to state management, and the granting of fishing rights to the general public also promoted the development of fishing.

The fishing was concentrated in the inland bodies of water. These provided 82.7 percent of the total catch. The high seas fleet accounted for only 17.3 percent.[33] The Caspian Sea was undoubtedly the most important body of water as 63.1 percent of the total catch came from this sea. This was over twice as great as that for any body of water.

The catch increased 328 percent in the period from 1860 to 1913 (see Table 2). The development was quite irregular as the primary motivating factor was profit. High seas fleets with their associated high costs were ignored as their profit level could not compare with the inland waters.

During this period, the Russian catch was not great enough to meet the local demand. A number of European States imported fish to meet this demand. Many of these same fish were caught in Russian waters. At the time, the Russian government was totally dependent on her Western European allies.[34] It was to their benefit not to have the Russians develop a high seas fleet to compete with European fleets.

The Russian fishing fleet was technically extremely backward. Only ninety vessels of a total hundred thousand were motorized.[35] For over a century, the main fishing vessels were mother ships with catcher boats, all sail-driven. The fish were unloaded by hand and moved by wheelbarrow. Because of the fish's perishable nature, the catch had to be sold immediately.

World War I put an end to the Russian fishing industry's development. The fishing in the North dropped to half its former volume, and the fishing in the Baltic virtually stopped.[36] The government bought ready-made fish products from various entrepeneurs to supply their army. The only unaffected fisheries were in the Far East and Western Siberia.

Reconstruction and Industrialization.

World War I and the revolution definitely took their toll on the fishing industry. In 1920, the catch dropped off and was then lower than the catch total for 1860 (Table 2). Lenin saw the need to industrialize all facets of the Soviet economy. However, the civil war precluded any build-up or development of industry.

The damage to the fishing industry was incalculable. Many vessels and much gear were destroyed in the Volga-Caspian region.[37] Many of the fishermen were mobilized and the food shortages made many others take up farming. In 1919, the catch dropped to an all-time low of 170,000 tons. In spite of the conditions, the Caspian Sea remained the principal source of fish products.

Associations were formed to rehabilitate the fishing industry. These associations bought fish from the fishermen and in return sold them the materials to continue in the trade. These were instrumental in raising the 1920 catch to 257,000 tons.[38]

To further rehabilitate the high seas fishing fleet, the Soviet government took steps to protect its resources from foreign fishing industries. The decree "The Protection of Fishing and Hunting Grounds of the Arctic Ocean and the White Sea" was signed by Lenin in 1920. This extended the territorial waters of the U.S.S.R. to twelve miles.

The reconstruction of the fishing industry was completed by 1930. The catch exceeded the 1913 level for the first time (see Table 2). The fishery unions were continuing to grow in strength. They comprised sixty percent of the industry in 1930. Stable prices and an increased demand were instrumental factors that led to a successful recovery.

Once the reconstruction was complete, the Soviet Union launched an industrialization drive. This drive caused a rapid growth in urban areas and subsequently caused a need to develop

TABLE 2

SOVIET CATCH BY YEAR (1860-1980)

Year	Soviet Catch (1,000,000 Tons)	Percent of World Catch
1860*	.32	--
1913	1.05	--
1917	.89	--
1920	.26	--
1925*	.896	--
1930	1.28	--
1935		
1948	1.49	7.6
1950	1.63	7.8
1955	2.50	8.6
1960	3.05	7.7
1965	4.98	9.5
1970	7.25	11.0
1975**	9.96	14.99
1980**	9.41	13.03

*Sysoev, N. P., Economics of the Soviet Fishing Industry, Translated by the Israel Program for Scientific Translations (Jerusaleum: Keter Press, 1974), p. 17.

**United Nations, Food and Agricultural Organization, 1980 Yearbook of Fishery Statistics; Catches and Landings, Vol. 50, 1981, pp. 41-42.

Source: U. S. Congress, Senate, Committee on Commerce and National Ocean Policy, Soviet Oceans Development, Comm. Print, 94th Cong., 2nd Sess., 1976, pp. 397, Table 2.

the food industry. Fisheries was a way seen to help supply food to these growing urban areas. The only way seen to increase the catch without damaging the fish stocks was to expand fishing in the open seas.

The Soviet government began to invest and industrialize its fishing fleet. Table 3 shows the capital investments made in the fishing industry beginning in the first five-year period (1929-1932). As can be seen, the majority of the investments were to construct shore-based processing plants. Over 91 percent of the total investment went for this development.[39]

This development altered the entire nature of the Soviet industry. No longer were the fleets limited to salted fish or fresh fish for local consumption only. They developed the capability to ship their products around the country.

During the same time period, the fishing vessels became multi-purpose. They could handle various types of fishing (seine, drift nets, and trawls).[40] In spite of the small percentage of the capital assets devoted to vessel construction, the fleet increased from 1,336 vessels in 1930 to 5,987 vessels in 1940.[41] This was a 440 percent increase. The private sector was eliminated during this time period.

The emphasis was shifting from inland waters to a high seas fleet. More of the vessels were now capable of operating at sea. The inland waters capacity started to decline. This was due to a number of reasons. The most notable was the drop in water level in many of the inland seas.[42] This was caused by the decrease in river runoff caused by dam construction.

TABLE 3

CAPITAL INVESTMENTS IN THE SOVIET FISHING INDUSTRY, BY PLANNING PERIODS
(in million rubles)

Period		Total investment	Per Year	For fishing fleet Total	For fishing fleet Per Year	For shore-based plants Total	For shore-based plants Per Year
1st FYP:	1929-1932	17.6	4.4	1.6	0.4	16.0	4.0
2nd FYP:	1933-1937	55.0	11.0	5.0	1.0	50.0	10.0
3rd FYP:	1938-1940	46.2	15.4	3.6	1.2	42.6	14.2
	1941-1945	96.8	19.4	7.7	1.5	89.1	17.8
4th FYP:	1946-1950	366.0	73.2	218.0	43.6	148.0	29.6
5th FYP:	1951-1955	721.0	144.2	386.0	77.2	335.0	67.0
6th FYP:	1956-1958	886.5	295.5	560.1	186.7	326.5	108.8
7th FYP:	1959-1965	2,032.0	290.3	1,533.5	219.1	498.5	71.2
8th FYP:	1966-1970	3,500.0	700.0	2,450.0	490.0	1,050.0	210.0
9th FYP:	1971-1975	4,000.0	800.0	2,600.0	520.0	1,400.0	280.0
TOTAL		11,721.1	254.8	7,765.5	168.8	3,955.6	86.0

Source: U. S. Congress, Senate, Committee on Commerce and National Ocean Policy, Soviet Ocean Development, Committee Print, 94th Congress, 2d Sess., 1976, pg. 390, Table 1.

This raised the salinity of the bodies of water causing a decrease in reproduction.

The fishing industry once again received extensive damage during World War II. A large part of the processing and catching capability was destroyed. The total loss (including the potential catch) was valued at 200 million rubles.[43] The entire economy switched to military production, which meant that the fishing sector no longer received the supplies or replacements it needed.

Two areas did exhibit growth during the war. The Far East and Siberia exhibited accelerated growth. This allowed the Soviets to supply the front and rear areas with fish products. Each of these areas exhibited over 100 percent growth in 1942 alone.[44] As territories were liberated, reconstruction began. By the end of 1945, the catch total was still 20 percent below the prewar figures.[45] Over 5,000 vessels were destroyed during the war.[46]

Post World War II.

Following World War II, the primary goal became the reconstruction of industry, agriculture, and the fishing industry. The fishing industry was specifically tasked with four specific items: (a) to provide fish products for consumers at home; (b) to provide fodder meal for animal breeding; (c) to supply other branches of industry with fish products, such as margarine production, confections, pharmaceuticals, soap and textiles; and (d) to ensure a positive foreign trade balance.[47] The

intentions were to attain the pre-World War II catch totals by 1950. This was accomplished by 1974.

The Soviets following World War II began to view fisheries somewhat differently. Their agricultural sector had always been the weak link in the Soviet economy. The heavy manpower losses of World War II made male farm manpower quite scarce.[48] The turn to fisheries as a source of animal protein was made for primarily economic reasons. The Soviet view was stated best by S.V. Mikhailov.

> . . . to produce 100 kilograms of live-weight beef, it takes a capital investment of 2,000-2,500 rubles. But for a similar amount of fish only about 1,500-1,700 rubles are necessary. One must remember that arable land is a relatively modest proportion of the total surface area of the U.S.S.R., a country where permafrost, deserts, and dense forests extend for thousands of miles. The growing season is subject to severe climactic extremes, and in drought or flood years, crops may be severely damaged.[49]

In the early post-war years, most of the fishing vessels were constructed in East Germany (GDR) where the Red Army was the occupying force. These vessels were then shipped to the U.S.S.R. as war reparations.[50] The extensive shipbuilding program of the Soviet Navy kept the Soviet shipyards busy. Because of this, the Soviets continued to buy foreign made vessels. Today, they purchase vessels from France, the Netherlands, United Kingdom, Sweden, Finland, Denmark, Poland, East Germany, Japan and the Federal Republic of Germany. By 1975, the GDR had supplied the Soviet Union with over 1,800 fishing vessels.[51]

Table 3 shows that there was a shifting of emphasis for capital investments. The bulk of investments now went for

fishing vessel investment instead of the shorebased processing plants. In fact, the investments for the fourth five-year plan (1946-1950) exceeded the total investments for the years 1929 through 1945.

It was obvious that a simple attainment of pre-World War II levels was not the final goal. Something much larger was the objective; becoming the world's leading fish-catching nation.

The Soviets increased agricultural problems have increased their dependence upon the sea for fishing products. Their fishing fleet became of increasing importance and investments continued to pour in. These investments were not without results. The Soviet catch in only twenty-five years showed an increase of 611 percent (see Table 1). The Soviet percent of the world catch rose from 7.8 percent in 1950 to 14.99 percent in 1975.

The Soviets continually expanded their area of operations to include all of the world's major fishing grounds during this phase. Quite often, fleets of 200 fishing vessels could be spotted working fishing grounds thousands of miles away from their Soviet homeports. To date, they have not accomplished their goal of having the largest fishing catch but they do have the world's largest fishing fleet. By 1973, the Soviets had over 25 percent of all of the world's fishing vessels by number and 56.2 percent of the world's vessel gross tonnage (see Table 4). By 1980, the number of vessels dropped to 4,500 but the gross tonnage remained the same.[52]

It's possible that the Soviets may never attain their goal. The UNCLOS III treaty certainly damages their cause. Perhaps even more damaging is their poor efficiency. Of all of the major fishing nations, the Soviets have traditionally caught the least fish with the most gear. Table 4 shows that the Soviets caught only 1.32 metric tons per gross registered ton. Comparing this with other States' totals shows just how inefficient the Soviets have been in this phase of development.

