

Appendixes

State Management of Seabed Minerals

State Mining Laws

All States bordering the territorial sea have statutes governing exploration and mining on State lands, including offshore areas under State jurisdiction. The statutes range from single-paragraph general authorizations, equally applicable on land or water, to detailed rules specifically aimed at marine exploration and mining. Some States provide separate rules for petroleum and hard minerals. These laws are outlined in table A-1, which only includes laws affecting mining activities. The States also have water quality, wildlife, coastal zone management, administrative procedure, and other laws that might affect seabed resource development.

There are large differences among the State mining laws, making a typical or model mining law difficult to describe. A review of the coastal States' mining laws does reveal some common characteristics that suggest different ways to achieve each objective.

Scope:

Many States do not separate onshore from offshore development, thus providing a single administrative process for all mineral resources. At least four States (California, Oregon, Texas, and Washington) distinguish oil and gas from hard minerals.

Exploration:

Most States have general research programs, carried out by geological survey offices or academic institutions. Some States provide for more detailed state prospecting in areas proposed for leasing. Private exploration generally requires a permit.

Area limits are unspecified in most statutes. Land-oriented statutes tend to require smaller tracts, Alaska limits permits to 2,560 acres but allows a person to hold multiple permits totalling up to 300,000 acres.

Prospecting permits may be general or for designated tracts. Alaska, California, Texas, and Washington grant exclusive permits while Delaware, Florida, and Oregon do not. Permits may also specify the type of mineral being sought.

California and Washington grant a preference-right lease to prospectors making a discovery. Delaware and Oregon do not. Other States, including Alaska, Maine, New Hampshire, and Texas, allow all or part of the explored area to be converted to a mining lease upon discovery of commercial deposits.

Exploration results must be reported to the State but their confidentiality is protected for the duration of the prospecting permit and any subsequent lease. Massachusetts requires survey results to be made public prior to the hearing concerning the granting of a lease.

The duration of prospecting permits is generally 1 or 2 years with renewal terms ranging from 1 year to indefinite. Alaska provides a 10-year prospecting term.

Annual rents range from \$0.25 per acre in Texas and Washington, to \$2.00 per acre in California, and \$3.00 per acre in Alaska. Maine has a sliding scale, increasing from \$0.25 per acre in the first year to \$5.00 per acre in the fifth.

Mining Lease or Permit:

Some States grant preference-right leases or allow conversion. Competitive bidding is the general basis for awarding leases with a cash bonus, or royalty, or both being the bid variable. California also allows bidding on "net profit or other single biddable factor. Some States grant leases noncompetitively, conducting an administrative review of individual lease applications. Public hearings are usually required under all of these systems.

Most States do not specify area limits for mineral leases. Where conversion is allowed, a prospector may only convert as much land as is shown to contain workable mineral deposits or as much as he can show himself capable of developing. Where limits are specified, they range from 640 acres (Washington) to 6,000 acres (Mississippi). States limiting the acreage covered by each lease generally do not limit the number of leases that a single person may hold.

Lease terms range from 5 years (Virginia) to 10 years (Delaware, Georgia, North Carolina, Oregon) to 20 years (Alaska, California, Texas, Washington). Renewal is available, usually for as long as minerals are produced in paying quantities. Leases are generally assignable in whole or in part, subject to State approval.

Most States require a minimum rent, credited toward a royalty based on production. Minimum annual rents range from \$0.25 per acre in Delaware to \$3.00 per acre in Alaska. Minimum royalties vary from 1/16 of production in Texas to 3/16 in Mississippi. Louisiana provides different royalties for different minerals, ranging from 1/20 to 1/6 of production. *Some* States provide for payment in kind.

