



**Proposed Final
Outer Continental Shelf
Oil & Gas Leasing Program
2002-2007**

April 2002

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Preface

Management of the oil and gas resources of the Outer Continental Shelf (OCS) is governed by the OCS Lands Act, as amended, which sets forth procedures for leasing, exploration, and development and production of those resources. The Minerals Management Service (MMS) is the bureau within the Department of the Interior that is responsible for implementing the requirements of the OCS Lands Act. Section 18 of the Act calls for the preparation of an oil and gas leasing program indicating a 5-year schedule of lease sales designed to best meet the Nation's energy needs.

The MMS is in the process of preparing a 5-year program for 2002-2007. This document constitutes the proposed final program, which is the third and last in a series of leasing proposals developed before the Secretary of the Interior may take final action to approve the new 5-year program for 2002-2007. The document consists of the parts described below.

Part I summarizes the proposed final program as decided by the Secretary of the Interior. It briefly relates the location and timing of OCS oil and gas lease sales proposed for 2002-2007 and discusses procedures for assuring the receipt of fair market value for leases as required by section 18.

Part II describes the framework for developing the new program. It discusses the substantive and procedural requirements that are in place for preparing a program and describes the MMS approach to meeting those requirements. This includes a discussion of the criteria relating to OCS oil and gas resources and environmental and social considerations that section 18 requires be considered in deciding where and when to propose lease sales. Part II also refers to the environmental assessment process under the National Environmental Policy Act (NEPA).

Part III presents the options that the MMS prepared as a result of its analysis of the section 18 criteria. The options form the basis from which the Secretary chooses the proposed final program for 2002-2007. Each set of options is prefaced with a brief summary of the relevant results of the section 18 analysis and the comments that the MMS received from interested and affected parties.

Part IV presents the detailed section 18 analysis executed by the MMS to develop the options presented to the Secretary.

The appendix to this document summarizes all correspondence received by the MMS in response to its request for comments on the proposed program that was issued in October 2001. The appendix also includes a summary of programmatic comments that were given in testimony at public hearings on the draft Environmental Impact Statement (EIS).

ABBREVIATIONS

A

ADGC	Alaska Division of Governmental Coordination
AEWC	Alaska Eskimo Whaling Commission
AMCC	Alaska Marine Conservation Commission
ANWR	Arctic National Wildlife Refuge
AOGA	Alaska Oil and Gas Association
API	American Petroleum Institute

B

bbl	barrels
BBO	billion barrels of oil
BBOE	billion barrels of oil equivalent
Btu	British thermal unit

C

CFR	Code of Federal Regulations
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E

EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESI	Environmental Sensitivity Index
ESPIS	Environmental Studies Program Information System

F

FR	Federal Register
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G

GOM	Gulf of Mexico
GRASP	Geologic Resource Assessment Program

M

Mcf	thousand cubic feet
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MM	million
MMS	Minerals Management Service
MT	metric ton

N

NAAQS	National Ambient Air Quality Standard
NARDM/ CME	Natural Resource Damage Assessment Model/Coastal and Marine Environments
NEPA	National Environmental Policy Act
NEPDG	National Energy Policy Development Group
NEV	Net Economic Value
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOIA	National Ocean Industries Association
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NSB	North Slope Borough

O

OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act

T

Tcf	trillion cubic feet
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I. SUMMARY OF DECISION—PROPOSED FINAL PROGRAM FOR 2002-2007

Introduction

Section 18 of the Outer Continental Shelf (OCS) Lands Act requires the Secretary of the Interior to prepare and maintain a schedule of proposed OCS oil and gas lease sales determined to “best meet national energy needs for the 5-year period following its approval or reapproval.” Preparation and approval of a 5-year program must be based on a consideration of principles and factors specified by section 18. Those criteria, and the manner in which they have been considered in the preparation of the proposed final program for 2002-2007, are summarized in part II.

