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Oil and Gas Development on Georges Bank: The Responsibility of Federal Agencies for Assessment and Mitigation of Potential Impacts on the Ecosystem

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OIL AND GAS DEVELOPMENT ON GEORGES BANK
THE RESPONSIBILITY OF FEDERAL AGENCIES
FOR ASSESSMENT AND MITIGATION OF
POTENTIAL IMPACTS ON THE ECOSYSTEM

BY

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ABSTRACT

Is it possible to provide adequate protection for the Georges Bank ecosystem as oil and gas exploration begins? The fishing industry and environmentalists say 'no,' but it is the resource managers who are faced with the task of predicting, assessing and mitigating impacts of development while at the same time managing resources and protecting fishery habitats. Much of this responsibility falls within NOAA; however, legislative mandates and agency responsibilities and goals mean that several other federal agencies are involved as well. This paper is an attempt to describe the potential impacts of oil and gas exploration on the Georges Bank ecosystem and on the coastal zone. It also describes how these impacts are assessed or mitigated by legislative mandate through agency programs with special emphasis on NOAA.

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INTRODUCTION

Georges Bank is characterized by a nearly enclosed circulation pattern, constant turbulence, intense tidal mixing, and an abundant supply of nutrients. These features result in an extraordinarily productive ecosystem that supports one of the most varied and prolific fishery resources in the world. Georges Bank has an extremely high rate of primary productivity - the basic measurement of an ecosystem's ability to convert the sun's energy into living matter. The rate of primary production is 400 to 500 grams of carbon per square meter per year, and is as high as or higher than that reported for any other oceanic ecosystem. This dynamic integrated ecosystem contains assemblages of both warm temperate and cold temperate animals, including more than 200 fish species. Resident species considered economically or biologically important are widely distributed spatially and temporally over Georges Bank.

The fishery resources off the northeast coast of the United States, including Georges Bank, support a fish-catching and processing industry contributing a billion dollars annually to the economy of the coastal states from Maine to North Carolina. These resources are now under the terms of the recently passed Fisheries Management and Conservation Act,[1] subject to management by the New England and Mid-Atlantic Regional Fisheries Management Councils. The Councils are required to develop management plans for the resources under their jurisdiction that ensure

[1] Fisheries Conservation and Management Act of 1976, U.S.A. (FCMA) Public Law No. 94-265, 94th Congress H.R. 200, April 13, 1976.

optimal sustained yields based on ecological, economic and social considerations. Input for the ecological decisions are to be based on the "best scientific information available." The best and most sought after scientific information from a fisheries management point of view is the accurate prediction of future stock sizes and the effects of different levels of fishing on the continued production of economically viable resource populations.

Of the 2.2 million square miles of coastal and shelf waters now under the responsibility of the U. S. under the FCMA, only 150,000 square miles, from Cape Hatteras to the Gulf of Maine, are presently routinely monitored for changes in levels of fish populations, plankton, benthos, and hydrographic variation.

During the past decade this region of the continental shelf including the Gulf of Maine, Georges Bank, Southern New England, and the Mid-Atlantic Bight has been subjected to extreme fishing pressure. From 1968 to 1975 the biomass of the principal fish species declined approximately 50% (Figure 1; Table 1); much of the decrease in biomass correlates with increased fishing effort, indicating an overfishing condition (Clark and Brown, 1977). Environmental conditions, coastal pollution, inter- and intra-specific competition may also have contributed to the decline. Studies to quantify estimates of this mortality are now underway. Through National Marine Fisheries Service programs, abundance indices have been developed for each principal fish stock and these indices represent the data base against which changes in abundance levels following a large-scale spill of oil or other toxic substance can be compared. Considering the ready availability of an excellent time-series, fisheries and environmental data available to scientists of the Northeast Fisheries Center (NEFC), the

Figure 1. Decline in the fishable biomass of Georges Bank, Gulf of Maine and Southern New England 1968-1975. Between 1968-69 and 1974-75, the biomass decreased 65%.

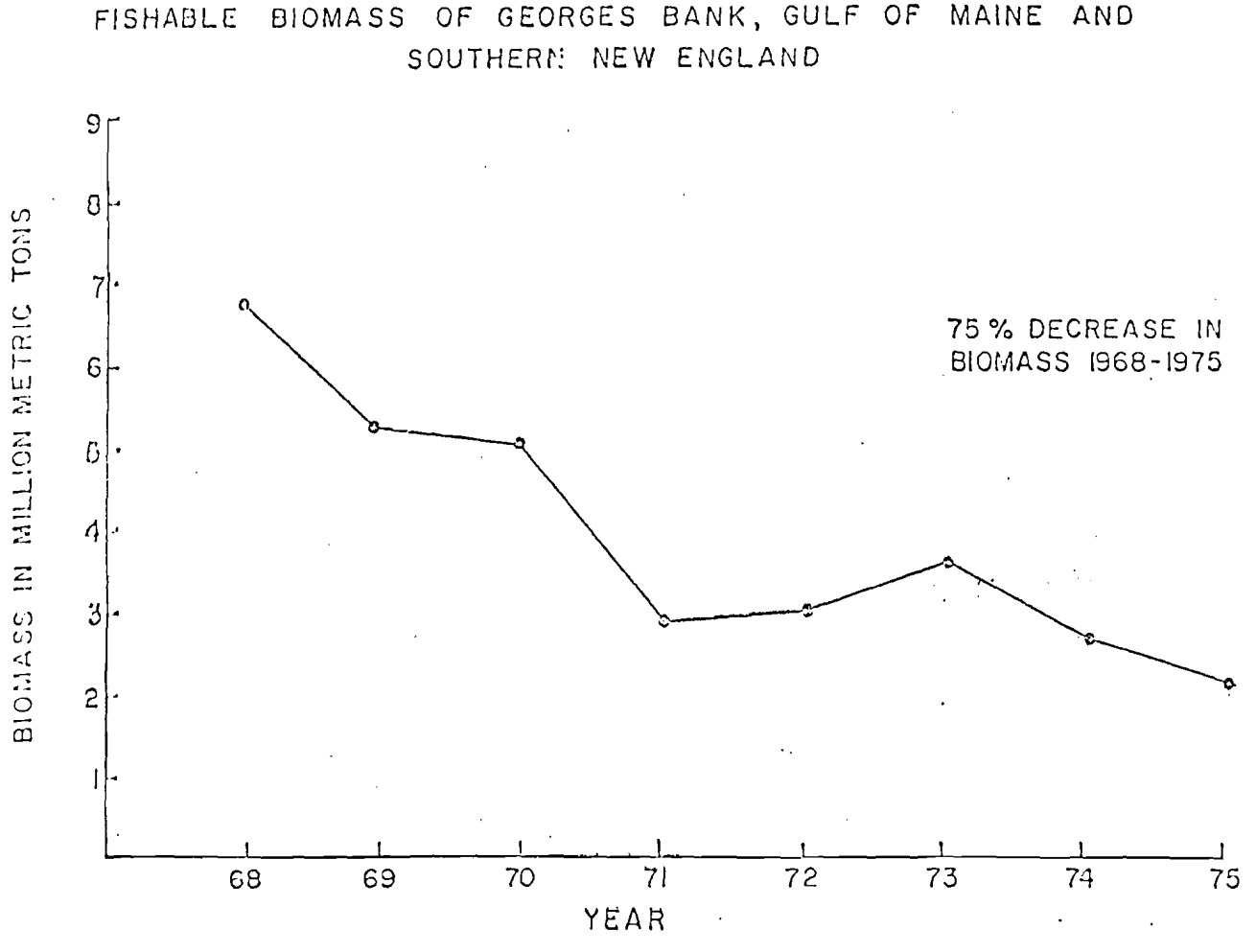

Table 1. Decrease in catch and resultant economic loss to the fishing industry.