The use of leasing income varies greatly. Among other purposes, it may be allocated to the general fund,

Table A-1.—State Mining Laws

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
Alabama	Department of Conservation & Land Resources, State Lands Division	Not specified.	Competitive bidding, tracts up to 5,200 acres.	Bids must be made in the public interest.	Not specified.	Oil and gas leases. No hard minerals.		Ala. Code §9-15-18 (1980).
Alaska	Department of Natural Resources, Lands Division	Exclusive permit up to 5,200 acres, 10-year term. \$3.00 per acre for first two years, \$3.00 per acre each successive year. 300,000-acre limit on permits held by one person.	May be granted non-competitively to holder of prospecting permit for as much land as is shown to contain workable deposits, not to exceed 100,000 acres. Known mineral lands offered by competitive bid/cash bonus, annual rent \$3.00 per acre with credit for expenditures benefiting property. 20-year term, renewable.	Approval from Fish and Game Dept. required	When not otherwise limited by law, nonexclusive use of unoccupied submerged lands shall not be denied to any citizen or resident.	Pilot mining for gold in marine placers off Nome took place in 1985 and 1986. Full-scale mining is planned for 1987. Formerly extensive dredging of shell deposits for cement, now exhausted. No current commercial activity other than oil and gas.		Alaska Stat. §38.05.250 (1984). Alaska Admin. Code tit. 11 ch. 62 (Jan. 1981).
California	State Lands Commission	Exclusive permit on unexplored land, two-year term, renewable for one year. Annual rental of \$2.00 per acre.	Holder of prospecting permit entitled to preference in obtaining a lease. Known mineral lands leased by competitive bid on cash bonus, royalty rate, profit share or other single biddable factor. Minimum annual rent \$1.00 per acre. Twenty-year term, renewable for 10-year terms. No size limit.	All leases must comply with environmental impact report requirements.	Leases may not "substantially impair the public rights to navigation and fishing or interfere with the trust upon which the lands are held."	A few prospecting permits have been issued, but no discoveries have been reported. Some interest in sand and gravel, but no active mining.		Cal. Pub. Res. Code §§6371 and 6890 to 6900 (West 1977) (supp. 1985). Cal. Admin. Code tit. 2552200 to 2205.

Table A-1.—State Mining Laws-Continued

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
Connecticut	Department of Environmental Protection, Water Resource Unit	Not specified.	Permit required for taking material from tidal or coastal waters. Payment required if material used for commercial purpose. Hearing required unless environmental impact not significant. Bond for damage.	“due regard for the prevention and alleviation of shore erosion, the protection of necessary shellfish grounds and fin fish habitats, the preservation of necessary wild-life habitats.”	Must consider development of adjoining uplands, rights of riparian owners, navigation facilities.	None at present time.		Corm. Gen. Stat. Ann. §§22a-383 to 22a-390 (West 1985).
Delaware.	Department of Natural Resources and Environmental Control	Non-exclusive permit, two year term, renewable. No preferential right to lease.	Feasibility of leasing determined after a public hearing. Competitive bid/cash bonus. Primary term of 10 years, continued for as long as production takes place. Maximum area six square miles. Minimum royalty 12.5%, with credit for rent paid. Minimum rent \$.25 per acre. Production must begin within three years of discovery of paying quantity of minerals.	Prior to inviting bids, state must consider whether leasing would create air, water, or other pollution.	State must consider any detriment to people owning property or working in the area, interference with residential or recreational use, esthetic and scenic values of coast, interference with commerce and navigation. State may allow reasonable, non-conflicting uses of lease area.	Some oil and gas exploration is starting. Some inquiries but no activity with hard minerals.	Very detailed statute. Requires consideration and balancing of conflicting interest.	Del. Code Ann. tit. 7 ch. 61 (1983).
Florida	Department of Natural Resources, State Lands Division and Bureau of Geology	Nonexclusive use agreement and geophysical testing permit required. One-year term, renewable for second year.	Lease required for exploration and development, competitive bid/cash bonus.	Coastal waters managed primarily for natural conditions and propagation of fish and wildlife. Adverse activities allowed only if there is no reasonable alternative and adequate mitigation is proposed.	Recreation, fishing, and boating are primary uses. Compatible secondary uses may be allowed if they do not detract from or interfere with primary uses.	Sand and shell extraction on a small scale. A mineral survey of Gulf waters is underway.	Recent applications for oil, gas, and mineral exploration permits prompted a adoption of marine prospecting rules in early 1987.	Fla. Stat. Ann. §253.45 (West, 1975). Fla. Admin. Code ch. 16C-26, 16Q-21, & 18-21.