TABLE 4

HIGH-SEAS FISHERY FLEETS OF SELECTED COUNTRIES, NUMBER OF VESSELS, GROSS TONNAGE AND CATCH PER GROSS TON, 1973

Country	Number of Vessels	Gross Tonnage (in GRT)	Percent of Total World Tonnage	Fisheries Catch (in million (mt)	Catch per GRT (in mt)
U.S.S.R.	4,700	6,500,000	56.2	8.6	1.32
JAPAN	3,099	1,510,985	13.0	10.7	7.08
SPAIN	1,953	510,491	4.4	1.6	3.13
U.S.	1,577	357,620	3.1	2.7	7.55
NORWAY	604	202,745	1.8	3.0	14.80
OTHER	6,679	2,491,113	21.5	28.3	11.36
TOTAL	18,412	11,572,954	100.0	54.9	4.74

Source: U. S. Congress, Senate, Committee on Commerce and National Ocean Policy, Soviet Ocean Development, Committee Print, 94th Congress, 2d Sess., 1976, p. 426, Table 4.

CHAPTER IV

ANALYSIS OF FISHING BY REGIONS

As Table 5 shows, 1976 was the high water mark for the U.S.S.R. fishing industry. Following that year, there were a few years of decline followed by two years of a small increase. One only needs to look at Table 1 to see that a large number of nations declared 200 mile EEZ's during this period.

To effectively evaluate the future of Soviet fisheries, these years will prove to be critical. Earlier declarations simply forced the Soviets to move to other regions. Their regional catch may have suffered but their total catch continued to increase.

Each region's catch will be analyzed for its trends and significant events (see Figure 1). In each case, there is a direct correlation between the two. These will all provide clues to what the future holds for the Soviet fishing industry.

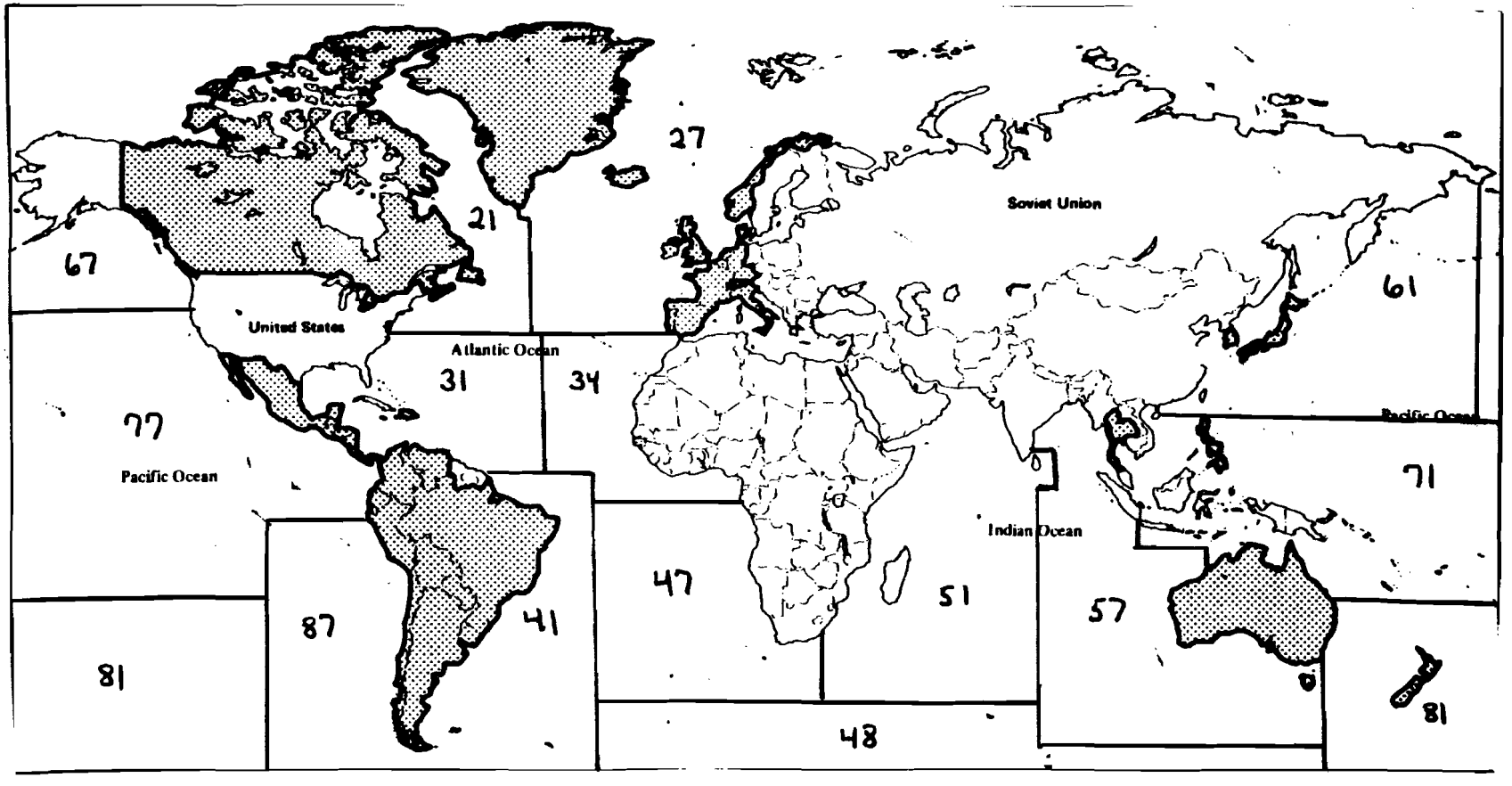
Northeast Atlantic.

The Northeast Atlantic has been one of the traditional fishing grounds of the Soviet Union. Their first high seas fleet started in these waters. Although it was at one time the major fishing grounds of the Soviet fleet, it has dropped in importance in recent years as the Northwest Pacific has increased in importance.

Table 6 shows that there has been an overall steady increase in both the Soviet catch as well as the world catch. The year by year totals have shown this increase not to be

FIGURE 1

World's Fishing Regions



Source: U.S. Congress,Senate,Committee on Commerce and National Ocean Policy, Soviet Oceans Development, Committee Print,94th Cong.,2d Sess.,1976, p.411.

TABLE 5

SOVIET AND TOTAL WORLD CATCH FOR YEARS 1955-1980

Year	USSR Catch	Inc. in 1000 MT	% of Inc.	World Catch	Inc. in 1000 MT	% of Inc.	USSR % of World Catch
1955	2500.0[1]	---	---	28,310.0[1]	---	---	---
1956	2,620.1	120.0	4.8	29,830.0	1,520.0	5.4	8.78
1957	2,530.0	-90.0	-3.44	30,810.0	980.0	3.28	8.21
1958	2,620.0	90.0	3.56	32,130.0	1,320.0	4.28	8.15
1959	2,760.0	140.0	5.34	35,600.0	3,470.0	10.8	7.75
1960	3,050.0	290.0	10.5	39,500.0	3,900.0	10.95	7.72
1961	3,250.0	200.0	6.56	42,900.0	3,400.0	8.61	7.58
1962	3,620.0	370.0	11.38	46,300.0	3,400.0	7.92	7.81
1963	3,980.0	360.0	9.94	47,400.0	1,100.0	2.37	8.40
1964	4,480.0	500.0	12.56	51,600.0	4,200.0	8.86	8.68
1965	5,099.9	619.9	13.83	53,700.0	2,100.0	4.07	9.50
1966	5,348.8	248.9	4.88	57,500.0	3,800.0	7.08	9.30
1967	5,777.2	428.4	8.01	61,100.0	3,600.0	6.26	9.46
1968	6,082.1	304.9	5.28	64,300.0	3,200.0	5.24	9.46
1969	6,498.4	416.3	6.84	62,900.0	-1,400.0	-2.18	10.33
1970	7,252.2	753.8	11.6	69,300.0	6,400.0	10.17	10.46
1971	7,332.0[2]	79.79	1.10	66,060.8[2]	-3,239.2	-4.68	11.1
1972	7,752.4	420.4	5.73	52,020.3	-4,040.5	-6.12	12.5
1973	8,614.1	861.7	11.11	62,701.7	681.4	1.1	13.7
1974	9,255.4	641.3	7.44	66,466.2	3,764.5	6.0	13.92
1975	9,969.98	714.0	7.72	66,376.3	-89.9	0.14	15.02
1976	10,132.21	162.23	1.63	69,753.0	3,376.7	5.09	14.52
1977	9,347.44	-784.77	-7.75	68,914.0	-839.0	-1.21	13.56
1978	8,918.02	-429.42	-4.6	70,438.6	1,524.6	2.21	12.66
1979	9,114.0	195.98	2.2	71,265.6	827.0	1.17	12.79
1980	9,412.15	298.15	3.27	72,190.8	925.2	1.30	13.04

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 37-38, Table A-1.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 40-42, Table A-1.

TABLE 6

SOVIET AND WORLD CATCH FOR THE NORTHEAST ATLANTIC (27) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	1,076.0[1]	---	---	8,650.0[1]	---	000	12.44
1965	1,048.0	-28.0	-2.6	9,620.0	970.0	11.21	10.89
1966	1,147.7	99.7	9.51	10,200.0	580.0	6.03	11.25
1967	1,118.7	-29.0	-2.53	10,350.0	150.0	1.47	10.81
1968	1,416.1	297.4	26.58	10,250.0	-100.0	-0.97	13.82
1969	1,469.7	53.6	3.79	10,020.0	-230.0	-2.24	14.67
1970	1,561.8	92.1	6.27	10,600.6	580.6	5.79	14.73
1971	1,372.6[2]	-189.2	-12.11	10,368.2[2]	-232.4	-2.19	13.24
1972	1,267.6	105.0	-7.65	10,580.3	212.1	2.05	11.98
1973	1,606.5	338.9	26.74	11,152.6	572.3	5.41	14.40
1974	1,995.2	388.7	24.20	11,689.07	536.47	4.81	17.07
1975	2,401.8	406.6	20.38	12,014.69	235.62	2.79	19.99
1976	2,543.75	141.95	5.91	13,162.65	1,147.96	9.55	19.33
1977	2,001.0	-542.75	-21.33	12,576.13	-586.62	4.46	15.91
1978	1,726.23	-274.77	-13.73	11,674.60	-901.53	-7.17	14.79
1979	1,933.25	207.02	11.99	11,708.30	33.7	2.88	16.51
1980	1,983.17	49.92	2.58	11,711.83	63.53	0.54	16.85

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 217, Table C-27.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 253, Table C-27.

quite so steady. Like the world total, 1976 was the year with the largest catch, and the following years showed a similar reduction.

