

The Cuban Grouper and Snapper Fishery in the Gulf of Mexico

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ABSTRACT—The history and development of the Cuban grouper and snapper fishing in the Gulf of Mexico are reviewed. Included is information concerning fishing grounds, catch composition, fishing fleet, and operations and catches. The implications of extended fisheries jurisdictions for Cuba are briefly discussed.

INTRODUCTION

This paper reviews the development of the Cuban grouper and snapper fishery in the Gulf of Mexico. Starting as a handline fishery from sailing vessels, the fishery developed into the present bottom longline operation. The activities of the Cuban State Flota del Golfo (Gulf Fleet) organized under Fidel Castro in 1963 are emphasized.

Very little information is available in U.S. publications concerning the Gulf Fleet. The information for this paper was compiled mainly from Cuban fishery publications and from unpublished reports by the National Marine Fisheries Service (NMFS) Law Enforcement and Marine Mammal Protection Division, Southeast Region.

HISTORY OF THE FISHERY

Cuban vessels of various types have fished waters off Mexico and Florida for mullet, groupers, snappers, and other fishes since Spanish colonial times (Martinez, 1948; Leal, 1971).

In 1850, sailing vessels known as "viveros"—fishing vessels with live-wells to hold and transport live catches—began fishing off Florida and Mexico. Groupers and other reef fishes were caught by handlines and placed in the live-wells. When the wells were filled, the viveros returned to Havana, Cuba, where the live catch was marketed (Anonymous, 1966).

In the ensuing years the fleet became informally known as the "Flota del

Alto" (Deep Water Fishing Fleet) and was affiliated with a cooperative established in 1946 and located on Havana Bay (Martinez, 1948; Buesa, 1964). Gradually, viveros were converted to "neveros"—vessels in which the catch is iced. In 1955, the Deep Water Fishing Fleet had 68 sailing vessels from 80 to over 100 feet (24.3-30.5 m) in length, many with auxiliary power (Suarez Caabro, 1957). In the late 1950's, about 40 of these vessels, averaging over 45 years of age, were still used for fishing. The entire Cuban fishing fleet consisted of 2,500-3,000 principally small nonmotorized coastal boats. In 1959 the Cuban government began to nationalize and organize this artisanal fishing industry. The main thrust was toward the development of Cuban coastal, nearby Caribbean, and Gulf of Mexico fisheries (Kravanja, 1972). A ship-building program began in 1961 to replace the existing fishing fleet with new, powered, wooden vessels of about 10 standard classes and designs (Abascal, 1966). In 1963, a centralized state fishing administration,

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the "Instituto Nacional de la Pesca, INP" (National Fishing Institute), was established to coordinate activities and modernize the industry. The INP finances, manages, and directs its fishing, seafood processing, distribution, marketing, seaport, and shipbuilding enterprises. It also fixes production goals, determines salaries, and establishes prices. Other widespread activities include political and social programs which include education, training, and housing for INP personnel.

THE CUBAN GULF FLEET

General

The Cuban Gulf Fleet was organized by the INP in 1963 and began operations in 1964. The Gulf Fleet size increased from 65 vessels in 1963 (Abascal, 1966) to about 140 vessels of various designs and sizes in 1967 (Young, 1971). Apparently, the fleet overexpanded and the desired level of proficiency still was not attained. As the INP fishing policy evolved, emphasis shifted from the Gulf Fleet to distant water, more productive or more valuable fisheries (Kravanja, 1972). After 1967, the Gulf Fleet size decreased (Fig. 1) when many of the older and smaller vessels were placed in Cuban coastal fleets, and 65 of the largest vessels were converted into shrimp trawlers (Chang, 1971). By

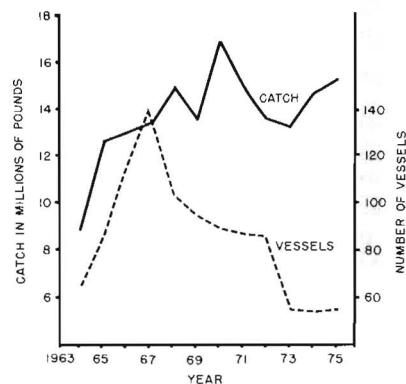


Figure 1.—The Cuban Gulf Fleet grouper and snapper catch and number of vessels, 1964-75. Sources: Compiled from *Mar y Pesca*, 1965-75; Carles Martin and Liubimova, 1967; Young 1971.