This program is the last of three proposals that must be developed and issued before a new 5-year program may be approved to succeed the current one ending on June 30, 2002. It follows public review of the October 2001 proposed program and takes into account the comments received concerning that proposal. The proposed program was preceded by the July 2001 draft proposed program. The full 5-year program preparation process is described in part II.

The proposed final program schedules a total of 20 lease sales in eight OCS planning areas, carrying forward the provisions of the previous proposals with one adjustment to the proposed Chukchi Sea/Hope Basin sale that is discussed below. Maps 1 and 2 show the areas proposed for leasing (program areas), and figure 1 gives the location and timing of the proposed lease sales.

Lease Sale Schedule

Alaska Region

In the Alaska Region the proposed final program schedules multiple lease sales in the Beaufort Sea and Cook Inlet Planning Areas, which are the two areas of most interest to the oil and gas industry. Multiple offerings are consistent with the Governor of Alaska’s recommendations and the State’s administration of its offshore oil and gas program. Portions of these areas that have been excluded from previous OCS programs and sales are excluded as recommended by the Governor.

The Norton Basin Planning Area is included on the schedule as a potential source of natural gas for local residents and businesses, and it would be offered under a new approach to OCS leasing. The Norton Basin sale is proposed for 2003, but before the Minerals Management Service (MMS) proceeds, it will issue a request for nominations and

comments and will move forward only if environmentally acceptable blocks are nominated by industry. If this does not occur, the sale will be postponed and a request for nominations and comments will be issued again the following year (and so on through the 5-year schedule until the sale is held or the schedule expires).

The Chukchi Sea and Hope Basin Planning Areas are combined for leasing as they have been in previous programs. Two lease sales are proposed to pursue the high resource potential of the Chukchi Sea area in conjunction with potential natural gas resources extending into the adjacent Hope Basin area. The proposed final program adjusts the proposal for the two Chukchi Sea/Hope Basin lease sales by converting them to the special category described above for Norton Basin. Under the special sale process the MMS would issue a request for nominations and comments and would proceed only if environmentally acceptable blocks are nominated by industry. Otherwise, the sale process would be deferred annually until one or more of the proposed Chukchi Sea/Hope Basin sales are held or the program ends.

Maps 3-6 in part III depict the specific Alaska OCS areas proposed for lease sales.

Gulf of Mexico Region

The proposed final program schedules annual areawide lease sales in the Central and Western Gulf of Mexico (GOM) Planning Areas and two lease sales in the Eastern GOM reduced Sale 181 area comprising 256 blocks located in deep water adjacent to the Central Gulf Planning Area.

Maps 7 and 8 in part III depict the specific Gulf of Mexico OCS areas proposed for lease sales.