The 1976 catch produced excess in the Northeast Atlantic area. To alleviate some of this excess, fresh fish were exported to Norway. A number of processing plants in northern Norway were under the threat of having to make massive labor layoffs. The Norwegians had already exhausted their quota so they could not alleviate this problem. The U.S.S.R. exported cod and shrimp to Norway to allow these plants to maintain their employment. One plant in Tromso imported 2,000 tons of shrimp that were valued at several million kroner.[54] This caused a large public outcry in Norway. The government, in an attempt to keep imports to a minimum, stated publicly that it would import fish products only in emergencies.[53]

The EEZ came to the Northeast Atlantic during the end of 1976. The Soviets were the first to declare in December 1976.[54] Shortly thereafter, the majority of the European Economic Community (EEC) countries declared their EEZ's.[55] Norway later declared 200 mile EEZ's around both Jan Mayen Island and Spitzbergen Island.[56] This took away many of the traditional Soviet fishing grounds.

The boundaries in the North Cape area were never properly defined. The area of controversy was called the "grey zone." Even the size of the grey area was open to controversy. Finally in late 1977, the "grey zone" principle was agreed upon.[57] The Soviet will held supreme as their desires won

out. The Norwegians lost some territory as the sea frontier was established west of their claim.

Undoubtedly, the EEZ declarations were instrumental in the 1977 and 1978 decline. In fact, of the total regional decline of 586,520 metric tons, 542,750 metric tons of it were attributable to the Soviets (see Table 6). 1978 saw the regional decline double while the Soviets reduced their loss to only half of the 1977 loss. These two years saw a 33 percent reduction in the catch total.

By 1979, the Norwegians recognized the "historic rights" of the Soviet fishing fleet in the area. The Soviets were given larger quotas in the Norwegian EEZ. This quota increase was for the Soviet acknowledgement of the Norwegian fishing zone around Jan Mayen Island.[58] The Soviets also transferred some quotas back to Norway. These quotas spurred the increase in catch for the years 1979 and 1980.

The EEC has developed an integrated fishing policy. Non-member nations would be forced to deal with the EEC governing body to obtain quotas in the EEZ.[59] The Soviets refuse to negotiate with the EEC and state they will only sign treaties with each individual State. This stalemate is sure to remain for some time. Although Norway is a member nation, her allocations to the Soviet Union are exempt from the EEC's Fishing Administration.[60]

The Soviets have continued negotiations with a number of other nations. In November 1981, they signed a ten-year agreement with Finland. The Finns were allowed to catch 35 tons of

salmon in Soviet waters while the Soviets are allowed 3,600 tons of herring and 900 tons of sprat in the Finnish zone.[61]

Sweden and the U.S.S.R. have been negotiating since 1970. Once again a boundary dispute is the cause of difficulties. The area of dispute is around Gothland Island. The recent Soviet violations of Sweden's territorial seas by submarines have toughened the stance of both countries.[62] It is unlikely that an agreement will be reached in the near future.

The British recently cut the flow of technological information going to the Soviet Union. A licensing system was also imposed on Soviet factory vessels in British waters. Both items were steps to reduce the Soviet catch in British waters.[63]

The proximity to the Soviet Union insures this area as continuing to be one of the major Soviet fishing grounds of the future. The toughening stance of the EEC countries is sure to reduce the catch totals but it will always remain at a highly significant level.

Northwest Atlantic.

The Soviets first entered the region in 1956 when their vessels appeared off Newfoundland. By 1961, they had expanded southward to New England. By the early 1970's, the region was producing at levels that were comparable with the Northeast Atlantic and the Northwest Pacific. Table 7 shows these trends. The Soviet catch had doubled in the period from 1964 to 1975.

TABLE 7

SOVIET AND WORLD CATCH FOR THE NORTHWEST ATLANTIC (21) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	645.5[1]	---	---	3,390.0[1]	---	---	19.04
1965	886.5	241.0	37.34	3,760.0	370.0	10.91	23.58
1966	842.3	-44.2	-4.99	4,020.0	260.0	6.91	20.95
1967	623.1	-219.2	-26.02	4,030.0	10.0	0.24	15.46
1968	794.0	170.9	27.43	4,590.0	560.0	13.9	17.3
1969	982.7	188.7	23.77	4,360.0	-230.0	-5.01	22.54
1970	812.4	-170.3	-17.33	4,146.7	-213.3	-4.89	19.59
1971	1,021.6[2]	209.2	25.75	4,321.0[2]	174.3	4.20	23.64
1972	1,150.0	128.4	12.57	4,289.6	-31.4	-0.73	26.81
1973	1,357.3	207.3	18.03	4,425.9	136.3	3.18	30.67
1974	1,157.03	-200.27	-14.76	3,949.22	-476.68	-10.77	29.30
1975	1,166.93	9.9	0.86	3,764.44	-184.78	-4.68	31.00
1976	852.68	-314.25	-26.93	3,385.55	-378.89	-10.06	25.19
1977	432.74	-419.94	-49.25	2,980.73	-404.82	-11.96	14.52
1978	207.68	-225.06	-52.01	2,786.4	-194.33	-6.52	7.45
1979	125.19	-82.49	-39.72	2,841.44	55.04	1.98	4.41
1980	108.29	-16.9	-13.50	2,836.67	-4.77	0.17	3.82

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 215, Table C-21.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 250, Table C-21.

By 1976, overfishing in the region caused stock reductions. The International Council for North Atlantic Fisheries (ICNAF) was forced to reduce established quotas by 22 percent.[64] At the same time, Canada closed her Atlantic ports to Soviet vessels until the Soviets promised to reduce their catches off Canadian shores. These two events caused a 27 percent decrease in the Soviet catch. It is quite interesting to note that the regional catch decreased only ten percent in spite of the ICNAF quota reduction.

In 1977, both Canada and the United States declared EEZ's or USFCZ of their own.[65] Both nations immediately set low quotas for the Soviet fleet. These events reduced the Soviet catch total by 49 percent. In fact, the regional catch loss can be attributed completely to the Soviet Union. With their catch excluded, the regional showed a 15,000 metric ton increase. It was obvious that the Soviets' days in the Northwest Atlantic were numbered.

The decline continued as the quotas were reduced from year to year. The eventual goal was to reduce all foreign fishing within the respective EEZ's. By 1978, the Soviets' catch in the USFCZ had been reduced to only 17,952 metric tons.[66] This catch was valued at $1,837,237.[67] By 1980, the Soviet allocations in the USFCZ had reached zero. Their entire catch amounted to only 108,290 metric tons which amounted to only 3.8 percent of the regional catch (see Table 7).

The Northwest Atlantic can be expected to play only a minor role in the future of the Soviet fisheries. The declines

will most likely taper off to a level where there is a constant Soviet presence but probably nothing more.

West Central Atlantic.

The West Central Atlantic has never really contributed much to the Soviet economy. Their greatest year was 1972 when 73,800 metric tons were caught (see Table 8). This made up only five percent of the regional total. After 1976, the Soviets left the area and have not returned. It is highly likely that the creation of the USFCZ and the expansion of the Cuban fishing fleet have driven the Soviets out of the area.

East Central Atlantic.

As the Soviet Union expanded her area of operations, she moved down to the East Central Atlantic. This area has traditionally been fished only by the native fishermen from the adjacent coastal States. Major Soviet growth in the area occurred during the 1967-1969 time frame (see Table 9). In 1969, the Soviets accounted for over 27 percent of the region's total fisheries. In only nine years, the region went from only three percent of the Soviet catch to over eleven percent by 1973.[68] This region had become the fourth most important fishing region to the Soviets.

The Soviets continued their expansion into the area. The Soviets, in attempts to solidify their position in the region, signed a number of bilateral treaties with many of the region's coastal states. The Soviets provided a great deal of technical

TABLE 8

SOVIET AND WORLD CATCH FOR THE WEST CENTRAL ATLANTIC (31) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	12.6[1]	---	---	1,550.0[1]	---	---	0.81
1965	17.3	4.7	37.30	1,610.0	60.0	3.87	1.07
1966	37.4	20.1	116.18	1,270.0	-340.0	-21.12	2.94
1967	23.9	-13.5	-36.1	1,280.0	10.0	0.79	1.87
1968	6.8	-17.1	-71.55	1,360.0	80.0	6.25	0.5
1969	4.8	-2.0	-29.41	1,450.0	90.0	6.61	0.33
1970	0	-4.8	-100.0	1,416.2	-33.8	-2.33	0
1971	11.2[2]	11.2	---	1,627.0[2]	210.8	14.88	0.69
1972	73.8	62.6	558.93	1,483.5	-143.5	-8.82	4.97
1973	8.9	-64.9	-87.94	1,390.0	-93.5	-6.30	0.64
1974	25.6	16.7	187.64	1,536.64	146.64	10.55	1.67
1975	69.05	43.45	169.73	1,547.3	10.66	0.69	4.46
1976	23.83	-45.22	-65.49	1,574.52	27.22	1.76	1.51
1977	0	-23.83	100.0	1,419.02	-155.5	-9.8	0
1978	0	---	---	1,852.87	433.85	30.57	0
1979	0	---	---	1,780.94	-71.93	-3.88	0
1980	0	---	---	1,790.51	9.57	0.54	0

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 224, Table C-31.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 256, Table C-31.

TABLE 9

SOVIET AND WORLD CATCH FOR THE EAST CENTRAL ATLANTIC (34) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	163.8[1]	---	---	1,104.0[1]	---	---	14.84
1965	82.4	-81.4	-49.69	1,200.0	96.0	8.69	6.87
1966	79.3	-3.1	-3.76	1,360.0	166.0	13.83	5.81
1967	153.5	74.2	93.57	1,530.0	164.0	12.01	10.03
1968	318.6	165.1	107.56	1,690.0	160.0	10.46	18.85
1969	569.7	251.1	78.81	2,070.0	380.0	22.49	27.52
1970	612.5	42.8	7.51	2,471.5	401.5	19.40	24.78
1971	789.8[2]	177.3	28.94	2,899.1[2]	427.6	17.30	27.24
1972	848.8	59.0	7.47	3,156.8	257.7	8.89	26.89
1973	942.7	93.9	11.06	3,365.5	208.7	6.61	28.01
1974	1,145.0	202.3	21.46	3,523.15	157.65	4.48	32.50
1975	1,165.74	20.74	1.81	3,534.12	10.97	0.31	32.99
1976	1,315.43	149.69	12.84	3,617.38	83.26	2.36	36.36
1977	1,134.43	-181.0	-13.76	3,796.28	178.9	4.95	29.88
1978	769.5	-364.93	-32.17	3,268.59	-527.69	-13.90	23.54
1979	526.01	-243.49	31.64	2,823.35	-445.24	-13.62	18.63
1980	942.33	416.32	79.15	3,463.72	640.37	22.68	27.21

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 227, Table C-34.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 259, Table C-34.

and financial assistance to the fisheries in the area. This led to a peak year in 1976 for the Soviet fisheries (see Table 4).