1975, the Gulf Fleet, though smaller, was an effective fishing force of 55 standardized vessels (Ubeda, 1975).

Grounds

The fishing grounds are on shelf areas off the west coast of Florida and off the north coast of the Yucatan Peninsula (Fig. 2). The Gulf Fleet fishes primarily in depths of 8-44 fm (15-81 m) (Carles Martín and Liubimova, 1967) favoring the shallower depths to 30 fm (55 m). Off Florida, the grounds extend from the Dry Tortugas to Cape San Blas and Cuban vessels usually fish 20-80 nautical miles (37-146 km) offshore (Fuss, 1972, and unpublished reports¹). Off Mexico, the grounds are from 12-100 nautical miles (22-185 km) offshore. The INP conducted a comprehensive resource, biology, and oceanography survey of the Campeche Shelf grounds. The published results appear in Instituto Nacional de la Pesca, Centro de Investigaciones Pesqueras — INP/CIP (1974, 1975).

Species Sought

The Cuban fishing effort is directed toward the “cherna americana” or red grouper (*Epinephelus morio*), which constitutes about 90 percent of the total catch (Abascal, 1968). The average size of a fish is about 10 pounds (4.5 kg), although fish over 17 pounds (7.7 kg) are sometimes caught. The remainder of the catch is composed mainly of other groupers, snappers, king and Spanish mackerels, grunts, sharks, and porgies (Table 1).

Gear

Although the traditional handline is still used to some degree, the “palangre de fondo,” bottom longline (Fig. 3) came into general use about 1965 and is the principal fishing gear (Cubillas, 1965). The bottom longline is 3,280-4,921 feet (1,000-1,500 m) in length, buoyed at each end and weighted in

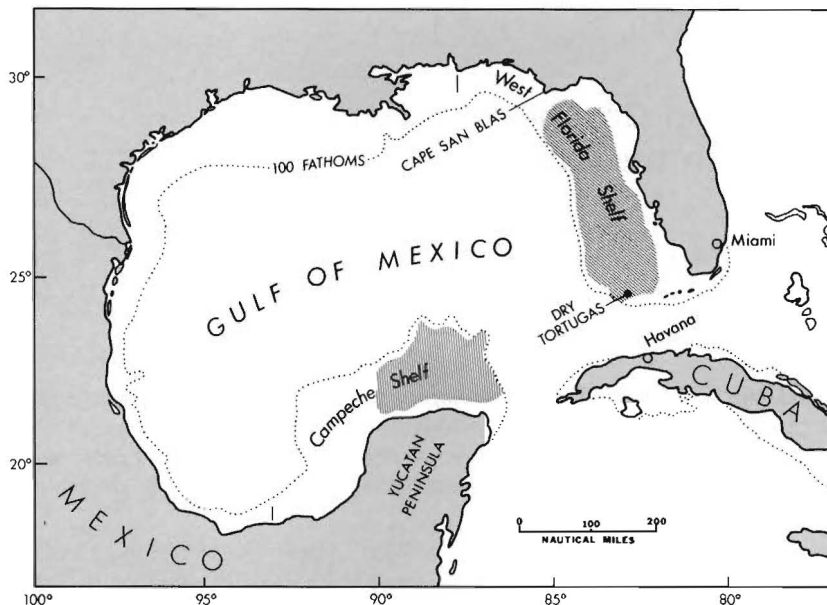


Figure 2.—The Cuban Gulf Fleet vessels have been observed within the shaded area off west Florida. The Campeche Shelf fishing area is also shaded. Sources: Law Enforcement and Marine Mammal Protection Division, NMFS, NOAA, St. Petersburg, FL 33702; Monthly Report of Foreign Fishing Activities off the Southern U.S. Coast (and other unpublished reports), 1972-76. Carles Martín and Liubimova, 1967; Zupanovic and González, 1975.

Table 1.—List of fishes commonly landed by the Cuban Gulf Fleet¹.