Year	Catch Landed Southern New England, Georges Bank, Gulf of Maine Metric tons (MT)[1]	Ex Vessel Price $676/MT[2] Million Dollars	Economic Multiplier Processor to Consumer X3 Vessel Price Million Dollars
1968	1,750,000	1,183	3,549
1975	686,533	464	1,392
1976	647,050	437	1,311
1977	542,294	367	1,001

[1]Catch is approximately 25% of the stock biomass. As the biomass decreases through fishing mortality and factors such as environmental changes and pollution, there is a resulting economic loss to the fishing industry.

[2]Ex vessel price is based on 1977 value.

probability for estimating mortalities resulting from a spill of toxic substances is greater off the northeast coast than in any other continental shelf area of North America.

Within this region of the continental shelf increasing effects of pollution and environmental changes on fishery resources have been reported. For example, an anoxic condition existed for several months off the coast of New Jersey causing extensive mortality of surf clams and substantial economic loss to the fishery. This condition was created partially through unusual hydrographic conditions and nutrient-rich water from the Hudson River. An unusual bloom of a phytoplankter, Ceratium followed by its rapid growth through decomposition in the bottom waters contributed to oxygen depletion over hundreds of square miles (Armstrong, 1977).

Fin rot and ulcerations in bottom fish, particularly flounders have been directly linked with increased carbon sources such as sewer sludge. High incidence (5.1%) of these diseases was present in fish caught in heavily polluted areas such as the New York Bight apex where millions of tons of sewer sludge are dumped each year as compared to 0.7% outside the apex. Similar occurrence was observed in other polluted areas such as Raritan Bay (Murchelano and Ziskowski, 1976). Skeletal anomalies and bent-ray syndrome have also been found in flounders collected from areas of high PCB's directly into the fish (Ziskowski, pers. commun.).[2]

Fish eggs of several species (mackerel, cod, pollock) were collected from the surface waters of the New York Bight and from the areas surrounding the Argo Merchant and Ocean Barge 250 oil and gasoline spills. The embryos were examined and evidence of chromosome abnormalities which

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[2]J. Ziskowski, National Marine Fisheries Service, Sandy Hook, N. J., 1979.

arrest embryo development was found (Longwell, 1976, 1977). There is also evidence that immature eggs developing within the gonads are susceptible to the same toxins as are the embryos. The implication for reduced fecundity therefore exists in areas of chronic pollution.

Physiological changes in fish and shellfish have also been observed in the area of the Argo Merchant oil spill. Following the spill, respiration in ocean scallops and horse mussels was depressed and there was a depression of serum osmolality, sodium and potassium in fish from oil-impacted areas as compared to fish from clean areas (Thurberg et. al., 1978).

Additionally fish flesh samples which were analyzed after oil and gasoline spills indicated that although incidence of petroleum hydrocarbons which could be traced directly to the particular spill were present in only small numbers of the fish analyzed, many of the fish had high levels of other petroleum hydrocarbons. This indicates that many of the bottom feeding fish, especially those that spend some portion of the year in nearshore waters then migrate offshore, are regularly exposed to petroleum in the marine environment and are incorporating these hydrocarbons in their muscle tissue and other organs. The implication for reduced fecundity is clear, but the possibility that this might be a human health hazard has not been explored fully at this time (Griswold, in press).

Many fish stocks on the continental shelf migrate seasonally north and south and inshore and offshore. This migration habit is especially common in the Mid-Atlantic area where the migrants increase the possibility of transmission of disease from one area to another. Other impacts that have been measured from chronic exposures to contaminants on the continental shelf include lowered fecundity and consequently reduced recruitment into a fishery.

POTENTIAL IMPACTS OF OIL AND GAS DEVELOPMENT ON GEORGES BANK

Oil Spill Impacts

Any release of petroleum pollutants on Georges Bank could have a negative impact on productivity, although quantitative estimates of the possible magnitude of such losses are difficult to make. Severity and duration of losses will depend on many things including timing, location, and quantity of the pollutant, and its fate (i.e. dispersal in water, entrapment in sediments, etc). However, there are several aspects of Georges Bank which can be highlighted relative to the problem of blowouts, pipeline ruptures or tanker accidents.

First, the strong tidal mixing and existence of a clockwise gyre on Georges Bank mean that plankton organisms (including highly vulnerable egg and larval stages of fish and shellfish) will be widely dispersed over the Bank but tend to be retained within the gyre. Pollutants will also tend to be retained within the gyre and cumulative effects may be generated particularly for prolonged spills or for longer lived plankton. With regard to a prolonged spill, even though spawning might occur far away from a spill on southern Georges (e.g. Northeast Georges) the larvae would be dispersed and transported to the southwest by the gyre. Also, oil dispersed to the west and north from southern Georges could have a significant impact on the whole of the Bank by affecting primary and secondary production in the upwelling areas alone. Similarly, since a number of

major species migrate on and off the Bank seasonally, an oil spill on Georges Bank could affect food supply or migratory paths of these fish as well as reproduction, thereby impacting on other areas outside Georges - e.g. cod and mackerel fisheries in the Middle Atlantic.

Strong vertical mixing increases chances of incorporating pollutants into sediments where they have longer residence times and where they can affect the entire ecosystem, e.g. through the food web (impacting fishes directly) or through deleterious effects on the benthos recycling of nutrients upon which the whole system ultimately depends.

The wide distribution of marine organisms on Georges, particularly planktonic egg and larval forms, plus the complex interactions linking the various trophic levels - coupled with the circulation properties of the Bank - all point to the fact that Georges Bank must be considered a discrete and unique entity in its entirety. There are no "windows" or sites where it is safe to drill and where minimal impacts from a significant oil spill could be predicted with confidence.

The risk of damage by oil and gas development to Georges Bank is compounded by the fact that the ecosystem has been stressed by overfishing. Potential damage to fish stocks from oil spills, blowouts or pipeline ruptures accompanying OCS development increases the potential for greater ecological damage to the ecosystem and the yield of fish stocks resulting in delayed or altered recovery rates to former levels of abundance with the attendant losses of hundreds of millions of dollars annually to fishing interests of the bordering coastal states.

Oil Spill Assessment, Legislation, and Programs

Each year 6 million metric tons of petroleum hydrocarbons enter the world's oceans (Nat. Acad. Sci., 1975). Of this amount 1% is attributable to offshore production, 44% is introduced from municipal and industrial wastes, and river and urban runoff, 35% from transport and offloading operations, and 20% from natural seeps and atmospheric fallout. Catastrophic events such as blowouts, pipeline ruptures or tanker accidents generally account for less than 1% of all petroleum hydrocarbons entering the environment; however, because of the potential damage to regional economy and marine resources of Georges Bank much attention is now focused on the possibility of such events as a result of lease sale #42 and the potential of oil and gas development.