Overfishing started to rear its ugly head in 1977. The Soviet catch showed a 13.76 percent reduction that year. However, the region as a whole peaked for the total catch that year. The Soviet position had already started to deteriorate in the region. A number of treaties were revoked. The Soviets were completely excluded from Mauritania's coastal waters.[69] The Soviet catch dropped 41 percent over the next two years. Many of the nations started expressing desire to protect their coastal fisheries. Nineteen hundred and seventy nine saw the region record its lowest catch since 1970.

The Soviets renewed their efforts in the region by increasing their presence in 1980. In a move to counter this effort, the West African nations adopted a 200 EEZ.[70] Soviet access to many ports in the region was terminated. The large depot at Fernando Po was closed to Soviet vessels as were coastal waters of Equatorial Guinea.[71] This agreement had been in effect since 1964.

The Soviet presence in the region had become unwelcome. Without access to the coastal waters or ports of any of the coastal states, it's quite unlikely that this region will play a significant role in the future.

Southeast Atlantic.

The Southeast Atlantic was originally treated much as the East Central region. The presence of South Africa has always

been a thorn in the Soviets' side. The catch during the late 1960's and early 1970's remained fairly stable (see Table 10).

The expansion in the East Central region was parallel in the Southeast Atlantic. Treaties with Angola in 1976 and 1977 did much to spur the Soviet efforts. The Angolan fishing industry had practically collapsed by 1976. In only four years, their catch had undergone a 69 percent reduction.[72] The Soviets agreed to equip and train the Angolan fishermen. Twelve percent of the Soviet catch would be supplied to Angola in return for Soviet fishing within the coastal waters of Angola.[73] By the end of 1978, the Southeast Atlantic had become the fourth largest region in terms of Soviet catch.

The following year, the Union of South Africa declared a 200 mile EEZ.[74] The resultant Soviet catch underwent a 43 percent reduction in one year alone. In spite of this, the Soviets still accounted for over one-third of the total regional catch (see Table 10).

Political instabilities within the region continued to take their toll on the regional fisheries. The 1980 catch totals for the region continued their declining trend for the sixth time in seven years (a 13.71 percent decrease for 1980).

Soviet relations with Angola guarantee their presence in the region. A recent treaty (1982) guaranteed Soviet assistance to Angola's fishing fleet in return for continued permits to fish Angolan waters.[75] This treaty is to remain in effect for ten years.

TABLE 10

SOVIET AND WORLD CATCH FOR THE SOUTHEAST ATLANTIC (47) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	166.8[1]	---	---	1,890.0[1]	---	---	8.83
1965	360.7	193.9	116.25	2,180.0	290.0	15.34	16.55
1966	361.2	0.5	0.14	2,310.0	130.0	5.96	15.64
1967	251.0	-110.2	-30.51	2,640.0	330.0	14.29	9.51
1968	484.5	233.5	93.03	3,300.0	660.0	25.0	14.69
1969	407.2	-77.3	-15.95	3,090.0	-210.0	-6.36	13.18
1970	422.2	15.0	3.68	2,457.2	-632.8	-20.48	17.18
1971	438.6[2]	16.4	3.88	2,420.7[2]	-36.5	-1.49	18.12
1972	719.8	281.2	64.11	2,963.7	543.0	22.43	24.29
1973	648.6	-71.2	-9.89	3,114.8	151.1	5.10	20.82
1974	447.48	-201.12	-31.01	2,796.52	-318.28	-10.22	16.0
1975	420.73	-26.75	-5.98	2,525.26	-271.26	-9.7	16.66
1976	841.25	420.52	99.95	2,722.57	197.31	7.81	30.90
1977	1,047.23	205.98	24.48	2,721.65	-9.92	-0.03	38.48
1978	1,496.36	449.13	42.89	3,262.53	540.88	19.87	45.86
1979	850.66	-645.7	-43.15	2,518.95	-743.58	-22.79	33.77
1980	825.21	-25.45	-2.99	2,173.69	-345.26	-13.71	37.96

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 235, Table C-47.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 268, Table C-47.

Southwest Atlantic.

Without a doubt, this region has the most interesting history as far as the Soviets are concerned. The key to the region was the construction of a large modern fishing port in Cuba in 1965.[76] This opened the entire region logistically. Fisheries research vessels began to explore the local Patagonian shelf.

Research showed that the Patagonian shelf was an untapped resource. Soviet vessels began fishing the shelf in 1966 and caught over 73,000 tons of fish (see Table 11). The following year saw 200 fishing vessels appear off Argentine waters. This so enraged the Argentine government that they extended their territorial seas out to 200 miles.[77]

The Soviets were informed of the decrees but delayed in leaving. By the end of 1967, they had caught 677,700 tons of hake which accounted for 54 percent of the entire regional catch.

Finally in June 1968, the Argentine government had enough. An Argentine naval vessel ordered two large Soviet stern factory trawlers to standby for boarding and seizure. The Soviet vessels were attempting to outrun the naval vessel when a shell burst midships on one of the trawlers. Both vessels surrendered and were escorted into port.[78] After weeks of negotiations, both vessels were released and the fishing fleet left Argentine waters.

The Soviet fleet next showed up off Uruguay. Uruguay was aware of the Argentine problems and quickly declared their own

TABLE 11

SOVIET AND WORLD CATCH FOR THE SOUTHWEST ATLANTIC (41) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	---[1]	---	---	470.0[1]	---	---	0
1965	---	---	---	520.0	50.0	10.64	0
1966	73.3	73.3	100.0	640.0	120.0	23.08	11.45
1967	677.7	604.4	824.56	1,250.0	610.0	95.31	54.22
1968	189.8	-487.9	-71.99	810.0	-440.0	-35.2	23.43
1969	92.6	-97.2	-51.21	710.0	-100.0	-12.34	13.04
1970	9.7	-82.9	-89.52	663.9	-46.1	-6.49	1.46
1971	9.1[2]	-.06	-6.19	730.3[2]	66.4	10.00	1.25
1972	2.1	-7.0	-76.52	780.3	50.0	6.85	0.27
1973	5.7	3.6	171.43	920.7	140.4	17.99	0.62
1974	8.4	2.7	47.37	859.25	-61.45	-6.67	0.98
1975	8.68	0.28	3.33	820.36	-38.89	-4.53	1.06
1976	9.71	1.03	11.87	818.14	-2.22	-0.27	1.19
1977	27.94	18.23	187.74	1,039.66	221.52	27.08	2.69
1978	---	-27.94	100.0	1,281.23	241.57	23.24	0
1979	2.16	2.16	---	1,471.83	190.6	14.88	0.15
1980	27.7	25.54	1,182.41	1,320.38	-151.45	-10.29	2.10

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 233, Table C-41.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 265, Table C-41.

200 mile EEZ. The Soviets, having learned from earlier experiences, moved further north to Brazil. The Brazilians also quickly declared a 200 mile EEZ effectively closing the Russians out of the area. In only three years, the Soviets' catch went from 677,700 tons to only 9,700 tons (a 99 percent reduction).

The Soviets maintained only a token presence in the region for the next seven years. In 1977, six Soviet and two Bulgarian vessels appeared in Argentine waters. Another confrontation ensued as three Argentines drowned while boarding a trawler and a Bulgarian was killed by a shell explosion.[79] The Soviets agreed to accept an Argentine claim of a 200 mile EEZ but not a 200 mile territorial sea. Once again the Soviet catch for the region declined (see Table 11).

Finally, in 1980, the Soviet Union and Argentina signed a treaty authorizing joint research in the Argentine EEZ.[80] It is highly likely that the treaty could lead to joint ventures. The Argentines are said to desire the Soviet krill capture and processing techniques so the Soviets certainly have something to negotiate with concerning future fishing rights.

Northeast Pacific.

The Soviets expanded into this region as early as 1958 (Alaska). By 1966, they had moved southward into the waters of the Pacific Northwest. The catch was remaining fairly constant at about 500,000 tons (see Table 12). However, the Soviets were rapidly expanding their fleet off Washington and Oregon in

TABLE 12

SOVIET AND WORLD CATCH IN THE NORTHEAST PACIFIC (67) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	517.5[1]	---	---	1,180.0[1]	---	---	43.86
1965	476.1	-41.4	-8.0	1,110.0	-70.0	-5.93	42.89
1966	543.6	67.5	14.18	1,210.0	100.0	9.01	44.93
1967	569.1	25.5	4.69	1,040.0	-170.0	-14.05	54.72
1968	434.3	-134.8	-23.69	910.0	-130.0	-12.5	47.73
1969	642.8	208.5	48.01	1,030.0	120.0	13.19	62.41
1970	739.5	96.7	15.04	2,643.5	1,613.5	156.65	27.97
1971	656.0[2]	-83.5	-11.29	2,307.1[2]	-336.4	-12.73	28.43
1972	869.2	213.2	32.5	2,774.5	467.4	20.26	31.33
1973	379.8	-489.4	-56.3	1,901.7	-872.8	-31.46	19.97
1974	697.7	317.9	83.7	2,332.58	430.88	22.66	29.91
1975	572.6	-125.1	-17.93	2,245.75	-86.83	-3.72	25.5
1976	496.70	-75.9	-13.26	2,416.24	170.49	7.59	20.56
1977	185.12	-311.58	-62.73	1,764.48	-651.76	-26.97	10.49
1978	248.83	63.71	34.42	1,875.58	111.1	6.3	13.27
1979	210.26	-38.57	-15.5	1,974.07	98.49	-5.25	10.65
1980	59.21	-151.05	-71.84	1,954.15	-19.92	-1.0	3.03

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 250, Table C-67.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 281, Table C-67.

efforts to utilize the large hake stocks. They began to crowd out American fishermen in pursuit of rockfish.

The United States reacted quickly to extend the U.S. fisheries jurisdiction nine miles. This was to the surprise and chagrin of the Soviet Fisheries Ministry.

This did not deter the Soviets from fishing the region. By 1976, the alewife, Pacific ocean perch, and Pacific halibut were all suffering from overfishing.[81] This kept the Soviet catch at a constant level but damaged the American and Canadian fishermen.

To protect coastal stocks and the Canadian and American fishermen, Canada declared a 200 mile EEZ and the United States a fishery conservation zone (FCZ) in 1976.[82] Both nations quickly set Soviet quotas for the 1977 year. They planned to phase out Soviet fishing in the region as soon as feasible. By 1980, the Soviet catch had plummeted to only 59,210 tons (mostly from the American zone).