Table A-1.—State Mining Laws—Continued

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
Georgia	State Properties Commission	State may enter into contract for exploration without competitive bidding. State inspects or surveys land it desires to lease.	Competitive bid, minimum royalty is 1/8 of production, Minimum annual rent rises from \$.10 per acre in the first year to \$1.00 per acre in the fourth and subsequent years. Primary lease term is 10 years.	As far as practicable, prevent pollution of water, destruction of fish, oysters, and marine life.	As far as practicable, prevent obstruction of navigation.	Some extraction on inland waterways but none offshore.		Ga. Code Ann. §50-16-43 (1965).
Hawaii	Land Management Division, Board of Land and Natural Resources	Permit required. No minerals may be removed beyond quantity needed for testing and analysis. Logs and assays turned over to State but kept confidential. Information may be released if permittee does not apply for a lease within six months.	Granted at public auction following public hearing. Term of 65 years or less at Board's discretion. Mining to commence within three years of signing lease, but lease may allow for an additional period during which lessee is required to spend money on research and development to establish economical mining and processing methods for the deposit. Not more than four square miles per lease, but no limit on number of leases held by one person.	Leases must "comply with all water and air pollution control laws"	Applications for mining leases shall be disapproved if the State determines that the existing or reasonably foreseeable future use would be of greater benefit to the State than proposed mining.	No present ocean mining within State jurisdiction. The draft EIS for a proposed marine mineral lease sale was issued by a State-Federal Manganese Crust Work Group in early 1987.		Hawaii Rev. Stat. ch. 182 (1968) 1986 Hawaii Sess. Law 91 (Ocean and Submerged Lands Leasing).
Louisiana	Department of Natural Resources, Mineral Resources Office	State undertakes inspection, including geophysical and geological surveys in areas proposed for leasing,	Offered by competitive bid.	Not specified.	Not specified.	Sand for beach nourishment, soliciting sulphur leases. Interest in salt domes, mainly for sulphur-bearing cap rocks. Some commercial interest in placer deposits of eastern delta.		La. Rev. Stat. Ann. §§30:121 to 30: 179.14 (West 1975) (supp. 1966).

Table A-1.—State Mining Laws—Continued

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
Maine	Maine Geological Survey	One-year term, renewable for five years. Annual rent rises from \$.25 per acre in the first year to \$5.00 per acre in the fifth. Annual report of exploration results required, kept confidential for term of permit.	Exploration claim may be converted to lease after public hearing. Royalty set case by case, "reasonably related to applicable royalty rates generally prevailing."	Post bond to reclaim area and to protect against damage to property outside lease area.	Not specified	No present mining. A copper mine extending into the sea stopped production about 10 years ago. Coastal waters being surveyed to 100 meter isobath. Detailed mineral studies may begin next year after general survey is complete.	Coastal zone restrictions may make seabed mining difficult.	Me. Rev. Stat. tit. 12, §§549 to 558A (1985).
Maryland.	Maryland Geological Survey, Coastal and Estuarine Branch	Not specified.	Permit required for removal and sale of material	Must follow requirements of State wetlands act.	Not specified.	Shell removal in Chesapeake Bay. Past dredging in Baltimore harbor resulted in sale of sand and gravel. Currently mapping sediment distribution on continental shelf. May look at heavy minerals if initial findings warrant. Some spot checking for sand and gravel in Bay, anticipating need to replace on-land sources supplanted by development.	No statute directly regulates. State uses wetlands and coastal zone statutes to set terms for permit.	
Massachusetts	Department of Environmental Quality Engineering	License and public hearing required. Duration and cost not specified.	Lease required, reviewed at public hearing. A thorough and reliable survey of the resources and environmental risks is required. Survey to be made public at least 30 days before hearing.	Mining prohibited in shellfish areas or in shellfish and finfish spawning, nursery, or feeding grounds. Mining prohibited where hazardous wastes have been dumped.	May not unreasonably interfere with navigation, fishing, or conservation of natural resources.	No mining at present, some beach nourishment projects. Nearly all coastal waters are protected as ocean sanctuaries. Area potentially available for mining is around Boston harbor where a 1972-1973 survey indicated a high concentration of sand and gravel.		Mass. Gen. Laws Ann. ch. 12 §§54 to 56 (West 1981). Mass. Admin. Code tit. 310 ch. 29 (1983).