Scientific name ²	Common name ²	
	United States	Cuba
Squaliformes	Sharks	Tiburones
Serranidae		
<i>Epinephelus adscensionis</i>	Rock hind	Cabra mora
<i>E. itajara</i>	Jewfish	Guasa
<i>E. morio</i> ³	Red grouper	Cherna americana
<i>Mycteroperca bonaci</i>	Black grouper	Aguaji; Bonaci
<i>M. interstitialis</i>	Yellowmouth grouper	Abadejo
<i>Mycteroperca</i> spp. and <i>Epinephelus</i> spp.	Groupers	Chernas; Meros
Lutjanidae		
<i>Lutjanus analis</i>	Mutton snapper	Pargo criollo
<i>L. campechanus</i>	Red snapper	Pargo colorado; Guachinango
<i>L. griseus</i>	Gray snapper	Caballerote
<i>L. synagris</i>	Lane snapper	Biajaiba
<i>L. vivanus</i>	Silk Snapper	Pargo de lo alto
<i>Ocyurus chrysurus</i>	Yellowtail snapper	Rabirrubia
<i>Rhomboplites aurorubens</i>	Vermilion snapper	Cagon; Cotorro
<i>Lutjanus</i> spp.	Snappers	Pargos
Pomadasyidae		
<i>Haemulon aurolineatum</i>	Tomtate	Jeniguano
<i>Haemulon</i> spp.	Grunts	Roncos
Sparidae	Porgies	Bajonado; Pez de pluma
Scombridae		
<i>Scomberomorus cavalla</i>	King mackerel	Sierra
<i>S. maculatus</i>	Spanish mackerel	Serrucho
<i>S. regalis</i>	Cero	Pintada; Pintadilla

¹Only species identified in literature are included.

²Common and scientific names follow Bailey et al. (1970). Cuban common names are from *Mar y Pesca* and other sources.

³*Epinephelus morio* is the target species.

between to keep the longline near the bottom. As many as 250-300 branch lines, each with a baited hook, are

spaced about 10-20 feet (3-6 m) apart on the fishing portion of the longline. The bottom longline is set and retrieved

manually from a fiberglass launch (Sáez, 1973). Scaled sardines and shark and grouper entrails are often used as bait (Chang, 1971).

Vessels and Personnel

In recent years, the Gulf Fleet was composed mainly of "Lambdas," 75-foot (23-m) diesel-powered, wooden-hulled vessels, capable of speeds of about 10 knots (Fig. 4). The fish hold capacity is about 33 tons (30 t). Each Lambda has a complement of 11-20 men; there were 1,082 men in the Gulf Fleet in 1975 (Young, 1971; Ubeda, 1975). Most of the crew are trainees and students between 16 and 25 years of age. An important function of the Gulf Fleet is the training of fishermen, technicians, and officers for service in INP fishing enterprises (Young, 1971; Sáez, 1973).

Fishing and Fishing Operations

The operations of the Gulf Fleet are directed and coordinated by INP from "El Puerto Pesquero de La Habana" (The Fishing Port of Havana). The vessels are directed to fishing grounds on the Campeche Shelf or the West Florida Shelf and communications are maintained with the INP fishing headquarters during the trip.

Each Lambda serves as a mother vessel and usually has six 16-foot (5-m) fiberglass longlining launches on board. Upon arrival at the fishing grounds, the launches are placed in the water. The two-man crew makes an initial set of the bottom longline gear; thereafter, the longline remains in the water until the end of the fishing day. The launch progresses along the mainline while the crew retrieves the catch and simultaneously baits and resets the mainline, one hook at a time. The mainline is traversed in this manner usually from six to eight times per day. The catch is transferred to the Lambda when the crew returns for lunch and at the end of the fishing day (Arango, 1974). While the launches are fishing, the Lambda crew may scout for fishing areas or fish with handlines, but the vessel usually remains within 2 nautical