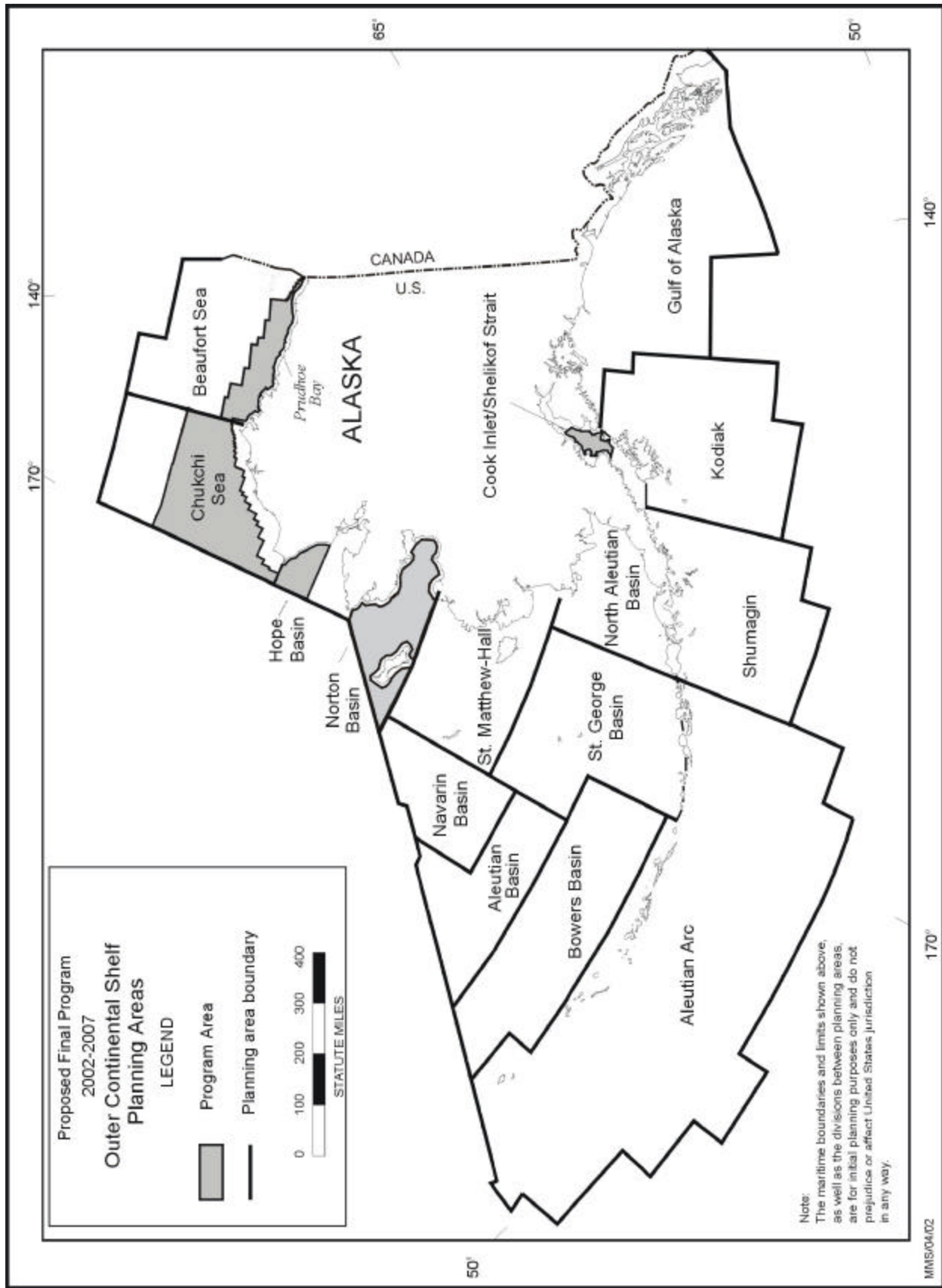
Assurance of Fair Market Value

Section 18 of the OCS Lands Act requires receipt of fair market value for OCS oil and gas leases and the rights they convey. The proposed final program provides for setting minimum bid levels by individual lease sale based on market conditions and for continuing to use a two-phase postsale bid evaluation process that has been in effect since 1983 to meet this requirement.