Table A-1.—State Mining Laws—Continued

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
Mississippi	Department of Natural Resources, Bureau of Geology, Mineral Lease Division	Permit required. Data must be provided to State but remains confidential for ten years.	Territorial waters are surveyed and divided into 96 lease blocks up to 6,000 acres in size. Competitive bid/cash bonus. Minimum royalty of 3/16 of minerals extracted. Duration not specified in statute.	Exploration in wildlife management areas or Mississippi Sound or tidelands subject to review by Wildlife Conservation Department. 2 percent of royalties are dedicated to management of waters, land, and wildlife and to clean-up of pollution from exploration or extraction.	Not specified	Oil and gas leases, no hard mineral activity		Miss. Code Ann. §§29-7-1 to 29-7-17 (1965).
New Hampshire.	Department of Resources and Economic Development	Prospecting permit required. One-year term, renewable.	Prospector who discovers a deposit may mine upon filing a claim and obtaining a permit. Lease terms (duration, royalty, special conditions) to be determined upon application for lease.	Permit may be denied if area is unsuitable for mining for environmental reasons or the reclamation plans or pollution prevention measures are insufficient.	Not specified.	No commercial activity. Survey work is being done in State and Federal coastal waters.	Mining statute directed at on-shore activity.	N.H. Rev. Stat. Ann. ch. 12-E (1961).
New Jersey	Tidelands Resource Council	Not specified.	License required to remove sand or other material from state waters. Council determines duration and compensation. Leases are renewable. Riparian owners have priority for leases adjacent to shore.	Not specified.	Not specified.	Sand and gravel being dredged at edge of Ambrose Channel.	Payments go to school trust fund	N.J. Stat. Ann. §§12:3-12, 12:3-21 to 12:3-25.

Table A-1.—State Mining Laws—Continued

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
New York	Land Resources Division, Office of General Services	Not specified.	License required, royalty paid to State based on production	Not specified.	Not specified.	Sand and gravel removal in lower New York harbor has been in abeyance since 1984. The State is in the final stages of preparing a 10- year program for renewed sand and gravel dredging.	The environmental impact statement for a blanket water quality certificate is nearly complete. This would allow the State to lease under a long-term management program rather than react to applications case by case.	N.Y. Pub. Lands Law §22 (McKinney 1986).
North Carolina.	Department of Natural Resources and community development	Not specified.	'Within designated boundaries for definite periods of time . . . upon terms and conditions as may be deemed wise and expedient by the State . . . ' Ten-year term, renewable. Hearing required if significant public interest is affected.	A permit may be denied if it will have "unduly adverse effects on wildlife or fresh water, estuarine, or marine fisheries," or if it will violate air or water quality standards.	All leases or sales made subject to rights of navigation.	Moratorium on mining in State waters since 1979. Recent request to explore for sand and gravel denied due to water quality concerns. Task force being formed to study feasibility of phosphate mining.	Proceeds from sales go to Dept. of Natural Resources for administrative costs and for development and conservation of State's natural resources.	N.C. Gen. Stat. §§74-50 to 74-68, 143 B-389, 146-8 (1985).
Oregon	Division of State Lands	Non-exclusive permit, no preferential right to discovered minerals. Two-year term, renewable. Drilling records must be filed with state. Full exploration record may have to be filed as a condition of granting a lease.	Public hearing to determine if inviting bids would be in the public interest. Competitive bid/cash bonus. Minimum royalty 1/8 of gross production. Minimum annual rent of \$.50 per acre, credited toward any royalty due. Ten-year term, renewed for as long as production takes place. Drilling must begin within five years and production must begin within three years of discovery.	Fish and Wildlife Department must be consulted prior to permit or lease. State must consider scenic values, air or water pollution, danger to marine life or wildlife.	State must consider any detriment to people working, living, or owning property in the area, interference with residential or recreational use, or interference with commerce or navigation.	Survey of ocean resources recently completed. Intensive survey of Gorda Ridge (Federal waters) summer of 1986. No mining activity.	Administrative rules for commercial offshore oil, gas & sulphur surveys adopted June 1986. Rules for hard minerals & academic research are being prepared.	Or. Rev. Stat. §273.551 and 274.705 to 274.860 (1981).