During 1980, the Soviets were closed out of the USFCZ. In response to the Soviet invasion of Afghanistan, President Carter reacted to place political pressure on the Soviet Union. In his State of the Union Address, he stated, "I will not issue any permits for Soviet ships to fish in U.S. waters."[83] In only three years, the value of the Soviet catch in the USFCZ went from $157 million to zero. This certainly was a blow to the Soviet fishing industry as well as the economy. Perhaps the biggest enemy of the Soviet fishing industry is the Presidium in Moscow.

This blow effectively removed the Soviets from the region. Although many embargoes were lifted in 1982, the fishing ban was not and will most likely remain in place for some time.[84] As long as the ban is in effect, the Soviets will never be able to return to the region in any significant numbers.

Northwest Pacific.

The Northwest Pacific has become the most important region fished by the Soviets today. This has not always been the case however. In the early 1800's the primary resource of interest in the region was fur. Fish simply supplied subsistence for the explorers and settlers. The Russians and Americans were both competing for these same resources. This led to a Soviet/American treaty in 1824 which stated "that the Northern Pacific should be open to citizens of both nations for fishing, trading and navigation."[85] The Russians abrogated the treaty in 1834 because American traders insisted on selling alcohol to the natives.[86]

By 1848, American whalers started whaling the Chukchi Sea. This continued until the whales were driven to extinction in the area. At the same time, American fishermen started fishing the Sea of Okhotsk for cod. A joint venture was started a short time later to provide additional income for the Russian economy. Although the joint venture dissolved a short time later because of a lack of storage facilities, the American cod fishery was to remain important through 1880.[87]

The Japanese have fished for salmon on the Kamchatka Peninsula for centuries. By 1868, the Japanese had developed

extensive fisheries in the Soviet Far East. Russia officially acquired the territory in 1875 and quickly signed a treaty allowing the construction of Japanese shore processing plants.[88] This treaty remained in effect until World War II.

The Soviet presence in the region really expanded during World War II. The non-aggression treaty with Japan gave the Soviets a relatively safe area to catch fish. As discussed earlier, this fish was used to supply the Red Army in their war against Germany.[89]

The expansion had been fairly constant until 1972 when there was a drop in the catch of 8.19 percent (see Table 13). The following year more than made up for this decline as the fishery research vessels discovered the untapped resources of the Alaskan pollack. The catch skyrocketed over 55 percent in one year.

The catch continued to increase until 1980 when there was a slight drop (2.2 percent). There is reason to believe that the region had reached its limit. Many observers felt that the huge pollack stock had reached its MSY.[90] If the stocks have reached their MSY, then it is highly likely that overfishing will occur in this highly competitive region and the regional catch will eventually fall.

In spite of such a large catch, the Soviets still account for only seventeen percent of the regional catch. A number of other nations also rely heavily on this region for fishery products. With the removal of the EEZ's from the traditional high seas, the competition in this region will become even

TABLE 13

SOVIET AND WORLD CATCH IN THE NORTHWEST PACIFIC (61) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	922.8[1]	---	---	11,470.0[1]	---	---	8.05
1965	1,114.6	191.8	20.78	12,200.0	730.0	6.36	9.14
1966	1,091.6	-23.0	-2.06	12,520.0	320.0	2.62	8.72
1967	1,204.2	112.6	10.32	13,370.0	850.0	6.79	9.01
1968	1,302.2	98.0	8.14	14,420.0	1,050.0	7.85	9.03
1969	1,394.0	91.8	7.05	14,490.0	70.0	.49	9.62
1970	1,447.6	53.6	3.85	12,103.4	-2,386.6	-16.47	11.96
1971	1,562.1[2]	114.5	7.91	13,551.5[2]	11,448.1	11.96	11.53
1972	1,434.2	-127.9	-8.19	14,296.3	744.8	5.5	10.03
1973	2,232.9	798.7	55.69	16,181.1	1,884.8	13.18	13.8
1974	2,361.7	128.8	5.79	16,602.54	421.44	2.60	14.22
1975	2,719.04	357.361	15.13	17,253.49	650.95	3.92	15.76
1976	2,751.71	32.65	1.2	17,558.13	304.64	1.77	15.67
1977	2,942.8	191.09	6.94	18,197.55	639.42	3.64	16.17
1978	3,003.22	60.42	2.05	18,439.52	241.97	1.33	16.29
1979	3,267.55	264.33	8.8	18,317.08	-122.44	-0.66	17.84
1980	3,195.75	-71.8	-2.2	18,776.22	459.14	2.51	17.02

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 248, Table C-61.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 279, Table C-61.

greater. The region today accounts for over 25 percent of the total world catch![91]

Central Pacific.

The Soviets have never really utilized the resources of the Central Pacific. The largest catch occurred in 1973 when the Soviet fleet expanded to the California coast (see Table 14). This accounted for eleven percent of the regional catch. The Soviet presence in the region became only token after 1975. The West Central Pacific has played even a lesser role in the Soviet eyes. They started fishing the region in 1979 and caught only 8,800 tons which accounted for only 0.15 percent of the regional catch. It is highly unlikely that the region will grow in significance for the Soviets in the near future.

Southeast Pacific.

The expansion into the Southeast Pacific has only happened in the last decade. The Soviets pretty much avoided this area because of the extended territorial seas. However, the Soviets did sign a minor treaty with Allende-led Chile in 1972 allowing them access to Chile's territorial sea in return for fisheries assistance.[92] By the end of 1973, the Soviets had caught 39,000 tons for one percent of the regional catch (see Table 15). The fall of Allende led to an abrogation of the treaty and an end to the Soviet fishing in the region for four years.

The Soviets returned to the region in 1977 when they agreed to assist Peru in the construction of the Paita fishing complex.[93] In return for the capital investment and the

TABLE 14

SOVIET AND WORLD CATCH IN THE CENTRAL PACIFIC FOR THE YEARS 1968-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
WEST CENTRAL PACIFIC							
1979	8.81[2]	---	---	5,687.75[2]	---	---	0.15
1980	3.59	-5.22	-59.25	5,698.98	11.23	0.20	0.06
EAST CENTRAL PACIFIC							
1968	52.81[1]	---	---	800.0[1]	---	---	6.60
1969	25.4	-27.41	-51.90	760.0	-40.0	-5.0	3.34
1970	20.2	-5.2	-20.47	867.4	107.4	14.13	2.33
1971	1.9[2]	-18.3	-90.59	874.8[2]	7.4	0.85	0.22
1972	12.9	11.0	578.95	935.4	60.6	6.93	1.38
1973	138.1	125.2	970.54	1,222.9	287.5	30.74	11.29
1974	22.2	-115.9	-83.92	1,034.39	-188.51	-15.41	2.15
1975	30.62	8.42	37.93	1,279.32	244.93	23.68	2.39
1976	---	30.62	-100.0	1,518.58	239.26	18.70	0
1977	---	---	---	1,724.65	206.07	13.57	0
1978	.026	.026	---	1,811.87	87.22	5.06	.001
1979	.1	.074	204.62	2,021.93	210.06	11.59	.005
1980	---	.1	-100.0	2,426.81	404.88	20.02	0

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 256, Table C-67.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 287, Table C-67.

TABLE 15

SOVIET AND WORLD CATCH IN THE SOUTHEAST PACIFIC (87) FOR THE YEARS 1970-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1970	---	---	---	13,746.5	---	---	---
1971	---	---	---	12,021.2	-1,725.3	-12.55	---
1972	35.1	35.1	---	5,563.0	-6,458.2	53.723	0.63
1973	39.2	4.1	11.68	3,047.9	-2,515.1	-45.21	1.28
1974	---	-39.2	-100.0	5,302.06	2,254.16	73.96	0
1975	---	---	---	4,380.7	-921.36	-17.38	0
1976	---	---	---	5,779.89	1,399.19	31.94	0
1977	---	---	---	3,936.57	-1,843.32	-31.89	0
1978	54.02	54.02	---	5,474.26	1,537.69	39.06	0.99
1979	546.57	492.55	911.79	6,898.8	1,424.54	26.02	7.92
1980	552.35	5.78	1.06	6,224.19	-674.61	-9.78	8.87

Sources: United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 291, Table C-87.

technical assistance, the Soviets were allowed to take on provisions and fuel in Peruvian ports. They were not allowed to fish Peruvian waters however. It has proven to date to be very difficult to check Soviet trawlers to ensure that their haul was caught outside 200 miles.[94]

The impact of this treaty is quite evident. The Soviet catch rose from zero in 1977 to 552,350 tons by 1980 (see Table 15). How much of this catch is from the territorial seas is unknown but the Peruvian government to date has not lodged any formal complaints. This may change once the Paita complex is built and the Peruvians no longer need Soviet capital. Until this happens though, the Soviet fishing outlook for the Southeast Pacific certainly looks promising.

Southwest Pacific.

Like the Southeast Pacific, the Soviets waited until the 1970's to move into the region. This was part of their programmed expansion into the South Pacific. The catch starting in 1971 climbed steadily for the first few years (see Table 16). The decline in 1975 was pretty much paralleled by the regional catch and was most likely not the result of any political mechanisms. The bulk of the regional catch can be attributed to foreign fishermen.

The major state in the region, New Zealand, kept a watchful eye on the Soviets. During the early years, the Soviets made free use of the local ports in spite of numerous reported breaches of the 12-mile territorial sea. In 1976, New

TABLE 16

SOVIET AND WORLD CATCH IN THE SOUTHWEST PACIFIC (81) FOR THE YEARS 1970-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1970	---	---	---	190.0	---	---	0
1971	10.4	10.4	---	215.5	25.5	13.42	4.83
1972	53.7	43.3	416.35	263.8	48.3	22.41	20.36
1973	74.3	20.6	38.36	305.5	41.7	15.81	24.32
1974	88.8	14.5	19.52	340.8	35.3	11.55	26.06
1975	44.77	-44.03	-49.58	273.43	-67.37	-19.77	16.37
1976	78.02	33.25	74.29	356.34	82.91	30.32	21.89
1977	123.01	44.99	57.66	531.33	174.99	49.11	23.15
1978	72.16	-50.85	-41.34	354.25	-177.08	-33.33	20.37
1979	70.78	-1.38	-1.91	356.08	1.83	0.52	19.88
1980	69.63	-1.15	-1.62	369.92	13.84	3.89	18.82

Sources: United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 289, Table C-81.

Zealand imposed a port tax but its results were negligible as the Soviet and regional catch increased by 50 percent.