In 1975, the National Oil and Hazardous Substances Pollution Contingency Plan was passed in the United States. The Plan provides for a coordinated and integrated response within the federal government to protect the environment from the damaging effects of pollutant discharges. It also promotes the coordination of federal and state response systems and encourages the development of local government and private groups to handle pollution events. The Plan, which is designed to be supplemented by regional plans (to be discussed later), assigns duties and responsibilities among federal departments and agencies, especially NOAA, EPA, the Departments of Interior (DOI), Defense, and State, and the Coast Guard (USCG), and provides for the identification, procurement, maintenance, and storage of equipment and supplies. The Plan establishes a task force, the National Response Team (NRT), a National Response Center (NRC) at the USCG headquarters in Washington, D.C., for coordination and direction of operation

in carrying out the Plan, and a system of communication through the NRC in the event of an accidental or catastrophic event. An On-Scene Coordinator (OSC) is pre-designated by the EPA or USCG to direct and coordinate efforts under the Regional Response Plans (CEQ, 1975).

The Plan affects navigable waters of the United States, adjoining shorelines, contiguous zones, and high seas where a threat to the waters, shoreline, or bottom exists. The area outside of the contiguous zone is covered by the Outer Continental Shelf Lands Act and responsibilities in the event of a spill in that area are in accordance with a 1971 Memorandum of Understanding between DOI and DOT. The Plan complements a joint U.S.-Canadian Contingency Plan which pertains to the Great Lakes as well as adjoining marine shorelines. It also allows for international assistance and provides leadership through the Department of State in developing joint international contingency plans (CEQ, 1975).

In the past decade there have been several major oil spills and blowouts, such as the Torrey Canyon, Arrow, and the Santa Barbara blowout. But until the Argo Merchant went aground and broke up on Nantucket Shoals in December 1976, there had been little effort in the northeastern U.S. to develop a plan which could be put into effect to mitigate or evaluate the impact of the oil spill. This despite the fact that the Plan passed in December 1975 specifically required and provided for the development of regional plans within the U.S.

Since that time NOAA has developed internal response plans to assist in the organization of an interagency mechanism that will allow efficient and effective use of federal scientific resources. Should a spill occur scientific support will be organized by EPA and NOAA to provide scientific guidance in spill damage assessment, including trajectory analysis,

chemical analysis, location of environmentally sensitive regions, assessment of environmental considerations involving cleanup operations, assessment of environmental damage and coordination of on-scene scientific activity. Generally EPA would be responsible for coordination response for spills within the three mile baselines and NOAA would have authority for spills outside the baselines.

In addition to spill response plans NOAA has developed a marine pollution monitoring plan called the Northeast Monitoring Program (NEMP). Where a spill response plan deals primarily with short-term assessment, NEMP is concerned with long-term ecological changes resulting from pollutants entering the marine environment. NMFS is the leading agency in this program. Stations are being monitored throughout the lease sale #42 area already, and data gained should provide baseline information against which changes resulting from chronic or acute pollution associated with offshore development can be compared. Information from these studies can aid the Georges Bank Biological Task Force in advising the Secretary of the Interior and the USGS of potential harm.

NOAA Safeguard Proposals for Georges Bank Lease Sale #42

With increasing demand for oil products and dependence on foreign imports came the realization that the U.S. must accelerate its search for domestic petroleum sources and so the five year accelerated lease program of OCS lands was developed. Under the Outer Continental Shelf Lands Act Amendments the Bureau of Land Management (BLM) has responsibility for the lease sales. When it became apparent that the Georges Bank lease sale would proceed, the area was formally nominated as a marine sanctuary under the Marine Protection, Research, and Sanctuaries Act of 1972. With

the exception of the dumping of toxic material, no non-fishing activity would have been prohibited or impossible within the boundaries of the proposed sanctuary. However, any activities would be subject to a certification process and must be found consistent with fisheries management and protection before being allowed to proceed. The certification authority would have been the New England Regional Fishery Management Council. NOAA backed the Sanctuary proposal, then withdrew its support for political reasons. In doing so three safeguard options were demanded of the Department of the Interior by NOAA. They were: 1) withdrawal of canyon head tracts from lease sale #42; 2) barging of muds and cuttings off or away from Georges Bank; and 3) establishment of a Georges Bank Biological Task Force.

Canyon heads

Canyon heads support rather specialized biological communities and habitats. These include several species of deep water corals which are protected by the Department of the Interior and the pueblo villages, unique to northern canyons, which provide habitats for many species including lobsters, red crabs and tilefish. It is this deep water population of lobsters which supports the profitable offshore lobster fishery. Although oil spills and chronic pollution associated with exploratory and production drilling are important considerations, it is the drilling muds and cuttings which could endanger these communities by smothering or filling in of the burrows etched out of the canyon walls and floors by the various inhabitants. In addition to the physical effects of the muds, the toxicity of the mud components to these communities has not been determined. Canyon head tracts were withdrawn from the sale.

Drilling Muds and Cuttings

The second request was that drilling muds and cuttings be barged off Georges Bank. To date no firm decision on whether or not to barge some or all of the cuttings has been made.

During drilling, discharged mud and cuttings produce a plume of muddy water that can be distinguished by surface observations for a few hundred feet down-current and produce an accumulation of cuttings on the bottom. In the Gulf of Mexico and adjoining coastal waters this discharge appears to have no effect on marine life. Recreational fishing is common on offshore platforms and drilling rigs, and fish are often caught within a few feet of the discharge points.

Ray and Shinn (1975) reported on 2 days of observations made in 1973 at a platform off the Louisiana coast located in 245 ft of water. Scuba divers observed the discharges from a discharge pipe located 35 ft below the water surface. They observed no acute effects of the discharge on marine organisms in the water column. The lighter and finer materials were seen to rise vertically, spread horizontally, and disperse in the current. The larger cuttings fell almost straight to the bottom. Encrusting forms that grow on the hard substrate around the platforms appeared to be unaffected by the discharges. Barnacles were living not only on and beneath the downpipe but actually inside it where they would be most affected by the discharges.

Zingula (1975) observed the discharge of mud and cuttings at a South Timbalier Block 54 platform. He took surface samples of water at the discharge point, 300 ft upstream, and 300 ft and 660 ft downstream (the farthest visibly muddy point). He also took samples 30 ft below the surface at the discharge point and 300 and 660 ft downstream.

At 660 ft downstream the suspended solids content was at background levels (~5 ppm) for Gulf of Mexico water. Even 300 ft downstream only traces of mud could be found (40 ppm suspended solids). From the platform the muddy water could be clearly seen on the surface above the discharge point. However, the suspended solids content at that point was 278 ppm, while that of the mud being discharged was 350,000 ppm (just below the shale shaker). This indicates that the mud solids had already been diluted by 1,000 volumes of sea water while rising to the surface and nearly ten thousandfold while moving 300 ft downstream. These observations also indicate that the actual dilutions were greater than calculated by the dispersion model.