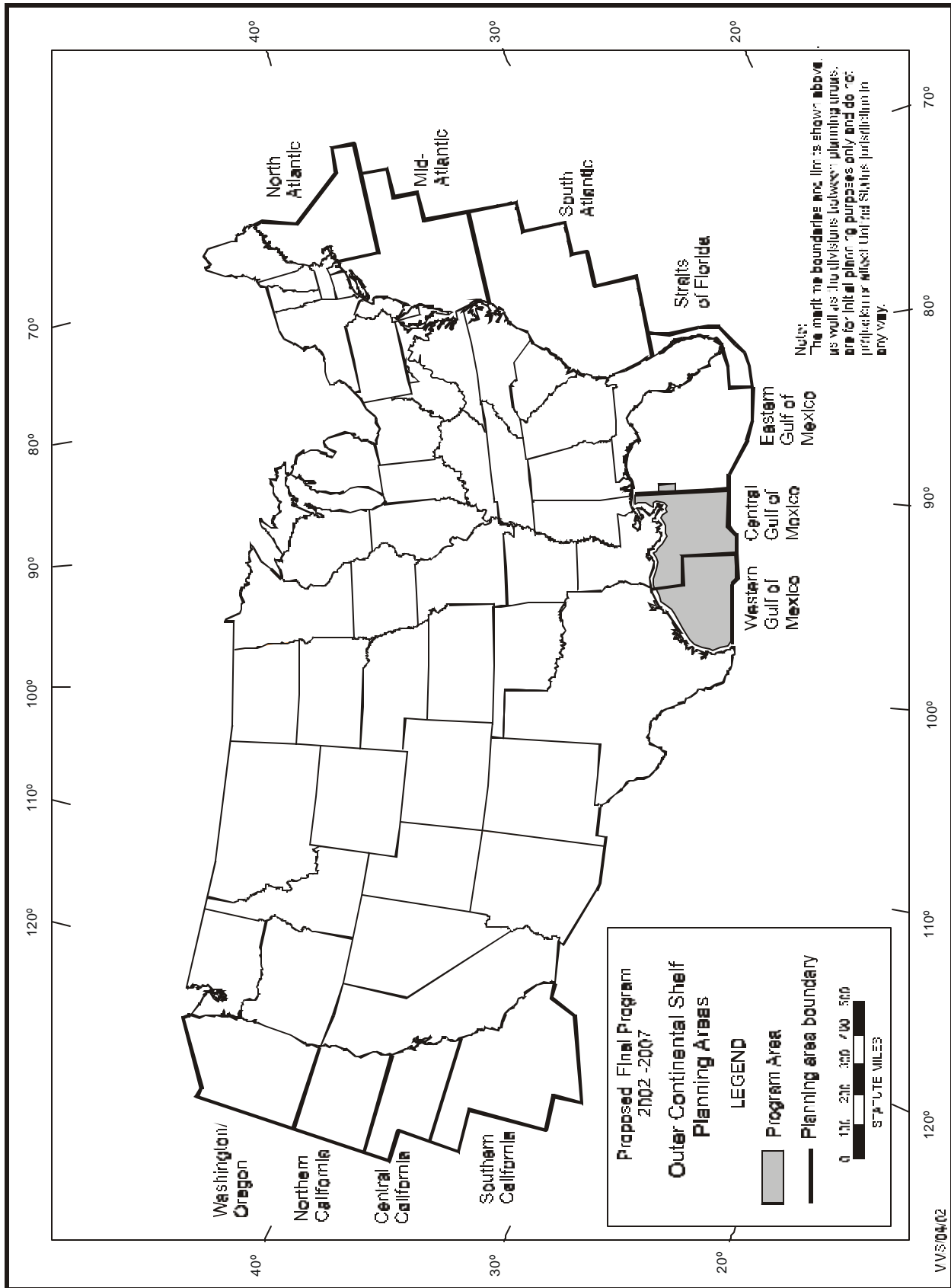
Figure 1. Proposed Final Program for 2002-2007—Lease Sale Schedule

Sale No.	Area	Year
184	Western Gulf of Mexico	2002
185	Central Gulf of Mexico	2003
186	Beaufort Sea	2003
187	Western Gulf of Mexico	2003
188*	Norton Basin	2003
189	Eastern Gulf of Mexico	2003
190	Central Gulf of Mexico	2004
191	Cook Inlet/Shelikof Strait	2004
192	Western Gulf of Mexico	2004
193*	Chukchi Sea/Hope Basin	2004
194	Central Gulf of Mexico	2005
195	Beaufort Sea	2005
196	Western Gulf of Mexico	2005
197	Eastern Gulf of Mexico	2005
198	Central Gulf of Mexico	2006
199	Cook Inlet/Shelikof Strait	2006
200	Western Gulf of Mexico	2006
201	Central Gulf of Mexico	2007
202	Beaufort Sea	2007
203*	Chukchi Sea/Hope Basin	2007

* Sales to be held under the special sale process described above.