Table A-1.—State Mining Laws—Continued

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
Rhode Island	Coastal Resources Management Council	Not specified.	Permit from Council required.	The Rhode Island Coastal Resources Management Program classifies State waters and coastal areas, establishing permitted uses and development procedures for each type of area.	See Environmental Protection.	No present activity.	The Council has authority over all development in State waters and over land development which relates to or may conflict with or damage the coastal environment. Mining is prohibited on beaches and dunes and in tidal waters and in salt ponds.	R.I. Gen. Laws tit. 46, ch. 23 (1985).
South Carolina	Land Resources and Conservation Commission	Not specified.	Lease required. Minimum royalty of 1/8 of production.	All leases are subject to conservation laws.	Not specified.	No mining or exploration at present time. There are known phosphate deposits in shallow water, but no commercial interest at present.		S.C. Code Ann. tit. 10, ch. 9 (Law Co-Op. 1976).
Texas	General Land Office, Petroleum and Mineral Development	Exclusive permit up to 640 acres. One-year term, renewable for up to four additional years. Minimum annual rent of \$.25 per acre. Quarterly report required, information remains confidential for as long as prospecting or mining permit is held.	Proposed lease must evidence discovery of a commercial deposit and offer terms comparable to the best lease in the area. Primary term of 20 years and for as long thereafter as minerals are produced in paying quantities. First year rental at least \$2.00 per acre. Subsequent years, \$1.00 per acre against a minimum royalty of 1/16 of value of minerals produced. Monthly royalty report required.	Lease may include any provisions considered "necessary for protection of the interests of the State."	Not specified.	No hard mineral activity. No known resources other than oil and gas in state waters.		Tex. Nat. Res. Code ch. 53 (1986). Tex. Admin. Code tit. 31 §§13.31 to 13.36 (1979).

Table A-1.—State Mining Laws—Continued

State	Agency	Exploration	Mining permit	Environmental protection	Conflicting uses	Current or past activity	Comments	Statutes and regulations
Virginia	Marine Resources Commission	Not specified.	Permit required for removal of material. Lease term five years, renewable. Royalty not less than \$.20 nor more than \$.60 per cubic yard of material removed.	Not specified.	No lease may interfere with public rights to fishing, fowling, or taking of shellfish. Seasonal dredging limitations may be imposed to lessen adverse effects on fisheries.	No current mining. Ongoing research reveals good possibility of commercial titanium-bearing minerals in State and Federal waters.	The State is preparing a subaqueous minerals management plan and is combining field research with a legislative program to meet future development needs.	Va. Code §j62.1-3 and 62.1-4 (1986). Subaqueous Guidelines, Va. Marine Resources Comm. (1986).
Washington	Department of Natural Resources	Lease required, two year term, renewable. Annual rent of \$.25 per acre. Convertible to mining contract. Holder of prospecting lease has preference to mining contract. Lease no less than 40 acres nor more than 640 acres, no limit on number of leases per person.	Twenty-year term, renewable. First four years are prospecting or exploration period.	Work must be "consistent with general conservation principles."	If land to be mined has already been leased for another purpose, lessee is to be compensated for any damage caused by mining or prospecting.	Some prospecting in black sands area at mouth of the Columbia River.		Wash. Rev. Code Ann. §§79.01.616 to 79.01.650 (1985) Wash. Admin. Code ch. 332-16 (1977).