Zingula observed no adverse effects on fish or other organisms in the water column during this sampling. During previous studies in October, 1971, he observed, photographed, and sampled cuttings accumulated under a drilling rig in South Timbalier Block 111 in 80 ft of water. He observed crabs and gastropods digging in the cuttings pile, while groupers and red snappers were nosing in the pile, undisturbed by the chips still falling through the water. Some fish would even take cuttings chips in their mouths, only to spit them out when they discovered they were not edible.

The studies discussed above indicate that any mud and included toxic materials discharged while drilling are rapidly dispersed and diluted to non-toxic levels. No adverse or acute effects on organisms have been observed in the water column because of rapid dilution.

The principal solid components, bentonite and barite ($BaSO_4$), are insoluble, inert, and nontoxic and should not affect marine life. Investigators have been unable to add enough barite or bentonite to a test solution to establish through bioassays a median tolerance level for these

materials. Barite (barium sulfate) used in drilling muds is very insoluble (0.03 ppm in sea water at 25°C). This is 30 times less than the 1.0 ppm allowed in public drinking water systems. Barite is also used by physicians as an opaque slurry in radiography diagnosis and is considered nonpoisonous.

Many of the other inorganic chemicals commonly used in mud are not generally considered toxic either. Sodium carbonate, sodium bicarbonate, and sodium acid pyrophosphate are added to react with calcium ions which enter the mud. These chemicals react to form the inert solids, calcium carbonate or a calcium phosphate. Sodium hydroxide is added in considerable quantity over the life of the well to control pH. The hydroxide ion immediately reacts with hydrogen ions, effectively neutralizing the caustic. At pH 10, usual for lignosulfonate muds, the hydroxide ion concentration is only 1.7 ppm, equivalent to about 4 ppm of sodium hydroxide. Upon discharge the small amount of unreacted sodium hydroxide immediately dilutes and/or further reacts with sea water and is neutralized.

Of most concern are materials that dissolve in the liquid phase of the mud and become part of the filtrate. The most common of these are chrome lignosulfonates, lignites, and sodium hydroxide. Small amounts of sodium acid pyrophosphate, sodium carbonate, or sodium bicarbonate also are added to remove calcium. Chromium salts may be added in extremely deep (high temperature) wells. Organic specialty products might be used to combat foaming, corrosion, or bacterial growth. EPA generally requires that biocides be reduced.

Organic specialty products, if present at all, are likely to be at very low concentrations (a few ppm). However, some such products can be quite toxic (in fact, bactericides must be), so they are used only for specific well problems. When discharged, concentrations are quickly

lowered by dilution to levels where they can be rapidly biodegraded (Gawel and Huddelston, 1972).

Of the materials added to drilling muds in appreciable quantities, the toxicities of the ferrochrome and chrome lignosulfonates (when tested as individual components) appear to be the highest. Reported 96-hr TL_{50} values for aqueous solutions of these components range from 465 to 12,200 ppm. Test organisms included white shrimp, rainbow trout, and sailfin mollies, so some of the variation probably represents differing sensitivities of the test organisms.

A cuttings pile under platform Hazel, 3.2 km off the California coast, has been the subject of several studies since the platform's installation in 1958. After three years of cutting disposal, a conical pile of predominantly fine silt, 37 m in diameter and 6-8 m high, was present under the platform. The pile surface was smooth and did not attract fish or sessile epifauna. At that time it was stated that the pile neither added to nor detracted from the environment (Carlisle et. al., 1964), although the area covered by the pile was rendered temporarily unproductive. The authors observed that such piles could serve as fishing reefs if they were discharged several hundred feet from platforms and capped with rubble.

Seventeen years after initial cutting disposal, the pile was reported to be the same height but 76 m in diameter, and supported a flourishing fauna (Mearns and Moore, 1976). A bottom area of 1396-2792 m^2 around Hazel appeared to have increased productivity, due to input of material such as feces and eggs from platform fauna or to altered current patterns with resultant changes in sedimentation or resuspension. The pile was augmented by clumps of mussels falling from the platform.

In another drilling impacts study, conducted 161 km off California,

in situ observations uncovered no buildup of cuttings or muds (Ray et. al., 1978). This was attributed to the currents and surge present. The discharges created a turbidity plume typically extending to perhaps 350 m downstream of the platform.

A summary of studies in the Gulf of Mexico (Monaghan, 1975) also indicated that plumes from mud dumping were quickly dissipated (within 183 m). No adverse effects of the discharges on fish or other organisms were observed. Fish did not avoid plumes, and browsed in cutting piles. "Normal" benthic communities were reestablished on a cuttings pile with 8 1/2 months of drilling, and were still present at former drilling sites 10+ years later (Monaghan, 1975). Cuttings piles in the Gulf were typically 1 m high and 0.2 ha in area, and their substrate supported greater numbers and diversity of fauna than did the surrounding seafloor (Shinn, 1974). By 10-15 years after drilling, cutting piles have been dispersed by storms and mixed with surrounding sediments to the extent that the piles can no longer be distinguished (Shinn, 1975; Monaghan, 1975).

Pequegnat (1974) disagreed with Monaghan in suggesting that the majority of benthic fishes avoided drilling sites in the Gulf of Mexico. Pequegnat felt that the bottom compactness, litter and shell hash under rigs and platforms reduced stocks of infauna on which some benthic fishes fed; toxicity of drilling mud components was suggested as another possible contributing factor.

Drilling mud and cutting from the more than 19,000 wells drilled offshore and in coastal waters of the United States have not resulted in large-scale environmental damage. Discharged cuttings normally fall to the bottom and form a circular or elongate pile up to 150 ft in diameter and less than 3 ft high, thinning rapidly to the edges. Both measurements and theoret-

ical calculations indicate that mud discharged during normal drilling quickly mixes with sea water and is diluted at least a thousandfold about 300 yd down-current. Divers have observed fish swimming back and forth through the mud and cuttings discharges and have found barnacles growing on and in the exit of the discharge pipe. These observations indicate that the mud components are quickly diluted and do not adversely affect biota in the water column. Dispersion measurements have not been made during mud discharge at the completion of a well, but dispersion model calculations indicate that bulk mud discharged at normally high rates (250 bbl/hr) is diluted one hundredfold 0.2 mi down-current in less than 1 hr.

The material added in greatest amounts to drilling muds is barite (barium sulfate). This material is nontoxic, since bioassay tests have been unable to establish any toxic limit. This is the same material used in the "barium cocktail" taken by patients before having X-rays of the digestive tract. Bioassay data indicate that any acute toxicity for a typical mud should be due mainly to the dissolved lignosulfonate thinner. However, rapid dispersion and dilution quickly lower the concentrations (within a few minutes to an hour) below those found to be toxic in bioassay tests conducted for 4 days without provision for dispersion and dilution.

Further, such discharges apparently have not caused long-lasting effects, as a wide variety of motile organisms are found on and under oil producing platforms. Fixed organisms permanently establish themselves within a few months of the platform's installation. In the Gulf of Mexico 10- to 15-yr old cuttings are no longer distinguishable from the normal sediments. Studies in Timbalier Bay (shallow water and a long history of petroleum operations) have documented no adverse effects on marine life or

buildup of hydrocarbons or metals.