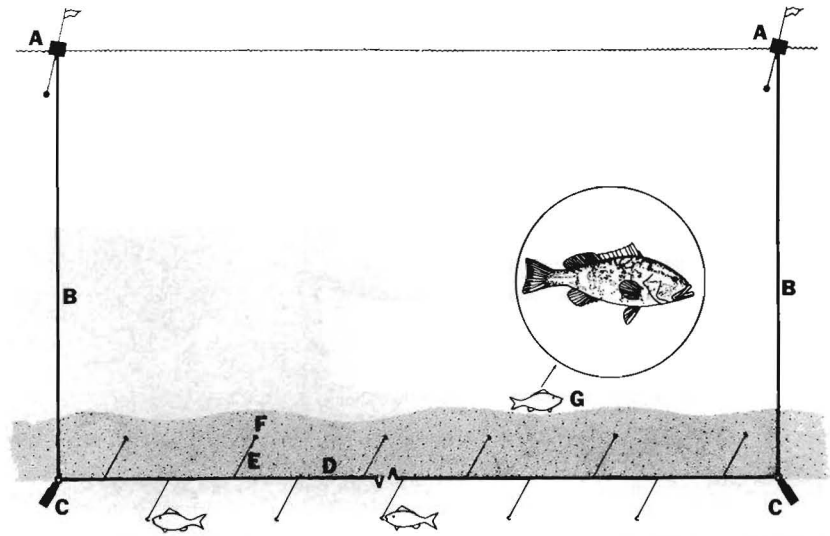


Figure 3.—Cuban Gulf Fleet: Diagram of a typical bottom longline for groupers and snappers. A. marker buoy, B. buoy line, C. drag weight, D. mainline, E. branch line, F. bait and hook, G. target fish, the red grouper. Sources: Law Enforcement and Marine Mammal Protection Division, NMFS, NOAA, St. Petersburg, FL. 33702; Sáez, 1973.



Figure 4.—The 75-foot (23-m) Lambda is the principal vessel used by the Cuban Gulf Fleet. Longlining launches can be seen stacked on the after deck. Photograph courtesy of the Law Enforcement and Marine Mammal Protection Division, NMFS, NOAA, St. Petersburg, FL. 33702.

miles (3.7 km) of the launches (Sáez, 1973). The launches are loaded aboard the mother vessel at the end of the day.

The fishing trip cycle is about 40 days: 10 days in port, 27 days fishing, and 3 days in transit (Instituto Nacional de la Pesca Cuba — INP, 1967). Each vessel averages nine trips annually; the fleet averages 450 vessel-trips (Chang, 1971).

Traditionally, Cuban vessels operated independently, but beginning about 1971, the Gulf Fleet was organized into 13 flotillas of from two to four Lambdas each. A vessel captain is selected as commander of each flotilla. Two operational systems are used by the flotillas: the "En compañía" (in company or group) and "Enviada" (envoy or transport).



The 75-foot (23-m) Lambda (above) is the principal vessel used by the Cuban Gulf Fleet. The FG on the stack stands for Flota del Golfo. At left is a 66-foot (20-m) Gulf Fleet vessel. Longlining launches can be seen stacked on the after deck of the 75-foot Lambda below. Photos are from the Law Enforcement and Marine Mammal Protection Division, Southeast Region, National Marine Fisheries Service, NOAA.



In the *compaña* system, a Lambda from a flotilla is designated to take the flotilla's catch to Cuba after the first half of the trip, while the remainder of the flotilla continues fishing. The catch is unloaded at the Fishing Port of Havana, then the vessel returns to the fishing grounds with supplies, ice, and

fuel, and resumes fishing. The flotilla returns to Cuba after 24-30 days at sea.

In the *enviada* system, specialized transport vessels go to fishing grounds and transship a flotilla's catch to port but do not engage in catching fish (Chang, 1971).

In the grouper-snapper fishery where

the resource is dispersed and fish are landed individually by manual labor, the catch per unit of effort is low in comparison to other fisheries where the resources are concentrated and harvested by nets.

Fishing efficiency has increased greatly, however, since the Gulf Fleet

began operations in 1964. Port and shipyard facilities were improved. The fleet was standardized from an assortment of vessels to the Lambda-class almost exclusively. All vessels have electronic fish-finding, navigation, and communication equipment. Each Lambda has a hydraulic crane for loading and unloading of the longline launches during fishing operations (Abascal, 1968). The new diesel-powered, fiberglass launches are lighter, more maneuverable, and have twice the payload capacity of the former wooden launches. The fishing power of the longlines was increased from 100 hooks (Abascal, 1966) to 250-300 hooks (Arango, 1974).

Effective fishing time was increased when vessels began fishing as organized flotillas with supply and transport vessels (Chang, 1971). Although valid catch comparisons cannot be made between vessels because of size, gear, and fishing effort variations, the catch-per-vessel-per-year increased from 96,000 to 277,000 pounds (44-126 t) from 1967-75 (Fig. 5).

The Gulf Fleet is experimenting to further increase efficiency by extending the duration of trips, rotating the fishermen from shore to vessels to shore, and mechanizing the longline operation (Ubada, 1975).