SOURCE: Office of Technology Assessment, 1987,

to education, to administration of the mining program, to resource conservation, to management and research programs, to the agency having management responsibility for the leased property, and to local governments.

Many States require work to proceed at a minimum rate. Some simply require “diligence” or a “good faith effort” or may specify a time limit for starting production (3 years in Delaware and Hawaii, 4 years in Washington). Other States require minimum expenditures for development or improvements (\$2.50 per acre annually in Washington). In Hawaii, the lease may provide for an initial research period during which the lessee is required to undertake research and development to establish economic mining and processing methods for the mineral deposit.

Environmental Protection:

Environmental regulations may require preparation of an environmental impact analysis for each project. Some States prepare a blanket analysis as part of a comprehensive management program, anticipating individual applications. Many statutes identify special areas to be protected or avoided. These include shellfish beds and spawning, nursery, or feeding grounds (Connecticut, Georgia, Massachusetts, and Virginia), areas that are part of the beach sand circulation system, and areas where hazardous wastes have been dumped (Massachusetts). Environmental review also requires coordination with other agencies and statutes. Among these are fish and wildlife departments, air and water quality laws, and coastal zone management agencies.

Conflicting Uses:

Some States identify certain uses as primary or protected, and conflicting uses are prohibited or restricted. Fishing and navigation rights are most commonly mentioned as protected. Virginia may impose seasonal dredging limitations to protect commercially or recreationally important fisheries. Florida gives priority to maintaining natural conditions and propagation of fish and wildlife. Recreation, fishing, and boating are primary uses. Rhode Island State waters are classified by use (from conservation areas to industrial waterfronts) with permitted activities and development spelled out for each class. Connecticut, Delaware, and Oregon require that impacts on upland property owners or users be considered. Hawaii would not allow mining if the existing or reasonably foreseeable use of the property would be of greater benefit to the State. Delaware and Oregon require scenic values to be considered. Pipelines, cables, and aids to navigation are protected by minimum setbacks. Setbacks from shore are specified in some cases, Florida requires oil and gas leases to be

at least 1 mile offshore. Other leases are prohibited from the 3-foot low water depth landward to the nearest paved road. Massachusetts prohibits mining in nearshore areas that supply beach sediments, generally to the 80-foot depth contour.

Public Participation:

About half the States require published notice of a proposed lease, either in a statewide newspaper or in the affected county or both. About one-quarter of the States require a public hearing before granting a lease. Two require a hearing prior to granting a prospecting permit. Massachusetts requires an applicant to disclose “reliable information as to the quantities, quality and location of the resource available . . .”

Regulation and Enforcement:

All States reserve the right to inspect the work site and the prospecting or mining records. Exploration results, development work, and materials mined and sold must be reported. Reporting periods vary from monthly to annual.

The States generally require bonds or insurance to cover faithful performance of the contract, reclamation of the site, and cleanup of pollution resulting from exploration or mining and to indemnify the State against claims arising from the project.

Permits or leases may be revoked for failure to diligently pursue exploration or mining, for failure to meet reporting requirements, or for failure to pay rents or royalties. Revocation is generally an administrative act by the managing State agency and is subject to administrative or judicial appeal. Revocation may be partial, allowing the operator to keep production sites not in default.

Current Activities

There is little offshore mining in State waters at the present time. Sand, gravel, and shell are the only materials currently with significant commercial markets. Existing operations include sand and gravel dredging on the New York and New Jersey sides of Ambrose Channel in lower New York harbor, sand and shell extraction in Florida, shell extraction in Chesapeake Bay, and a pilot gold dredging project off Nome, Alaska. In addition, there are non-commercial beach nourishment programs using offshore sand. The absence of other activity is variously attributed by State officials to a lack of mineral resources, a lack of information about any resources that may exist, or to the higher cost of ocean mining compared to onshore mining of the same material.