In California, the sedimentary rock chips are more resistant to weathering and are still recognized after 15 years. These cuttings piles support healthy and varied hard substrate biological communities that contrast sharply with the surrounding soft bottom communities.

However, it is estimated that drill cuttings from 28 production platforms could cover an area of 500,000 sq ft on Georges Bank, representing an annual loss of 1.7 percent of scallop pounds and 400 thousand dollars in value of landed catch (U.S. Dept. Interior FES OCS Sale 42, Vol. 2).

Although the studies generally show low impact there is still suspicion on the part of NOAA regarding the effects on Georges Bank because of the commercially important benthis species. Fish eggs and larvae as well as the zooplankton abundant on Georges Bank during much of the year could be affected and studies are being recommended which will study in situ impact. Because of the strong clockwise gyre on Georges Bank, there is also fear that many of the lighter components will be concentrated and deposited in sediment sink areas rather than dispersed.

In addition to drill cuttings and muds, chronic rig pollution problems such as grease and oil on the decks, dispersants, waste water and sewage which is chlorinated have to be considered. These,too, fall under the aegis of EPA NPDES permitting. Many laboratory studies of drilling fluids and muds are now underway using fish and shellfish species which are endemic to the Georges Bank area. These studies are supported by EPA which is responsible for discharge permits under the NPDES. The EPA is actively seeking new information about the effects of drill muds and fluids in order to establish new criteria for discharge and to set standards which would safeguard the Georges Bank ecosystem.

The Georges Bank Biological Task Force

The third request from NOAA was that a biological task force (BTF) be established to make recommendations to the U.S. Geological Survey (USGS) Oil and Gas Supervisor on "aspects of oil and gas operations resulting from lease sale #42 that affect biological resources on Georges Bank and their habitats, including the enforcement of stipulations relating to the protection of biological resources and habitats and the design of environmental studies and surveys, as well as periodic sampling of environmental conditions, to provide warning of adverse impacts." (Charter, Biological Task Force for OCS Lease Sale #42 - Georges Bank, Appendix).

The BTF was established in October, 1979, and is composed of one voting member from BLM, U.S. Fish and Wildlife Service (USF&WS), USGS, EPA and NOAA. Representatives from affected coastal states also participate, but they are non-voting members. The meetings are open to the public and anyone may serve on subcommittees. The first task the BTF approached was to develop a short-term monitoring program. The program is designed to characterize the physical, chemical, and biological properties of three leased tracts which have different depth and sediment characteristics. Sampling would be conducted before, during, immediately after, and one year after exploratory drilling. A long-term monitoring plan is also being developed and this will encompass the short-term program. These studies are designed to detect changes in levels of hydrocarbons, trace metals, infaunal and epifaunal communities, sediment deposition, physiological and genetic effects associated with normal rig operations.

The BTF is also responsible for identifying zones of special biological significance such as benthic populations or habitats, fish populations, spawning areas or times. This charge falls under Stipulation #2 which is

attached to lease sale #42 and states:

> When an area or resource has been identified as biologically important, by a committee composed of designated representatives of the Bureau of Land Management, U. S. Fish and Wildlife Service, U. S. Geological Survey, the National Marine Fisheries Service, the Environmental Protection Agency, and representatives of the affected States, the Supervisor may give written notice that the lessor is invoking the provisions of this stipulation. The first definition of such areas will take place before exploration starts in the lease sale area. The area will be examined periodically by the Committee throughout the operating life of the field. The lessee shall, upon receipt of such notice, comply with the following requirements:
>
> > Prior to any drilling activity or the construction or placement of any structure for exploration or development of lease areas (hereinafter referred to as 'operation') including, but not limited to, well drilling and pipeline and platform placement, the lessee shall conduct environmental surveys, as approved by the Supervisor after consultation with the Committee, to determine the extent and composition of biological populations within the area covered by the lease.
> >
> > Based upon results of the survey, the lessee may be required to 1) relocate the site of such operations so as not not to adversely affect the area identified; or 2) modify his operation in such a way as not to adversely affect the area identified; or 3) establish to the satisfaction of the Supervisor, who will consult with the Committee, that, on the basis of the environmental survey, such operations will not adversely affect the area. The Supervisor will take into account the Committee's recommendations.
> >
> > The lessee shall submit all data obtained in the course of environmental surveys, conducted pursuant to this stipulation, to the Supervisor, who will make this data available to the Committee, with the locational information for drilling or other activity. The lessee may take no action that may result in any effect on the biologically important areas until the Supervisor has given the lessee written directions with respect to the area.
> >
> > If, during operations, any area of biological importance is identified, the lessee shall make every reasonable effort to protect and preserve all biological populations with the lease area, until the Supervisor has given the lessee written directions with respect to the area of biological importance.

In addition to the BTF being able to advise the Oil and Gas Supervisor

to have the leasee alter his operations as a result of biological impact, the OCSLAA also states that if there is impact on biological communities the Secretary of the Interior can withdraw the tract.

One of the major problems NMFS has with designating areas of biological significance is that it feels that Georges Bank is an integrated ecosystem and that no one area is any more or less important than any other. Because it is a dynamic system its productivity supports resident and migrant populations, and although frontal areas along the 60 and 100 m contour are areas of demonstrated high productivity the circulation patterns and the moving populations insure that other areas also benefit. However, the BTF is attempting to characterize special zones which would then be monitored more closely for changes.

The BTF is apparently being watched very carefully by Congress, and there is a possibility that if the BTF functions well for lease sale #42, legislation might be introduced which would mandate BTF's for all lease sales and which would give such a group more power than it has now as an advisory body.

Pipeline Planning and Impacts

Another potential problem which could directly effect resource populations as well as the coastal zone and the fishing industry is the planning of pipeline corridors and the laying of the pipeline in the event of a commercial strike of gas or oil. Blaikley (1977) explains techniques for laying pipelines in the North Sea; the techniques used on Georges Bank would be similar.

> Offshore, submarine pipelines pose an obvious environmental hazard and on the basis that prevention is better than cure, great care is taken in designing, manufacturing and laying

> the pipe. Pipe used offshore must meet far more rigorous specifications than that used onshore where repairs can be made at a fraction of the cost. The pipe has anticorrosion coatings, followed by concrete coating to provide weight and protection against damage. During laying, which is a particularly delicate operation, the pipe has to be supported in such a way that buckling of the section between the lay barge and the seabed does not occur. Consumable anodes are attached to the pipe to provide additional corrosion protection and,...at intervals along the line strengthening sleeves are added to prevent a buckle spreading should it occur. To give further protection to the pipeline, particularly against damage from anchor dragging or trawl boards, the former the cause of several major pipeline spills in the Gulf of Mexico, pipelines in the North Sea will be buried in the seabed. Techniques for burying vary, depending on seafloor, from high-pressure jetting systems for silt and sand to mechanical cutters or shaped explosive charges for rocky areas. Despite these precautions the operator has to be prepared for ruptures. One of two complementary approaches being used in the North Sea is the old method whereby sensors detect any drops in line pressure indicative of a possible break and automatically close down the line in a matter of minutes. A more recent approach used in conjunction with pressure monitoring is the employment of continuous computerised comparison of volume-in/volume-out, following suitable corrections for pressure, temperature and compressibility. Any deviation from a preset limit would result in alerting of both onshore and offshore control centres with automatic close-down of the system. Small leaks would not be detectable by these approaches but would be covered by routine helicopter flights looking for rainbow sheens or other discoloration. At landfall one or more tanks can be maintained empty for line surge and emptying (Blaikley, 1977).
>
> By reducing the vulnerability of submarine pipelines to third-party damage, the largest cause of pipeline mishaps, and by effective monitoring both the potential for leakage and the size of leaks can be greatly minimised. Such leaks as may occur would, as any other spill, be dealt with by oil recovery and dispersion techniques (Blaikley, 1977).