Map 1. Alaska



Map 2. Lower 48 States

II. FRAMEWORK FOR FORMULATING THE PROPOSED FINAL PROGRAM FOR 2002-2007

A. Analytic Approach

The analysis for formulating the proposed final program for 2002-2007 focuses on the size, timing, and location of leasing and the provisions for assuring fair market value that were adopted in the July 2001 draft proposed program and in the October 2001 proposed program. Those previous proposals identified for further leasing consideration seven *program areas* consisting of all or parts of eight of the Outer Continental Shelf (OCS) planning areas (see maps 1 and 2). This proposed final program analysis examines and compares those selected areas in light of the criteria of section 18 of the OCS Lands Act. The same areas are analyzed in the final Environmental Impact Statement (EIS) prepared to assess the effects of the proposed program pursuant to the National Environmental Policy Act (NEPA).

Development of a new 5-year program for 2002-2007 is based on analysis of information relating to the criteria of section 18 of the OCS Lands Act, which governs preparation and maintenance of the Federal offshore oil and gas leasing program. Parts III and IV of this document discuss in detail the sources of information and the methodologies applied for the proposed final program analysis. Also, as stated in the previous program proposals, much information is incorporated by reference. In addition to the information referenced in those proposals, the proposed final program incorporates the materials listed below.

- Decision Document for the Proposed Program for 2002-2007 (October 2001)
- Final EIS for the Proposed Final Program for 2002-2007
- Economic Analysis for the 5-Year OCS Oil and Gas Leasing Program 2002-2007: Theory and Methodology (MMS 2001-088)
- Energy Alternatives and the Environment, Revised August 2001 (MMS 2001-096)
- Annual Energy Outlook 2002 [DOE/EIA-0383(2002), December 2001]

B. Procedural Requirements

The key steps in preparing a new 5-year program under section 18 of the OCS Lands Act and section 102(2)(C) of NEPA are described below.

Request for Comments and Suggestions

On December 12, 2000, the Minerals Management Service (MMS) published in the *Federal Register* (65 FR 59328) a notice requesting comments and suggestions on the preparation of a new program for 2002-2007 and announcing the start of scoping for the 5-year program EIS. The MMS also sent letters to the governors of affected States, the heads of interested Federal agencies, and potentially affected Alaska Native Tribes requesting their input.

Draft Proposed Program

On July 23, 2001, the MMS issued a draft proposed program for 2002-2007, which included a summary of all comments received in response to the initial request for comments and suggestions. A notice requesting comments on the draft program was published in the *Federal Register* (66 FR 38314), and the comment period closed on September 21, 2001.

Proposed Program and Draft EIS

On October 26, 2001, the MMS issued the proposed program and draft EIS. The proposed program was based on further section 18 analysis and consideration of comments received on the draft proposed program, which were summarized in an appendix, and it affirmed the Secretary's previous decision for the draft proposal. The accompanying draft EIS analyzed the potential environmental effects of the proposal and reasonable alternatives. The proposed program and draft EIS were announced in the *Federal Register* (66 FR 54279) and submitted to the Congress, the Attorney General, the governors of affected States, and other interested and affected parties for a 90-day comment period that closed on January 24, 2002. The MMS sent the proposed program and draft EIS to affected States along with letters to the Governors providing written dispositions of any comments they had submitted concerning the draft proposed program.

Proposed Final Program and Final EIS

Preparation of a proposed final program is based on further section 18 analysis and consideration of the comments received by the MMS concerning the proposed program. The proposed final program is announced in the *Federal Register* and submitted to the President and the Congress along with copies of any comments received and an explanation of the disposition of any recommendations received from affected State, Tribal, and local governments and the Attorney General. The MMS issues a final EIS with the proposed final program.

Program Approval

Sixty days after the proposed final program is submitted to the President and the Congress, the Secretary may approve the new 5-year program.

C. Substantive Requirements

Section 18 sets forth specific requirements to guide 5-year program formulation. Analysis of information relating to section 18 criteria produces results that the MMS uses to develop reasonable options from which the Secretary may select a schedule of proposed lease sales indicating, as precisely as possible, the size, timing, and location of leasing activity determined to best meet national energy needs. A brief overview of those section 18 requirements is presented below.