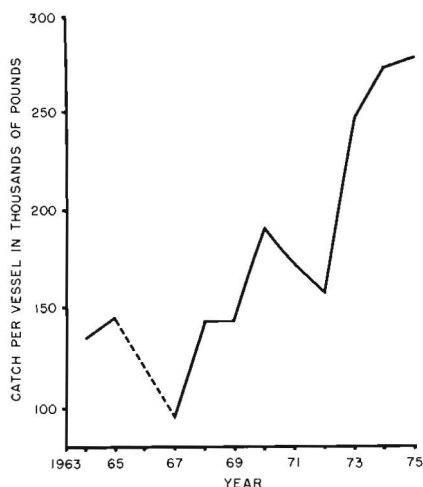


Figure 5.—The Cuban Gulf Fleet grouper and snapper catch per vessel, 1964-75. Sources: *Mar y Pesca*, 1965-75; Carles Martín and Liubimova, 1967; Young 1971, and Table 2.

CATCH INFORMATION

Catch information is not readily available to us. We have no access to data for the Deep Water Fishing Fleet during 1959-63. Catch information for the Gulf Fleet from 1964 to 1974 was compiled from various sources and often represents estimates based on seasonal catches, analysis of interviews with fishermen, and observations of fishing activities by NMFS.

The total Gulf Fleet catch increased from 8.8 million pounds (3,986 t) in 1964 to 15 million pounds (6,800 t) in 1968 (Table 2). The average annual catch from 1967 to 1975 was 14.5 million pounds (6,577 t), with a low of 13.3 million pounds (6,050 t) in 1973 and a high of 17 million pounds (7,700 t) in 1970. Catches for 1967, 1969, 1972, and 1973 were below the annual mean, but catches increased above the annual mean in 1974-75. At U.S. prices, the value of the 1975 catch of 15.3 million pounds (6,927 t) is 6.1 million dollars. The Campeche Shelf produces about 71 percent of the Gulf Fleet catch; the remainder is from the West Florida Shelf. From 1971 to 1975, the annual catch varied from 8.4 to 11.2 million pounds (3,800 to 5,073 t) for the Campeche Shelf and from 3.5 to 4.9 million pounds (1,597 to 2,214 t) for the West Florida Shelf.

Mexico and the United States also fish on the Campeche Shelf. Mexico generally fishes for groupers closer to shore than the United States or Cuba. In the Gulf of Mexico in 1972, for example, Mexico landed 38.8 million pounds (17,600 t) of groupers and snappers primarily from the Campeche Shelf (Food and Agricultural Organization, 1974). U.S. vessels fish mainly for snappers in deeper waters of 60-140 fm (110-256 m). The Campeche Shelf was an important fishing area for the U.S. snapper fleet, but in recent years, activities have decreased. Catches dropped from about 8.1 million pounds (3,674 t) in 1964 (Allen and Tashiro, 1976) to an annual average of less than 0.7 million pounds (318 t) from 1973 to 1975.

The Gulf Fleet competes with U.S. snapper and grouper vessels on the West Florida Shelf. In 1970, the Law Enforcement and Marine Mammal Protection Division of NMFS, in cooperation with the U.S. Coast Guard, began surveillance of foreign fishing activities in the Gulf of Mexico. From their observations and from interviews with Cuban fishermen, they estimated the catch-per-trip for each Lambda at from 30,000 to 50,000 pounds (13,608-22,680 kg).

For the West Florida Shelf, the annual Cuban Gulf Fleet catch from 1971

Table 2.—Grouper and snapper catches¹ from the West Florida Shelf and the Campeche Shelf by the Cuban Gulf Fleet, 1964-75. Catch figures are in thousand pounds and metric tons (in parentheses).

Year	West Florida Shelf	Campeche Shelf	Total
1964	² 0	³ 8,787 (3,986)	8,787 (3,986)
1965	² 0	³ 12,566 (5,700)	12,566 (5,700)
1966	⁴ —	—	—
1967	—	—	⁵ 13,448 (6,100)
1968	—	—	⁵ 14,991 (6,800)
1969	—	—	⁵ 13,669 (6,200)
1970	—	—	⁵ 16,975 (7,700)
1971	⁶ 3,960 (1,796)	⁷ 11,031 (5,004)	⁵ 14,991 (6,800)
1972	⁶ 3,780 (1,714)	⁷ 9,904 (4,494)	⁸ 13,684 (6,208)
1973	⁶ 4,960 (2,250)	⁷ 8,377 (3,800)	⁹ 13,337 (6,050)
1974	⁶ 3,520 (1,597)	⁷ 11,185 (5,073)	¹⁰ 14,705 (6,670)
1975	⁶ 4,880 (2,214)	⁷ 10,392 (4,714)	¹¹ 15,272 (6,928)

¹Other species groups may comprise up to 10 percent of the catch.