There is a paucity of studies dealing with impacts of jetting sediments during pipeline burial. However, it can be assumed that where the sediments involved are predominantly sands, effects should be localized around the pipes and should be temporarily small, since the sands will be redeposited rapidly. Impacts are probably comparable to those of several passes of a hydraulic clam dredge. Total areas affected would thus be small relative

to the area perturbed, say, by hydraulic clam dredging on the Middle Atlantic shelf. Worst case effects of jetting will involve introduction or disturbance of finer sediments in deep outer shelf waters. Here suspended materials may persist longer in an area, due to the less dynamic current regimes, and the fauna may be less adapted to shifting or suspended sediments. Laying pipelines through dumpsites, which could remobilize significant quantities of contaminants, will usually be avoided. The loss of trawl-fishery grounds to pipeline is estimated for the Georges Bank area to range between 36 to 108 million dollars (U.S. Dept. Interior, FES OCS Sale 42, Vol. 2).

Additionally alternate corridors must be proposed based on the projected landfall of the pipeline. To some extent existing refineries and mainland collecting pipelines determine the general area of these landfalls, and the onshore impacts must be described in an environmental impact statement as required by NEPA (National Environmental Protection Act). Impacts relating to pipeline corridors and other onshore impacts relating to offshore oil and gas development can be planned for by the affected state under amendments to the Coastal Zone Management Act and the OCSLAA.

Coastal Zone Management: Programs, Planning and Problems

State coastal zone management programs are in one of two stages: planning (program development) or operational (program administration). A third stage which encompasses the future direction of CZM involves the Coastal Energy Impact Program (CEIP) which was inacted when the CZMA was amended in 1976. It is a 10-year program which is loosely connected to the coastal management programs (U.S. Dept. of Commerce., 1978). Energy development must be consistent with affected states' CZM plans and the

amendments encourage states to review such developments (federal consistency clause).

Although an affected state's CZM plan might address many aspects of marine and coastal area management and use, there are many decisions which are still governed by local, state and many other federal agency laws. The plans developed through the Coastal Zone Management Act have focused attention on coordinated use of the coastal zone with the emphasis on management. Matching funds from the federal government have made such coordinated effort possible.

The future emphasis on coastal zone management in the Northeast will revolve around energy siting problems of offshore oil and gas development; with the OCSLAA accelerated 5-year lease sale program and with several sales in the mid-Atlantic and on Georges Bank already completed, states must plan for coastal and onshore impacts.

Through the federal consistency amendment to the CZMA affected states with an approved Coastal Zone Management Plan are requested to make consistency determinations of Exploration Plans and Environmental Plans filed by the oil companies to the U.S. Geological Survey. The Exploration Plan includes:

- Type and sequence of exploration activities and tentative timetable of activities.
- Descriptions of drilling vessels, platforms of other offshore structures, and features such as safety and pollution prevention and control measures.
- Geophysical equipment to be used.
- Approximate location of each well.

The Environmental Report for exploration contains:

- Description of the affected ocean area.
- Description of environmentally sensitive areas.
- Procedures for oil or waste spill prevention and clean-up.
- Onshore support facilities.
- Personnel requirements.
- Travel routes and transport operations
- Demands and impacts on offshore and onshore environments.
- The lessee's statement of consistency with applicable state approved coastal zone management programs.
- Name, address and telephone number of an employee of the lessee to whom inquiries can be made. (Atlantic Index, 1979)

States with approved Coastal Zone Management Plans are also to be requested to make consistency determinations on any EIS produced. On the basis of the EIS and the consistency certification the exploratory drilling plan will be approved, disapproved or modified. The same procedure of certification for consistency with an affected states CZM Plan is true for development and production plans.

As development occurs Transportation Management Plans also will be developed for each OCS region. The plans must include the following elements:

1. Analysis and recommendation for discrete corridors and alternatives, which will include all transportation routes to onshore facilities or to offshore terminals serving as a collection point for more than one production area;
2. Identification of environmentally sound alternative areas for the location of onshore facilities;

3. Any alternatives regarding surface vessel transportation (in accordance with appropriate regulatory agencies);
4. A plan for monitoring of construction and operations and any following-up studies which may be required; and
5. Any stipulations and use restrictions identified as applicable to rights-of-way. (Atlantic Index, 1979)

Regional Technical Working Groups for Intergovernmental Pipeline Planning and, if a marketable discovery is made, State Technical Working Group Subcommittees will prepare site-specific studies and the Transportation Management Plan. The Technical Working Group Committees are newly appointed and have representatives from federal agencies and each affected state; one state representative co-chairs the meeting with the BLM representative. The Technical Working Group representatives are also members of the OCS Advisory Board.

CEIP funds, as administrated by the CZM program, NOAA, to the individual states with CZM plans, provide an opportunity for the states to look at specific energy siting problems and to mitigate adverse impacts of energy development activity in the Coastal zone. The CEIP funds also provide loans for construction of public facilities related to increased energy activity in the coastal zone. It provides yet another opportunity for states to interact with federal agencies through the incentive of funding to deal with coastal management problems which are important on a local as well as national level.

There are many facets of the CEIP. Funds are allotted by means of a specific formula, and so are referred to as "formula grants." The "formula" is based primarily on the amount of OCS acreage newly leased adjacent to a coastal state, as well as the amount of oil and gas produced

off that coast and the amount landed in the state.

Another aspect of the enactment of the CZMA was the development of an Office of Coastal Zone Management with its various intraagency offices such as ORCA (Office of Ocean Resources Coordination and Assessment) which gathers information on a regional or national scale concerning resources and resource use problems and issues. This information can be used in management decisions and can distinguish between analyses appropriate for generating information for macro-level, strategic decision making (such as, integrated analysis and planning for multiple coastal/ ocean resources uses for large regions) and those appropriate for micro-level, tactical decision making (site-specific analysis). Regional data bases coordinated by federal agencies can help adjacent states with similar problems.

The CZMA, through allocation of funds to coastal states, was designed to help states develop or develop further comprehensive policies - within the broad bounds set down by the CZMA - to manage the coastal zone. Each state's plan differs according to the nature of existing industry, settlements or open land. In many states, the planning and managing has no doubt been more successful than in others. The weak points in the program can be traced to problem areas which are under the jurisdiction of many federal, state and local agencies which makes decisive management difficult because of too many conflicting interests.