By 1977, there were 393 foreign vessels operating in New Zealand waters of which 52 were Soviet.[95] It was believed that these vessels were simply trying to get as many fish as possible before a 200 mile EEZ came into effect. When the EEZ went into effect, the Soviet catch and regional catch dropped 41 and 33 percent respectively. These could be directly attributed to the EEZ. Quotas were established for foreign fishermen but they were 70 percent lower than before the claim.[96] These quotas were being reduced annually while emphasis was being shifted to joint ventures. By 1980 the quotas for joint ventures exceeded those for foreign fishermen for the first time.

The Soviets shifted their emphasis in the region to joint ventures. The liberal joint venture quotas certainly were the driving factor. Today, nine Soviet trawlers are involved in joint ventures with an annual quota of 104,100 tons.[97] In spite of this generous quota, the Soviets were able to only utilize 31 percent of it.

The local populace has been quite upset with the use of joint ventures in New Zealand waters. They pressured the government to concede that all of the joint venture vessels will be eventually replaced by local vessels.[98] It is easy to see that the Soviet presence in the area will certainly be short-term only.

Indian Ocean.

In the early 1960's, the Soviet Union decided to expand its operations to the Indian Ocean. Prior to this, the Soviets had done no fishing in the Indian Ocean. The catch slowly expanded to a high of 76,000 tons by 1966.[99] However, the following year, the Arab-Israeli war closed the Suez Canal setting back the Soviet plans for the region.

The catch for the next eight years fluctuated between 12,000-34,000 tons. There seemed to be no set pattern to these fluctuations. However, in the middle of 1975, the Suez Canal reopened, increasing Soviet interest once again. The Soviet catch for the following year showed an 81 percent increase but they still only accounted for 0.66 percent of the regional catch (see Table 17). The Soviet effort in 1977 was just picking up momentum when India and Sri Lanka both declared 200 mile EEZ's.[100] Although the catch reached 78,600 tons in 1977, it quickly dropped back down to 26,000 tons in 1978. Once again, Soviet efforts were thwarted by 200 mile EEZ declarations.

There was a slight upturn in 1980 as the catch climbed back up to 37,280 tons. The Soviets had negotiated with South Yemen to provide fish for the Yemeni market. The Soviets were also going to participate in the development of both a fishing port and a fisheries training center in Aden. The training center already has 265 graduates with another 124 students attending institutions in the Soviet Union itself.[101]

TABLE 17

SOVIET AND WORLD CATCH FOR THE INDIAN OCEAN FOR THE YEARS 1970-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1970	25.4	---	---	2,513.7	---	---	1.01
1971	12.9	-12.5	-49.21	2,630.2	116.5	4.63	0.49
1972	16.2	3.3	25.58	2,500.6	-129.59	-4.93	0.65
1973	31.6	15.4	95.06	2,829.0	328.4	13.13	1.12
1974	34.2	2.6	8.23	3,153.21	324.21	11.46	1.08
1975	12.1	-22.1	-64.62	3,175.96	22.75	.72	0.38
1976	21.97	9.87	81.57	3,298.98	123.02	3.87	0.66
1977	78.62	56.65	257.35	3,668.68	369.7	11.21	2.14
1978	26.02	-52.6	-66.9	3,500.23	-108.45	-2.96	0.73
1979	11.86	-14.16	-54.42	3,568.52	8.29	.23	0.33
1980	37.28	25.42	214.33	3,592.85	24.3	.68	1.04

Sources: United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 272, Table C-51.

It is highly unlikely that the Soviets will develop a large Indian Ocean fisheries in the near future. The regional desire to keep both the United States and the Soviet Union out of the region precludes any large acceptance of a Soviet fishing fleet in the region.

Anarctic.

The Anarctic region certainly holds some promise for the future. Since the mid-70's, there has been a continued expansion into the region. What started as strictly a Soviet region has now seen other nations fish as well. The regional catch peaked in 1980 with 529,210 tons (see Table 18).

The two major resources, the Antarctic icefish and the Antarctic krill, have accounted for over 80 percent of the catch.[102] On many occasions, the large quantity of Anarctic krill has been discussed but there have been problems concerning just how to utilize this resource. Until that problem is rectified, the region's fisheries will be somewhat hampered.

However, in 1980, fifteen countries signed the Antarctic Pact.[103] This pact was designed to safeguard the marine resources from overfishing as well as discover alternative uses. In all likelihood, this region will never be developed to be on par with either the North Atlantic or Pacific fisheries.

Mediterranean and Black Seas.

Looking at Table 19, the first thing that leaps out is the relatively stable catch totals over the last sixteen years.

TABLE 18

SOVIET AND WORLD CATCH FOR THE ANTARCTIC FOR THE YEARS 1970-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1970	431.9	---	---	432.0	---	---	99.98
1971	246.6	-185.3	-42.9	247.1	-184.9	-42.8	99.8
1972	115.3	-131.3	-53.24	10.3	-131.8	-53.34	100.0
1973	13.5	-101.8	-882.9	13.5	-101.8	-88.29	100.0
1974	127.8	114.3	846.67	128.44	128.44	851.41	99.50
1975	64.2	-63.6	-49.76	65.28	-63.16	-49.17	98.35
1976	60.75	-3.45	-5.4	63.65	-1.625	2.49	95.44
1977	359.51	298.76	4.92	387.88	324.23	509.39	92.69
1978	289.07	-70.44	-19.59	401.48	13.6	3.51	72.00
1979	438.43	149.36	51.67	520.56	119.08	29.66	84.22
1980	463.06	24.63	5.62	529.21	8.65	1.66	87.50

Sources: United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 276-282, Table C-58.

TABLE 19

SOVIET AND WORLD CATCH FOR THE MEDITERRANEAN AND BLACK SEAS (37)
FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.	World Catch	Inc. of 1,000 MT	% of Inc.	USSR % of World Catch
1964	239.6[1]	---	---	960.0[1]	---	---	24.96
1965	251.8	12.2	5.09	990.0	.30	3.125	25.43
1966	307.7	55.9	22.2	1,030.0	40.0	4.04	29.87
1967	300.6	-7.1	-2.31	1,110.0	80.0	7.77	27.08
1968	284.8	-15.8	-5.26	1,030.0	-80.0	-7.21	27.65
1969	138.7	-146.1	-51.3	970.0	-60.0	-5.82	14.30
1970	302.5	163.8	118.10	1,147.3	177.3	18.28	26.37
1971	263.8[2]	-38.7	-12.79	1,108.8[2]	-38.5	-3.36	23.79
1972	283.7	19.9	7.54	1,161.1	52.3	4.72	24.43
1973	285.9	2.2	0.76	1,153.0	-8.1	-0.70	24.80
1974	371.5	85.6	29.94	1,369.94	216.94	18.81	27.12
1975	349.76	-21.74	-5.85	1,294.07	-75.87	-5.54	27.03
1976	369.25	19.49	5.57	1,310.65	16.58	1.28	28.17
1977	244.1	-125.15	-33.89	1,145.32	-154.33	-12.61	21.31
1978	282.01	37.91	15.53	1,231.48	86.16	7.52	22.90
1979	315.93	33.92	12.03	1,316.09	84.61	6.87	24.01
1980	397.21	81.28	25.73	1,647.46	331.37	25.18	24.11

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 230, Table C-37.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 262, Table C-37.

There have been fluctuations during the period but there is no real upward or downward trend. In all likelihood, the seas have both reached their MSY. There should not be any large increases in the foreseeable future. If there is, a following major drop will likely occur as the result of overfishing.

A number of countries fish these waters and have done so for centuries. These waters are probably the longest fished waters in the world. Their percentage of the world catch has been declining gradually over the last few centuries.

The Soviets presently account for 25 percent of the regional catch as they did sixteen years ago. Since the region is most likely at its capacity already, the Soviet catch or percentage of the regional catch is unlikely to change.

Inland Waters.

Although the inland waters are not affected by the treaty, they are a major part of the Soviet response to it. The maximum efficiency and utilization of these resources can reduce the effects significantly.

By looking at Table 20, one is led to the misconception that the region is producing at its capacity. However, the inland waterways suffer from a number of major problems. These problems will have to be rectified.

Pollution has posed problems in the Soviet Union much like the rest of the world. Many major pollutants have been disposed of by rivers. These rivers have flowed into reservoirs and inland seas and lakes killing many fish, reducing reproduc-
tion and making the living organisms toxic.

TABLE 20

SOVIET CATCH IN INLAND WATERS (07) FOR THE YEARS 1964-1980

Year	USSR Catch	Inc. in 1,000 MT	% of Inc.
1964	726.5[1]	---	---
1965	826.4	99.9	13.75
1966	789.0	-37.4	-4.53
1967	816.0	27.0	3.42
1968	780.0	-36.0	-4.41
1969	746.5	-33.5	-4.29
1970	853.4	106.9	14.32
1971	935.4[2]	82.0	9.61
1972	870.0	-65.4	-6.99
1973	849.6	-20.4	-2.34
1974	772.9	-76.7	-9.03
1975	943.97	171.07	22.13
1976	770.31	-173.66	-18.4
1977	770.86	0.55	0.07
1978	730.44	-40.42	-5.24
1979	805.62	75.18	10.29
1980	747.37	-58.25	-7.23

Sources: [1]United Nations, Food and Agriculture Organization, 1970, Yearbook of Fishery Statistics: Catches and Landings, Vol. 30, 1971, pp. 215, Table C-07.
[2]United Nations, Food and Agriculture Organization, 1980, Yearbook of Fishery Statistics: Catches and Landings, Vol. 50, 1981, pp. 247, Table C-07.

Lower water levels in the inland seas have also been a major contributor. In the Aral Sea alone, a five-foot drop in depth raised the salinity eleven percent.[104] Many of the spawning grounds are now above water level, further compounding the problem. The Caspian Sea has similar problems and is declining as well. The drop in water level is being caused by the construction of reservoirs and the increase in irrigation upland from the seas. The Soviets have been increasing funds to determine how to stabilize the water level. This will be the key to future increases.

To give an idea of the size of the water resources being addressed, the Soviet Union has 117,800,000 acres of inland water.[105] This area is one sixth the size of the Mediterranean and Black Seas combined. However, the potential high productivity level that can be attained in these waters has increased their importance (200 Kg/m^3). This level is 1,500 times higher than normal.[106] It is easy to see how this can reduce the impact of the treaty.

CHAPTER V

SOVIET FUTURE

To say that the treaty is going to lower catches for the Soviets' high seas fishing fleet is a pretty safe guess. The real question is how much and what options do the Soviets have open to them.

Across the board, every declaration of a 200 mile EEZ has caused a significant reduction in the catch for that particular region. The host nation's catch usually showed an increase and the regional catch was dependent upon how much foreign fishermen were involved in the region. Over 90 percent of the world's utilized fishery resources come from coastal waters.[107] Figure 2 shows this fact quite dramatically.