²Apparently no fishing 1964-65.

³Estimated from Carles Martín and Liubimova, 1967.

⁴Indicates data not available.

⁵Morales, 1972.

⁶Estimated by C.M. Fuss, Jr., Chief, Law Enforcement and Marine Mammal Protection Division, Southeast Region, NMFS, NOAA, St. Petersburg, FL 33702.

⁷Estimated by the authors.

⁸Estimated from the annual grouper catch reported in Sáez, 1973.

⁹Estimated from 8 months data reported in *Mar y Pesca* for 1973.

¹⁰*Mar y Pesca*, 1975, Numero Especial.

¹¹Estimated from 8 months data in Ubada, 1975.

to 1975 was conservatively estimated to average 4.2 million pounds (1,905 t) (see footnote 1). The U.S. catch for the same area in 1974 was 13 million pounds (5,897 t) of snappers and groupers (Snell, 1976).

DISCUSSION

The Cuban grouper and snapper fishery, following a period of organization and development, emerged as the present successful Gulf Fleet. Fleet size and catches in recent years were fairly stable. With the present fishing methods, fishing proficiency is approaching its maximum limits. Catches will not increase appreciably without additional fishing effort, which in this case, means more vessels and personnel. The INP fishery administrators are aware of the productive limitations of this fishery; but in assessing the importance of the Gulf Fleet to Cuba, the INP considers not only quantity of the catch but also other aspects such as social welfare, employment, training, and national prestige.

Gulf Fleet catches of groupers and snappers are not exported. These fish are a traditional and popular food item and are an important protein source for Cuban domestic consumption (Cubillas, 1965; Instituto Nacional de la Pesca Cuba-INP, 1967). From 1964 to 1967 the INP changed much of its "Caribbean first" fishing policy and concentrated effort on the development of more productive, distant-water, or high dollar value fisheries. Spiny lobster, shrimp, and tuna ranked highest in value as fishery exports. As a result of this policy change, Gulf Fleet size decreased and many bottom longline vessels were converted and transferred to other fisheries. The Gulf Fleet, however, has been able to maintain catch levels with fewer vessels by increasing fishing efficiency.

Gulf Fleet catches are made in waters that are now under the jurisdictions of Mexico or the United States. That Cuba wishes to continue Gulf Fleet operations is reflected in her ready recognition of Mexico's Exclusive Economic Zone (EEZ) and the subsequent fishery agreement with that country. On 31 July 1976, Mexico unilaterally ex-

tended her EEZ to 200 nautical miles (371 km) off shore; within this zone is the Campeche Shelf. A bilateral fisheries agreement between Cuba and Mexico was ratified in July 1976, permitting Cuba to continue fishing off Mexico until at least 1980. The Cuban quota for groupers and red snapper caught within the EEZ was set at 22 million pounds (10,000 t).²

This allotment exceeds the estimated mean annual catch of the Gulf Fleet from the Gulf of Mexico of 14.5 million pounds (6,577 t). If the Gulf Fleet extends its operating range, additional fishing grounds would be available on the Campeche Shelf west of the Yucatan Peninsula and in the Caribbean Sea.

The United States also created a Fishery Conservation Zone (FCZ) extending 200 nautical miles (371 km) off shore; within this zone is the West Florida Shelf. According to the provisions of the Fishery Conservation and Management Act of 1976, all foreign countries will be prohibited from fishing within the FCZ after 1 March 1977 without a U.S. fishing permit. This would decrease the Cuban catch by about 4.2 million pounds (1,905 t) annually unless Cuba recognizes the FCZ and negotiates a fishery agreement with the United States.

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LITERATURE CITED

- Abascal, J. 1966. El oficio del mar. *Mar Pesca* 4:4-10.
 ———. 1968. Cuba y la pesca: 10 años de revolución. *Mar Pesca* 38/39:8-15.
²Unpublished report No. F41/MB 76/185, 1976. Office of International Fisheries, National Marine Fisheries Service, NOAA, Washington DC 20235.