Chasis (1979) states that she feels the state programs have failed to significantly strengthen resource protection, and that often states threaten to weaken existing resource protection programs in the name of balancing competing interest. The National Resources Defense Council (NRDC) (NRDC) which Ms. Chasis is a member, believes there is a need for the

establishment of a national policy to guide federal, state, local and private actions affecting our coasts. In order to assure a viable coastal policy NRDC believes this policy should be included in the CZMA. Chasis states that "it is in the national interest to maintain and enhance a living and vital coast; to this end, every coastal state should have in place a coastal zone management program which has the capability of ensuring the protection of critical coastal resources, including wetlands, beaches, dunes, barrier islands, estuaries, fish spawning and nursery areas."

Where the NRDC feels the CZMA and amendments are not doing enough to protect resources, the petroleum industry is concerned about federal consistency which allows state coastal management policies to assume the force of federal law by virtue of NOAA's approval of state CZM programs. It also feels the consistency procedures in CZMA are counter productive to the expressed purpose of the OCSLAA which focuses on expediting OCS development. Industry feels state level federal consistency determinations in OCS should be eliminated. It also feels that NOAA is changing its interpretation of the Act so states can have approved programs without adequate consideration of national interest. Industry feels there are too many delays now built in and these mean an additional year or two before development can begin (Chamberlain, 1979).

The conclusion is that "the petroleum industry believes that the CZMA, as amended, is designed to achieve a balance between the need for wise management of our coastal resources and the furtherance of the national objective for an increased availability of domestic energy supplies. Strict adherence to the terms of the Act would have produced better and more comprehensive state management programs. However, the industry's experience with the programs approved to date leads us to conclude that few

are in compliance with the terms of the Act and that NOAA needs strong legislative direction" (Chamberlain, 1979).

SUMMARY AND CONCLUSIONS

The conclusions which can be drawn do not provide a definitive answer to the question "is it possible to provide adequate protection for the Georges Bank ecosystem as oil and gas exploration begins?" For an ecosystem already under stress from overfishing, potential impacts of pollutants including oil and other petroleum products associated with drilling and transport, drilling muds with their associated chemical components, waste water, primary treated sewage and other domestic wastes can only further stress the system. NOAA opposed the leasing of the Georges Bank area for these reasons. The Sanctuary proposal might have provided additional safeguards for the system - it did not specifically exclude oil and gas exploration - , but politically NOAA could not support this proposal to its desired end. In withdrawing the proposal NOAA made three requests which it hoped would aid in safeguarding Georges Bank.

The first was withdrawal of canyon head tracts from the lease sale #42 in order to protect the specialized communities and habitats - in particular the coral and the commercially important lobster. The second was that all drill muds and cuttings be barged from Georges Bank. Since drilling has not begun and the toxicity or potential impact of these materials has not been determined, no firm recommendation regarding barging has been made. The third request was that a Georges Bank Biological Task Force be established that could recommend studies, evaluate impacts and advise the USGS Oil and Gas Supervisor and the Secretary of Interior. This group is already developing long- and short-term monitoring projects to

ascertain the effects of exploratory drilling on the ecosystem. It is also attempting to delineate zones of special biological significance.

Potentially the BTF could be very powerful in its watchdog and advisory role. However, it is not funded and, therefore, can only develop plans but cannot implement them. Funds would have to come from another source, possibly BLM or the oil companies. This could mean a fragmentation or dilution of recommended studies with the result that no comprehensive picture of what is actually happening to the resources and ecosystem as a whole would emerge.

There is some indication that the BTF will be mandated by law in the future; if that is the case then the effectiveness of such a group would increase.

NOAA does have a long-term pollution monitoring program (the Northeast Monitoring Program) intact and it occupies several stations in lease sale #42 on a regular basis. This program is gathering what will be baseline data against which any change resulting from exploratory drilling can be compared. It is possible that this program could be expanded to include the short-term types of sampling that the BTF has recommended. This would involve programtic changes and additional funding would be required; however, as the lead agency for pollution monitoring work, it is possible that NOAA could approve such changes and provide funding.

In addition to pollution monitoring,NMFS conducts surveys of the seasonal distribution and abundance of fish, shellfish and ichthyoplankton stocks along the northeast continental shelf. Information from these surveys can be used to monitor resource changes resulting from drilling practices or a catastrophic event.

Short-term assessments are provided for by spill response plans which

would be implemented in the event of a tanker spill, pipeline rupture or well blowout. Either NOAA or EPA assumes lead responsibility for such assessment depending on whether the spill occurs outside or inside adjacent state baselines.

EPA is also the NPDES permitting agency and can impose safeguards on the ecosystem by developing new criteria and standards for the various classes of discharge, in particular the drilling muds. Studies are now in progress which should provide some regulatory information; however, many of these have just begun and may not have useful data prior to the issuance of permits. Consequently, EPA will probably have to rely on previous permitting regualtions which were designed for other marine ecosystems.

There appears to be little concern over laying of pipelines offshore. Since they would be laid and buried once, the assumption is that the disruption of the benthos would not be any more severe than that caused by a hydraulic clam dredge. If a pipeline is ruptured by an anchor or trawling activity, it would be handled as a spill and assessments of impact would be made. The major impact from pipelines is that of coastal corridors. Decisions regarding coastal impacts from both pipelines and on-shore support facilities fall within the purview of the coastal state and can be planned for through coastal zone management plans and regional technical working group committees which develop Transportation Management Plans.

There are many overlapping programs and responsibilities regarding OCS development which emerge from CZMA and the OCSLAA. States should plan for energy siting as part of their respective CZM plans. Through CEIP funds they can further explore energy siting impacts. Through the federal consistency clause of the OCSLAA, affected states can review exploration

plans submitted by oil companies to USGS to determine whether these plans are consistent with its CZM plan. They can also participate in developing Transportation Management Plans. Thus, through legislative mandates and state-federal programs, states can take an active part in planning for offshore energy development. Unfortunately, both environmental groups and the oil industry feel that through a lack of policy guidelines in the CZMA and through inconsistency on NOAA's part in interpreting the Act, the development of CZM plans and state planning for resource preservation and energy development has been generally ineffective. Whether this will be true of the states with CZM plans adjacent to Georges Bank is as yet undetermined.

When all the federal and state programs, regulations, safeguard, and committees are taken into consideration and their ability to protect habitats and renewable resources of Georges Bank weighed, the conclusion will be drawn that even under the best of circumstances, under the best available regulations for operations and under the safest operating conditions, there is no guarantee that there will be no negative impacts during normal operating conditions and there is certainly no guarantee that the worst case event will not occur. If and when it does, responsible agencies are no better equipped to reduce the damage than before, but they can act sooner in a more co-ordinated manner and would be able to assess damage more easily and with more confidence because of adequate baseline data.

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APPENDIX

Charter - Biological Task Force for OCS Lease Sale #42 - Georges Bank.

Charter

Biological Task Force for OCS Lease Sale #42 - Georges Bank

1. Purpose

The purpose of the Biological Task Force (Task Force) will be to advise the Geological Survey's Oil and Gas Supervisor (Supervisor) on those aspects of oil and gas operations resulting from lease Sale #42 that affect biological resources on Georges Bank and their habitats, including the enforcement of stipulations relating to the protection of biological resources and habitats and the design of environmental studies and surveys, as well as periodic sampling of environmental conditions, to provide warning of adverse impacts.