The Soviet utilization of these coastal resources will be dependent upon their bilateral agreements with the various coastal states. Since the EEZ is now an international standard, the only way to access coastal waters will be through agreements. The Soviets have a number of agreements and treaties in effect. It is highly likely that this number will increase dramatically over the next few years.

The most likely regions to be exploited are the coasts of South America, Africa, and Indochina. It is highly unlikely that Soviet vessels will reappear in American or Canadian EEZ's in the foreseeable future. Europe will always see a Soviet presence but it will most likely be restricted to the Baltic, Mediterranean, and the Grey Zone areas. The presence

of Soviet vessels off the EEC States is likely to diminish considerably.

In dealing with the developing nations, the Soviets have a great deal to offer. They have the capital and the technological expertise to construct processing plants in the developing countries. This has already been done in a number of countries (South Yemen and Peru are just two examples).

The fishing fleet itself is undergoing modernization. They have a number of smaller, less efficient vessels that are being phased out. Although these vessels are no longer desired by the Soviet Ministry of Fisheries, they would be ideal for many of the developing countries. All of the extra onboard processing capabilities of the newer vessels would not be required on a small, coastal vessel. This would solve the problem of what to do with the old vessels, how to gain access to various EEZ's, and most importantly, how to further the communist philosophy. This would also increase these countries' dependence upon the Soviet Union as Soviet technicians would be needed to train the locals in vessel operation and maintenance. These countries would also be dependent upon the Soviets to provide parts to keep the vessels operational. This could provide a long-term relationship for the Soviet fishing fleet.

The bilateral agreements also hold the key to the other fisheries issues. As was discussed in Chapter II, many of the areas are subject to negotiations. The issues concerning the high seas fisheries, anadromous species, and highly migratory

species all are concerned with negotiations. The Soviets can be expected to be difficult negotiators in all of these areas as the status quo or no agreement is probably in the best interest of the Soviet fleet.

One change we are likely to see is that the Soviets might shift their emphasis as to what type of fish they catch. Since the highly migratory fish will most likely be exempt from the EEZ's, it would be beneficial for the Soviets to increase their catch of these fish. In 1979, only 6,992 tons of tuna was caught, certainly a very small number compared to the overall Soviet catch.[108] The Soviets, with such a large fleet, will demand that they be allowed to catch their "fair share." This certainly will be another bargaining chip for negotiations.

The high seas will certainly become more important as a fishery resource. It can be expected that it will account for more than ten percent of the total catch in the next few years. Without an agreement, all of the large fishing nations will be able to catch as much as possible. Any agreement would set quotas reducing any potential catch. It's quite likely that the negotiations here will not be in good faith by all of the parties concerned. The competition here will be much greater than we've seen in the past.

A possible alternative is an International High Seas Regulatory Agency run under United Nations auspices. This agency would attempt to manage the high seas fisheries with the world's well-being as the ultimate goal. Although ideally it sounds like a good idea, this would most likely turn out to be

an exercise in futility. These organizations are noted for their inefficiencies. Very seldom can any kind of consensus be established concerning worldwide goals. The nations not involved in high seas fisheries would most likely control and regulate the high seas fleets. The "Group of 77" is sure to use this to further their efforts for a New International Economic Order (NIEO).

The Soviets would join such a body only if they were in a position to gain from it, either economically or politically. If they could either control the agency or use it to gain a political advantage over the United States, they would become a member. Since the Soviets claim to be a proponent of the developing countries, they're sure to use this to heighten their standing.

The Soviets have made one step to counter the treaty's effects. They have increased their efforts concerning their inland and own coastal waters. Investments to develop ponds and reservoirs have increased over the last few years. Pollution problems have begun to be addressed although it will take years to undo the damage already done, provided it is reversible. The water level in the inland seas is being stabilized so that further degradations will not occur. It's possible that production in this area could reach 1,000,000 tons in a few years.

A final area of concern deals with the use of joint ventures. Although a part of negotiations, their significance warrants a separate discussion. The Soviets have a number of

joint ventures in progress with more likely in the near future. The two most notable joint ventures are with the United States and New Zealand.

With the revoking of all of the Soviet licenses to fish the USFCZ in 1980, Marine Resources Inc. became the largest bottom fish force on the U. S. Pacific Coast. In 1981, they were looking at a goal of 60,000 tons.[109] It is highly significant that this operation was not cancelled when the other licenses were revoked.

This joint venture pairs up American catchers with Soviet processors providing the Americans with an opportunity to have a worldwide market for the low-value bottom species. This provided a high-volume, economies-of-scale, quality product that could be competitively priced on the world market place.

The two companies involved--Cold Storage of Bellingham, Washington and Savrybflot--have formed a 50-50 partnership. The products are marketed in 14 countries with only ten percent being sold in the U.S., the Soviet Union, or other Eastern bloc countries. The company is trying to expand its quotas and catch for the future years. The long term future is uncertain as American policy is to eventually phase out all foreign fishermen.

The New Zealand joint venture is somewhat similar to the U.S.-Soviet one. there are nine trawlers involved with a quota of 104,100 tons for 1982.[110] In its initial year, 1980, the company exported $7.5 million of its fish products to

Australia, Italy, France and Greece.[111] This netted the company a profit in their first year of operation.

This company will probably not last too long in the foreseeable future. The local fishermen are extremely upset with joint ventures and have been placing a great deal of pressure on the government to revoke the licenses. The New Zealand government has bowed some as they promised that once the joint venture vessels can be replaced by local vessels, the joint venture will be terminated.

Although, in most cases, the joint ventures are considered temporary measures, the life expectancy is probably greater than most people anticipate. As long as the host country can benefit from joint ventures, they will remain in effect.

CHAPTER VI

SUMMARY

The ratification of the UNCLOS treaty has brought about a new era in the world's high seas fishing industry. No longer can they ply their trade off foreign shores with the only restriction being the capacity of the nets or the size of the hold. With over 90 percent of the utilized resources now under management schemes and political control, the high seas fleets will have to change their "modus operandi." The Soviets having the largest fleet with the poorest efficiency will probably have to make the greatest changes.

The World courts will certainly be kept busy for the foreseeable future. Too many items in the treaty are left open to interpretation. As an example, just the term "habitual" must be defined. There will be many claims covering the gamut of the fishing concern.

The Soviets will certainly be looking to protect their own interests. Large scale negotiations will be in progress to ensure the Soviets access to as many of the fishing grounds as possible. Joint ventures can be expected in a number of regions of the world. It is significant to note that even when the licenses of the Soviet trawlers were revoked in the USFCZ in 1980, the joint operation in progress was allowed to continue. There is a great likelihood that joint ventures and a more efficient inland and coastal fishery could be the foundation for future fisheries developments.

REFERENCE FOOTNOTES

1. Fishing News International, January 1977, p. 3.

2. Milan Kravanja, "The Soviet Fishing Industry: A Review," Foreign Fisheries Leaflet No. 77-2, p. 407.

3. Ibid., p. 407.

4. Ibid., p. 406-48=08.

5. Tony Loftas, "FAO's EEZ Programme," Marine Policy, July 1981, p. 233.

6. Lorry M. Nakatsu, "U.S./U.S.S.R. Cooperation in Fisheries," in U.S. Congress, Senate, Committee on Commerce and National Ocean Policy, Soviet Oceans Development, Committee Print, 94th Congress, 2d Sess., 1976, p. 464.

7. Tony Loftas, op. cit., p. 233.

8. Ibid., p. 232.

9. Parcival Copes, "The Impact of UNCLOS III on Management of the World's Fisheries," Marine Policy, July 1981, p. 217.

10. Ibid., p. 217.

11. Tony Loftas, op. cit., p. 233.

12. Fishing News International, January 1977, p. 3.

13. Tony Loftas, op. cit., p. 233.

14. Mark U. Janis and Donald C. F. Daniel, The USSR: Ocean Use and Ocean Law, Occasional Paper No. 21, Kingston: Law of the Sea Institute, University of Rhode Island, 1974, p. 13.

15. Ibid., p. 13.

16. Ibid., p. 16.

17. Ibid., p. 14.

18. Statement of the Soviet Delegation, A/CI/PV 1777 32 (1970) quoted in Mark W. Janis and Donald C. F. Daniel, ibid., p. 14.

19. Ibid., p. 15.

20. Ibid., p. 15.

21. Myron Nordquist and Kenneth R. Simmonds, New Directions in the Law of the Sea, 11 Vols., Dobbs Ferry: Ocean Pub. Inc., 1981, Vol. XI, p. 41.

22. Ibid., p. 41.

23. Sidney J. Holt and Lee M. Talbot, eds., The Conservation of Wild Living Resources, p. 31, cited in S. P. Balasubramanian "Fishery Provisions of the ICNT, Part 2," Marine Policy, January 1982, p. 27-28.

24. S. P. Balasubramanian, "Fishery Provisions of the ICNT, Part 2," Marine Policy, January 1982, p. 28.

25. Ibid., p. 32.

26. Myron Nordquist and Kenneth R. Simmonds, op. cit., p. 45.

27. S. P. Balasubramanian, op. cit., p. 35.

28. Ibid., p. 35.

29. Milan A. Kravanja, op. cit., p. 377.

30. O. A. Mathiesen and D. E. Bevan, Some International Aspects of Soviet Fisheries, Pamphlet Series of the Social Science Program of the Mershon Center for Education in National Security, Columbus: Ohio State University Press, 1968, p. 6.

31. Ibid., p. 7.

32. N. P. Sysoev, Economics of the Soviet Fishing Industry, translated by the Israel Program for Scientific Translations, Jerusalem: Keter Press, 1974, p. 16.

33. Ibid., p. 17.

34. Ibid., p. 20.

35. Ibid., p. 19.

36. Ibid., p. 20.

37. Ibid., p. 22.

38. Ibid., p. 23.

39. Based on totals from Table 3.

40. Ibid., p. 25.

41. Ibid., p. 25.

42. Ibid., p. 26.

43. Ibid., p. 28.

44. Ibid., p. 28.

45. Ibid., p. 28.

46. Milan A. Krivanja, op. cit., p. 413.

47. N. P. Sysoev, op. cit., p. 28.

48. Milan A. Krivanja, op. cit., p. 413.

49. S. V. Mikhailov, Okeanologiia (1962), p. 385-387, quoted in Milan A. Krivanja, op. cit., p. 450.

50. Milan A. Krivanja, op. cit., p. 413.

51. Milan A. Krivanja, op. cit., p. 413.

52. Lloyds Register of Shipping, Statistical Tables, 1980, London, 1980, p. 64-65.

53. Fishing News International, January 1977, p. 77.

54. Tony Loftas, op. cit., p. 233.

55. Fishing News International, February 1977, p. 6.

56. Fishing News International, July 1977, p. 54.

57. Fishing News International, October 1977, p. 21.

58. Fishing News International, June 1981, p. 43.

59. Fishing News International, February 1977, p. 6.

60. Ibid., p. 6.

61. Fishing News International, December 1981, p. 25.

62. Fishing News International, Aguust 1982, p. 3.

63. Facts on File, 1982, p. 92.

64. Milan A. Krivanja, op. cit., p. 92.

65. Tony Loftas, op. cit., p. 233.

66. U. S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Fisheries of the United States, 1980, Current Fishery Statistics No. 8100, p. 102.