- Allen, D. M., and J. E. Tashiro. 1976. Status of the U.S. commercial snapper-grouper fishery. *In* H. R. Bullis, Jr. and A. C. Jones (editors), *Proceedings: Colloquium on snapper-grouper fishery resources of the western central Atlantic Ocean*, p. 41-76. Fla. Sea Grant Prog. Rep. 17.
 Anonymous. 1966. *Mar Pesca* 6 (unnumbered page 64).
 ———. 1975. —Después en el Golfo—. *Mar Pesca*, Numero especial, December, p. 11.
 Arango, O. 1974. Millonarios del pueblo. *Mar Pesca* 100:18-23.
 Bailey, R. M., J. E. Fitch, E. S. Herald, E. A. Lachner, C. C. Lindsey, C. R. Robins, and W. B. Scott. 1970. A list of common and scientific names of fishes from the United States and Canada, 3rd ed. *Am. Fish. Soc., Spec. Publ.* 6, Wash., D.C., 149 p.
 Buesa, R. J. 1964. Las pesquerías cubanas. *Centro de Investigaciones Pesqueras, Cuba, Contrib.* 20, 93 p.
 Carles Martín, C. A., and T. Liubimova. 1967. Datos sobre distribución de las principales especies comerciales del Banco de Campeche. *In* *Trabajos al III Congreso Nacional de Oceanografía*, Marzo 15-18, Campeche, Mexico, p. 60-80. *Centro de Investigaciones Pesqueras, Cuba*.
 Chang, E. 1971. En la Flota del Golfo. *Mar Pesca* 67:4-11.
 Cubillas, V. 1965. Amplía su capacidad operativa la Empresa Estatal de Pesca. *Mar Pesca* 1:6-13.
 Ferguson, J. H. 1968. Cuba. *In* C. Véliz (editor), *Latin America and the Caribbean, a handbook*, p. 241-256. Frederick A. Praeger Publ., N.Y.
 Food and Agriculture Organization. 1974. Atlantic, western central (Fishing area 31), nominal catches by species and by countries, 1965-72. *FAO Fish. Circ.* 615, 38 p.
 Fuss, C. M. 1972. Foreign fishing off the southeastern United States under the currently accepted contiguous sea limitation. *Proc. Gulf Caribb. Fish. Inst.*, 24th Annu. Sess., p. 19-41.
 Instituto Nacional de la Pesca Cuba - INP. 1967. The fishing industry in Cuba. *Instituto Nacional de la Pesca Cuba*, 31 p.
 Instituto Nacional de la Pesca, Centro de Investigaciones Pesqueras-INP/CIP. 1974. *Resúmenes de Investigación, Cuba*, No. 1:236.
 ———. 1975. *Resúmenes de Investigación, Cuba*, No. 2:279.
 Kravanja, M. 1972. Soviet and Cuban fisheries in the Caribbean. *In* J. D. Theberge (editor), *Soviet seapower in the Caribbean: political and strategic implications*, p. 135-163. Praeger Publ., N.Y.
 Leal, M. 1971. En la ruta del vivero. *Mar Pesca* 71:22-29.
 Martínez, J. L. 1948. The Cuban fishing industry. *U.S. Fish Wildl. Serv., Fish. Leaf.* 308, 67 p.
 Morales, P. 1972. 5 años de Cuba en el mundo pesquero. *Mar Pesca* 79:26-35.
 Sáez, L. M. 1973. Pescando a la gorda. *Mar Pesca* 91:5-11.
 Snell, J. E. 1976. Florida landings, annual summary 1974. *U.S. Dep. Commer., Natl. Fish. Serv., Curr. Fish. Stat.* 6719, 11 p.
 Suarez Caabro, J. A. 1957. The present situation in the fishing industry of Cuba. *Proc. Gulf Caribb. Fish. Inst.*, Ninth Annu. Sess., p. 136-143.
 Ubeda, L. 1975. Anatomía de una Flota. *Mar Pesca* 122:4-9.
 Young, E. P. 1971. Five fleets supply fish to Cuba. *Fishing News Int.* 10(5):22-29.
 Zupanovic, S., and P. González. 1975. Investigación y pesquería de la cherna en el Banco de Campeche. *Mar Pesca* 112:22-27.

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