The general lack of mining activity means that few of the statutes have been actually tested. But there are several States where recent exploration has spurred a review of existing laws. The Virginia legislature established a Subaqueous Minerals and Materials Study Commission. Now in its third year, the Commission's mandate is 'to determine if the subaqueous minerals and materials of the commonwealth exist in commercial quantities and if the removal, extraction, use, disposition, or sale of these materials can be adequately managed to ensure the public interest. The commission is preparing recommendations for systematic exploration of seabed resources (supplementing the present cooperative effort by the Minerals Management Service, Virginia Division of Mineral Resources, and the Virginia Institute of Marine Science), a subaqueous minerals management plan, and statutory changes (some already adopted) to guide future development.

Public debate over a 1984 permit for seismic studies in the Columbia River prompted Oregon to review its laws. In particular, there was concern with protecting established fishing and navigation interests, maintaining the quality of the marine environment, and providing adequate public input into what had been an in-house agency review process. The Division of State Lands adopted administrative rules for commercial offshore oil, gas, and sulphur surveys in June 1986. It is now preparing administrative rules covering geologic and geophysical surveys by commercial hard mineral prospectors and for academic research. A recent change in Oregon State law permits the Division of State Lands to enter into exploration contracts whereby a prospector would have a preference right to develop and recover minerals should the State move to actually permit ocean mineral development.

Florida adopted marine prospecting rules in January 1987 to cope with a growing number of applications to explore for oil, gas, and other minerals in State waters.

The North Carolina Office of Marine Affairs is beginning a long range project to develop a marine resources management program.

Conclusion

While the States are for the most part inexperienced in managing seabed minerals, they have the ability to develop effective programs. Knowledge and resources from established coastal zone management, water quality, and hydrocarbon development can be readily

tapped. Expertise is also available from academic marine science programs and State geological survey offices. As projects continue, the States have used them as a basis for reviewing their existing management programs and for making improvements.

Since 1983, the Minerals Management Service has been funding State marine minerals research under an annual cooperative agreement with the Texas Bureau of Economic Geology of the University of Texas at Austin. All of the coastal States and Puerto Rico have participated in this program at various times since it began. State research projects focus on both petroleum and hard minerals and range from general surveys of a State's seabed to detailed geologic studies and economic evaluations of specific mineral occurrences. Some of the research extends into Federal waters. The agreement for the fifth year of this program (fiscal year 1987) is now being prepared. Funding has been approximately \$550,000 annually, with about 18 States participating each year.

While a State's role in the Exclusive Economic Zone has yet to be defined, State-Federal task forces have been formed for areas where promising deposits have been found. The task forces' mission is to appraise the commercial potential of the deposits and to oversee the preparation of environmental impact statements for leasing proposals. Such task forces have been formed with Hawaii (cobalt-rich manganese crusts), Oregon and California (polymetallic sulfides in the Gorda Ridge), North Carolina (phosphorites), Georgia (heavy minerals), and the Gulf States (sand, gravel, and heavy minerals off Alabama, Mississippi, Texas, and Louisiana). The functioning of these task forces may provide a needed test of Federal-State cooperation.

If sand and gravel and other nearshore deposits are likely to be the first to be developed, it is also likely that operations will overlap State and Federal jurisdiction. Even activities entirely in Federal waters may concern the States because of environmental effects extending beyond the mining site, economic and social effects of onshore support facilities, or effects on local fishing, navigation, and recreational interests. Proposed mining operations would benefit from a system of compatible Federal and State requirements. Federal support for work by the States can take two paths: continued support for field research to gain better knowledge of marine resources, and support for legislative efforts to develop consistent systems for environmentally sound and economically feasible seabed mining.