67. Based on 1978 Catch Totals (see Ref 66) and the Estimated Values from Tony Loftas, op. cit., p. 230, Table 1.

68. Milan A. Krivanja, op. cit., p. 405.

69. World Fishing, November 1980, p. 5.

70. Ibid., p. 5.

71. Facts on File, 1980, p. 119.

72. Fishing News International, June 1977, p. 9.

73. Facts on File, 1982, p. 112.

74. Tony Loftas, op. cit., p. 233.

75. Facts on File, 1982, p. 112.

76. Milan A. Krivanja, op. cit., p. 407.

77. Ibid., p. 407.

78. Ibid., p. 407.

79. Fishing News International, November 1977, p. 12.

80. Fishing News International, June 1980, p. 38.

81. Milan A. Krivanja, op. cit., p. 380-381.

82. Tony Loftas, op. cit., p. 233.

83. President Carter's "State of the Union Address," 23 January 1980, in Facts on File, 1980, p. 41-42.

84. Facts on File, 1982, p. 290.

85. O. A. Mathiesen and D. E. Bevan, op. cit., p. 12.

86. Ibid., p. 12.

87. Ibid., p. 12.

88. N. P. Sysoev, op. cit., p. 18.

89. N. P. Sysoev, op. cit., p. 28.

90. Milan A. Krivanja, op. cit., p. 409.

91. United Nations, Food and Agriculture Organization, 1980 Yearbook of Fishery Statistics; Catches and Loadings, Vol. 50, 1981, p. 279, Table C-61.

92. Milan A. Krivanja, op. cit., p. 409.

93. Fishing News International, September 1977, p. 60.

94. Fishing News International, November 1981, p. 14.

95. Fishing News International, April 1977, p. 22.

96. Fishing News International, June 1982, p. 59.

97. Ibid., p. 59.

98. Ibid., p. 59.

99. Milan A. Krivanja, op. cit., p. 410.

100. Fishing News International, February 1977, p. 31.

101. World Fishing, April 1980, p. 7.

102. United Nations, op. cit., p. 276-282.

103. Facts on File, 1980, p. 398.

104. Jan J. Solecki, New Developments in the Soviet Union's Fishing Industry, Vol. 7, No. 1 MSRL Bulletin, St. Johns, Newfoundland: Memorial University of Newfoundland, 1973, p. 18.

105. Ibid., p. 13.

106. Ibid., p. 19.

107. S. P. Balasubramania, "Fishery Provisions of the ICNT," Marine Policy, October 1981, p. 318.

108. United Nations, op. cit., p. 382.

109. "American Joint Venture with Soviets Pays Off, World Fishing, September 1980, p. 10.

110. Fishing News International, June 1982, p. 59.

111. Fishing News International, July 1981, p. 6.

BIBLIOGRAPHY

Balasubramania, S. P. "Fishery Provisions of the ICNT, Part 1," Marine Policy, October 1981.

Balasubramania, S. P. "Fishery Provisions of the ICNT, Part 2," Marine Policy, January 1982.

Copes, Parzival. "The Impact of UNCLOS III on Management of the World's Fisheries," Marine Policy, July 1981.

Facts on File, Inc., Facts on File, 1980. New York, N.Y., 1981.

Facts on File, Inc., Facts on File, 1981. New York, N.Y., 1982.

Facts on File, Inc., Facts on File, 1982. New York, N.Y., 1983.

Fishing News International, Vol. 15, No. 1., January 1976.

Fishing News International, Vol. 15, No. 4., April 1976.

Fishing News International, Vol. 16, No. 1, January 1977.

Fishing News International, Vol. 16, No. 2, February 1977.

Fishing News International, Vol. 16, No. 4, April 1977.

Fishing News International, Vol. 16, No. 5, May 1977.

Fishing News International, Vol. 16, No. 6, June 1977.

Fishing News International, Vol. 16, No. 7, July 1977.

Fishing News International, Vol. 16, No. 8, August 1977.

Fishing News International, Vol. 16, No. 10, October 1977.

Fishing News International, Vol. 16, No. 11, November 1977.

Fishing News International, Vol. 19, No. 6, June 1980.

Fishing News International, Vol. 20, No. 6, June 1981.

Fishing News International, Vol. 20, No. 7, July 1981.

Fishing News International, Vol. 20, No. 10, October 1981.

Fishing News International, Vol. 20, No. 11, November 1981.

Fishing News International, Vol. 20, No. 12, December 1981.

Fishing News International, Vol. 21, No. 1, January 1982.

Fishing News International, Vol. 21, No. 5, May 1982.

Fishing News International, Vol. 21, No. 6, June 1982.

Fishing News International, Vol. 21, No. 7, July 1982.

Fishing News International, Vol. 21, No. 8, August 1982.

Fishing News International, Vol. 21, No. 12, December 1982.

Floharty, David and Dawson, Christine. "Management of Living Resources in the Northeast Pacific and the Unilateral Extension of the 200-Mile Fisheries Zone," Ocean Development and International Law, Vol. 6, 1979.

French, Robert; Nelson, Russell Jr.; and Wall, Janet. "The Foreign Fisheries off Washington, Oregon, and California, 1977-78," Marine Fisheries Review, Vol. 43, No. 5, May 1981.

Gorin, Igor. "Rational and Necessary Measure," New Times, Vol. 52, 1976.

Greenway, Ambrose. Soviet Merchant Ships. White Plains, Sheridan House Inc., 1981.

Graywoczewski, Z.; Huelle, Z.; Szmid, S.; and Swiecicki, J. Modern Fishing Vessels, Translated by The Scientific Publications Foreign Cooperation Center of the Central Institute for Scientific, Technical and Economic Information. Warsaw, Poland, 1964.

Idyll, C. P. The Sea Against Hunger. New York: Thomas Y. Crowell Company, 1970.

Janis, M. W., and Daniel, D. C. F. "The USSR: Ocean Use and Ocean Law." Occasional Paper No. 21, Kingston: Law of the Sea Institute, University of Rhode Island, 1974.

Kaczynski, Vladimir. "Alternatives Facing Distant-Water Fishing States in the Northeast Pacific Ocean. Part I, Distant-Water Fisheries of the East European Countries: Their Present Ecnomic Status and Future Activities in the Northeast Pacific," Ocean Development and International Law, Vol. 6, 1979.

Lloyds Register of Shipping, Statistical Tables, 1980. London, 1980.

Loftas, Tony. "FAO's EEZ Programme," Marine Policy, July 1981.

Marriot, Alan. "The Value of fish Catches," Fishing News International, September 1977.

Mathiesen, O. A. and Bevan, D. E. Some International Aspects of Soviet Fisheries. Pamphlet Series of the Social Science Program of the Mershon Center for Education in National Security. Columbus: Ohio State University Press, 1968.

Nordquist, Myron and Simmonds, Kenneth R. New Directions in the Law of the Sea, 11 Vols. Dobbs Ferry: Oceana Pub. Inc., 1981, Vol. XI.

Pruter, A. T. "Soviet Fisheries for Bottomfish and Herring off the Pacific and Bering Sea Coasts of the United States," Marine Fisheries Review, Vol. 38, No. 12, December 1976.

Sealey, T. S. "Soviet Fisheries: A Review," Marine Fisheries Review, Vol. 36, No. 8, August 1974.

Solecki, Jan J. New Developments in the Soviet Union's Fishing Industry, Vol. 7, No. 1 MSRL Bulletin. St. John's, Newfoundland: Memorial University of Newfoundland, 1973.

Solecki, Jan. J. Fishing Industry of The COMECON Countries, Vol. 7, No. 6 MSRL Bulletin. St. John's, Newfoundland: Memorial University of Newfoundland, 1974.

Sulikowski, Terese. "Soviet Ocean Policy," Ocean Development and International Law, Vol. 3, No. 1, 1975.

Sysoev, N. P. Economics of the Soviet Fishing Industry. Translated by The Israel Program for Scientific Translations. Jerusalem: Keter Press, 1974.

U.S. Congress, House, Committee on Merchant Marine and Fisheries. Report on the Soviets and the Seas: Report of a Congressional Delegation to Poland and the Soviet Union. H. Report No. 1809, 89th Cong., 2d Sess., 1966.

U.S. Congress, Senate, Committee on Commerce and National Ocean Policy, Soviet Oceans Development, Committee Print, 94th Cong., 2d Sess., 1976.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration. National Marine Fisheries Service. Fisheries of the United States, 1976. Current Fishing Statistics No. 7200.

United Nations, Food and Agriculture Organization, Atlas of the Living Resources of the Seas. Rome, 1972.

United Nations, Food and Agriculture Organization, 1970 Yearbook of Fishing Statistics: Catches and Landings. Vol. 30, 1971.

United Nations, Food and Agriculture Organization, 1978 Yearbook of Fishery Statistics: Fishery Commodities. Vol. 47, 1979.

United Nations, Food and Agriculture Organization, 1979 Yearbook of Fishery Statistics: Catches and Landings. Vol. 48, 1980.

United Nations, Food and Agriculture Organization, 1979 Yearbook of Fishery Statistics: Catches and Landings. Vol. 50, 1981.

United Nations, Food and Agriculture Organization, 1979 Yearbook of Fishery Statistics: Catches and Landings. Vol. 51, 1981.

United Nations, Food and Agriculture Organization, Fishery Fleet Statistics: 1970-1978, FAO Fishery Circular, No. 731, 1981.

United Nations, Yearbook of International Trade Statistics, 1980. New York, N.Y., 1981.

Whitaker, Donald R. "World Utilization of Hake," Marine Fisheries Review, Vol. 42, No. 1, January 1980.

Working Group on Living Marine Resources of the Panel on the Law of the Sea of the American Society of International Law, Principles for a Global Fisheries Management Regime. Washington, D.C., 1974.

World Fishing. Vol. 29, No. 3, March 1980.

World Fishing. Vol. 29, No. 4, April 1980.

World Fishing. Vol. 29, No. 9, September 1980.

World Fishing. Vol. 29, No. 11, November 1980.

World Fishing. Vol. 30, No. 1, January/February 1981.

U.S. Department of Commerce. National Oceanic and Atmospheric Administration. National Marine Fisheries Service. Fisheries of the United States, 1980. Current Fishery Statistics No. 8100.