Energy Needs

Section 18(a) states that the purpose of the 5-year OCS oil and gas leasing program is to help meet the Nation's future energy needs. Part IV.A presents an analysis of anticipated energy needs. The analysis includes discussions of the U.S. Department of Energy's projections of national energy needs according to *Annual Energy Outlook 2001 (December 2000)*, the potential contribution of OCS oil and gas production in meeting those needs, alternatives to OCS production, and considerations relating to regional energy needs. A very brief assessment of the more recently issued *Annual Energy Outlook 2002 (December 2001)* also is given.

Environmental Considerations

Section 18(a)(1) provides that in addition to examining oil and gas resources, the Secretary is required to consider the values of other OCS resources and the potential effects that OCS oil and gas activities could have on those resources and on the marine, coastal, and human environments. The findings of the final EIS relating to the leasing options considered in this document are summarized in the discussions of options in part III.

Factors for Determining Timing and Location of Leasing

Section 18(a)(2) lists eight factors that are to be considered in deciding the timing and location of oil and gas activities among the different areas of the OCS. While some of the factors lend themselves to quantification to facilitate comparison among planning areas, others do not and need to be considered qualitatively. The eight factors provided in 18(a)(2)(A) through (H) are listed below along with references to the parts of the proposed final program analysis that address them.

(A) Geographic, Geological, and Ecological Characteristics

The main source of information on geographic, geological, and ecological characteristics of the OCS planning areas considered in preparing the proposed final program is the final EIS. Chapter III of the EIS describes the physical, biological, and socioeconomic environments of each OCS region. Chapter IV describes the effects that the size, timing, and location decisions would have on those resources under five different alternatives. Alternative 1 is the proposal, which is identical to the two previous program proposals issued in July and October 2001. Alternatives 2-5 examine a slower pace of leasing, exclusion of some areas included in the proposal, a faster pace of leasing, and no action (i.e., no 5-year program for 2002-2007). Summaries of the EIS findings are provided in part III of this decision document.

Other sources of information include recent NEPA documents prepared for leasing and operations activities; the most recent MMS cumulative effects report (MMS 97-0027), the 1994 National Research Council (NRC) report concerning information for Alaska OCS decisions, scientific study results, which are reported in the environmental studies program information system (ESPIS) database; and information submitted or cited by commenters.

(B) Equitable Sharing of Developmental Benefits and Environmental Risks

Part IV.C analyzes the equitable sharing factor. It discusses the analyses and findings of previous 5-year programs and cites new developments and their potential influence on the nature and distribution of benefits and risks associated with the size, timing, and location options available for consideration. The discussion includes new information generated by MMS regional economic impact models and references to relevant information in the draft EIS. The equitable sharing analysis also describes the significant effect of the existing long-term withdrawal of areas from leasing. The withdrawal is first described in part III.A.

(C) Location with Respect to Regional and National Energy Markets and Needs

Part IV analyzes regional and national energy needs. Chapter III of the final EIS describes the socioeconomic environment for each OCS region, including the existing oil and gas infrastructure and its relationship to new leasing. The recent lease sale EISs cited above also provide useful information relating to regional distribution and processing of OCS oil and gas.

(D) Location with Respect to Other Uses of the Sea and Seabed

The final EIS examines competing uses in its descriptions of the physical, biological, and socioeconomic environments for each OCS region in Chapter III and its discussion of environmental consequences in Chapter IV. Relevant information from the final EIS is summarized in part IV of this document. Additional sources of information include MMS cumulative effects reports, the recent lease sale EISs and other NEPA documents cited, environmental study results (ESPIS), and information submitted or cited by commenters.

(E) Interest of Potential Oil and Gas Producers

Part IV.C describes the interest that industry commenters have indicated in leasing areas of the OCS. The discussions of size, timing, and location options in part III also include summaries of industry interest, and the appendix summarizes all comments on the proposed program that were received from oil and gas companies and associations.