2. Establishment and Composition of the Task Force

There is established a Biological Task Force composed of one representative each from the Bureau of Land Management (BLM), the Fish and Wildlife Service (FWS), the Geological Survey (GS), the Environmental Protection Agency (EPA), and the National Oceanic and Atmospheric Administration (NOAA) The Task Force may establish subcommittees to consider specific issues as appropriate. Representatives of the affected coastal States may participate in activities of the Task Force, but will not be formal members.

3. Presiding Officer of the Committee

On a rotating basis the Task Force shall appoint one of its members as Presiding Officer for a 1 year term. The Presiding Officer shall be responsible for preparing the meeting agenda, scheduling and conducting Task Force meetings, providing the views and recommendations of the Task Force to the Supervisor and for communicating the Supervisor's response to the Task Force.

4. Meetings

All meetings shall be called on the Presiding Officer's own initiative or upon recommendation of any member of the Task Force. Agency representatives may be accompanied by appropriate staff.

5. Data and Information

a. The Supervisor shall provide to all Task Force members in a timely manner relevant Sale #42 data and information obtained from:

(i) Studies, surveys and sampling undertaken pursuant to stipulation #2.

(ii) Environmental reports submitted with exploration plans and development and production plans in accordance with the provisions of 30 CFR 250.34.

(iii) Environmental assessments prepared for proposed oil and gas operations in the sale area.

(iv) Environmental statements prepared for proposed activities on Georges Bank.

(v) Permit applications.

b. The Supervisor shall inform all Task Force members in a timely manner of his actions and decisions which may significantly affect biological resources on Georges Bank and their habitats.

c. The BLM representative shall provide to all Task Force members in a timely manner relevant information resulting from the BLM Environmental Studies program.

d. The EPA representative shall provide to all Task Force members in a timely manner relevant information resulting from NPDES permits.

e. Task Force members may request, through the Presiding Officer, additional pertinent information from the participating agencies. This information shall be provided in a timely manner.

6. Responsibilities of the Task Force

The Task Force shall be responsible for:

a. Identifying, with justification, zones of special biological significance (identified zones) including, but not limited to, benthic populations or habitats and temporal fin fish populations and spawning areas.

b. Recommending studies, surveys and periodic sampling of environmental conditions to:

(i) Characterize existing environmental conditions in identified zones prior to oil and gas operations;

(ii) determine the extent and composition of biological populations within the identified zones; and

(iii) assess changes and risks to such populations and their habitats which occur due to oil and gas operations.

Recommendations shall include procedures for scientific data collection and analysis and identification of who should conduct such surveys.

c. Recommending to the Supervisor, within 90 days following the lease sale, criteria for the evaluation of adverse biological effects on the Georges Bank ecosystem; including, where feasible, the establishment of standards which, if not met, will initiate application of previously agreed upon mitigating measures, including termination or modification as necessary of the activities.

d. Recommending to the Supervisor mitigating measures designed to protect biological resources which may be, or are being adversely affected by oil and gas operations.

e. Advising the Supervisor of any adverse impacts on the marine environment from oil and gas operations.

7. Task Force Recommendations

All Task Force recommendations shall be written and forwarded with any dissenting views, by the Presiding Officer and received and reviewed by the Supervisor. The Supervisor shall inform the Task Force, through the Presiding Officer, of his decisions on recommendations made by the Task Force.

a. Prior to making any final recommendation to the Supervisor, the Presiding Officer shall within 2 working days of any Task Force action consult orally with the Supervisor. Subsequent to this consultation, the Task Force shall decide whether to make any recommendations to the Supervisor.

b. The Supervisor's response to a recommendation shall be in writing.

c. The Supervisor shall reply in writing to all recomemendations by the Task Force not more than 5 working days from the date of receipt of the recommendation. The reply shall indicate the actions the Supervisor intends to take, if any, to satisfy the recommendation, but an interim reply is authorized pending any further analysis that appears necessary. In all instances, a final reply shall be made in not less than 10 working days from the date of receipt of the terms of the recommendation. These time constraints may be varied by agreement of the Task Force members.

d. A recommendation which is not accepted by the Supervisor may be reviewed according to the procedures specified in paragraph 8 below.

8. Procedures for Review

Any action, failure to act or decision of the Supervisor, including the Supervisor's permitting activities to continue, inconsistent with a recommendation submitted to him by the Task Force shall be reviewed as set forth below:

a. Within 5 working days of notice of the Supervisor's action, failure to act or decision, two or more members of the Task Force may request, through the Presiding Officer, that the action, failure to act or decision of the Supervisor be reviewed by the Director, GS.

b. When a recommendation is to be reviewed by the Director, GS, the Presiding Officer shall assure that all pertinent documents and supporting information are timely forwarded to the Director, GS.

c. The Director shall, within 10 working days of receipt of a request and the related documents and supporting information:

(i) sustain the Supervisor's action, failure to act, or decision; or

(ii) direct the Supervisor to modify or terminate the action or decision, or to take the action proposed.

The Director's decision shall be in writing.

d. Within 10 working days of receipt of the Director's decision, the heads of two or more agencies listed in paragraph 2 of this Charter as members of the Task Force may, through the Presiding Officer, request the Secretary of the Interior (Secretary) to undertake additional review. The Secretary shall make a final determination of the issues raised within 30 days of receipt of this request.

e. While an issue is being reviewed pursuant to the terms of this Charter, operations may continue, under plans or permits approved by the Supervisor until such issue is resolved.

f. Nothing in this Charter shall be construed to diminish the right of the bureaus or agencies represented in the Task Force to take action, based on records developed by them, which may be authorized by any statute or regulation other than Title II of the Outer Continental Shelf Lands Act, as amended, or its implementing regulations. Nor shall this Charter diminish other authorities or procedures of the bureaus or agencies represented in the Task Force to comment on, support or oppose actions or proposed actions by the Supervisor, a lessee, or an operator of a lease. Furthermore, nothing in this Charter shall prevent Department of the Interior officials from adhering to the procedures, criteria, timeframes, and other requirements set forth in the Outer Continental Shelf Lands Act, as amended (43 U.S.C. sec. 1340 and sec. 1351), and implementing regulations (43 CFR 250.34) for the approval, disapproval, or modification of exploration plans and development and production plans.

g. Whenever any provision of law mandates a decision on a permit or plan within a specified period of time, the signatory agency heads, by unanimous consent, may shorten the time periods established in sections 7 and 8 of this Charter in order to conform to such statutory time limits.

9. Voting

All actions of the Task Force shall require a majority vote of the agencies voting except as otherwise provided in this Charter.

10. Amendment and Termination

This Charter may be amended or terminated by unanimous agreement of the signatory agency heads. The Task Force shall terminate 10 years from the date of its creation unless extended by unanimous agreement of the signatory agency heads.

James A. Joseph — October 9, 1979

Acting Secretary, Department of the Interior — Date

[signature] — [illegible]

Administrator, Environmental Protection Agency — Date

[signature] — October 3, 19[illegible]

Administrator, National Oceanic and Atmospheric Administration — Date