(F) Laws, Goals, and Policies of Affected States

The discussions of size, timing, and location options in part III include summaries of the relevant laws, goals, and policies—and federally approved coastal zone management programs and policies—that State governments cited in comments on the proposed program. The appendix summarizes all comments received from State governors and government agencies.

(G) Relative Environmental Sensitivity and Marine Productivity

Part IV.C analyzes environmental sensitivity and marine productivity based on the latest available information from the National Oceanic and Atmospheric Administration (NOAA) and the National Marine Fisheries Service (NMFS).

(H) Environmental and Predictive Information

The main source of environmental and predictive information is the final EIS. Chapter III of the EIS describes the affected environment of the OCS regions being considered for leasing, and Chapter IV discusses potential environmental effects of the proposed final program and alternatives. Additional sources of information include MMS cumulative effects reports, the recent lease sale EISs and other NEPA documents cited above, environmental study results (ESPIS), and information submitted or cited by commenters.

Balancing Potential Environmental Damage, Discovery of Oil and Gas, and Adverse Impact on the Coastal Zone

Section 18(a)(3) requires the Secretary to render decisions on the timing and location of OCS leasing that strike a balance between environmental risk and developmental potential based on a consideration of the factors comprising section 18(a)(2) listed above. Part IV.C addresses the balancing requirement by presenting a comparative analysis of the planning areas available for leasing consideration.

The centerpiece of the comparative analysis is an estimation of net social benefits for each program area that is derived by calculating the value of oil and gas resources minus the cost to industry and the environmental and social costs of developing those resources (with consumer surplus benefits then added). The comparative analysis also ranks the program areas according to quantified information relating to environmental sensitivity and marine productivity and indicates the interest of potential oil

and gas producers. The other section 18(a)(2) factors do not lend themselves as readily to quantification and are treated qualitatively. The comparative analysis also examines additional qualitative information pertaining to industry interest, the findings and purposes of the OCS Lands Act Amendments of 1978 (Title II), the comments and recommendations of interested and affected parties, and other information relevant to striking a proper balance under section 18(a)(3).

The statute does not specify what the balance should be or how the factors should be weighed to achieve that balance, leaving to the Secretary the discretion to reach a reasonable determination under existing circumstances.

D. Judicial Guidance

The new 5-year program will be the sixth prepared by the Department of the Interior. The first three programs prepared and approved under section 18 were challenged in court—in 1980, 1982, and 1987. The U.S. Court of Appeals for the District of Columbia Circuit decided all of those lawsuits. The new 5-year program is being prepared in accordance with guidance provided in those decisions, which are cited as follows:

California I [California v. Watt, 688 F2d 1290 (D.C. Cir. 1981)];

California II [California v. Watt, 712 F2d 584 (D.C. Cir. 1983)];
and

NRDC [Natural Resources Defense Council, *et al.* v. Hodel, 865 F2d 288 (D.C. Cir. 1988)].

No lawsuits were filed against the 5-year programs approved for 1992-1997 and for 1997-2002.

III. PROPOSED FINAL PROGRAM OPTIONS

A. Size, Timing, and Location Options

Introduction

This part presents the options from which the Secretary chooses the size, timing, and location of leasing for 2002-2007. The MMS has formulated these options based on its consideration of information relating to the section 18 criteria and based on the results of consultation with interested and affected parties.

As noted in the previous program proposals, the OCS is divided into 26 planning areas. Eight whole planning areas located off the east and west coasts and off Alaska, as well as most of the Eastern Gulf of Mexico Planning Area located off Florida, are withdrawn from disposition by leasing until after June 30, 2012. Since the withdrawn areas would not be available for lease sales scheduled in the 5-year program for 2002-2007, they have not been analyzed in light of the section 18 criteria, and no program options have been considered for them. Other planning areas also were excluded from leasing in the previous program proposals, mainly because they have low resource value and are of little or no interest to the oil and gas industry at this time. None of the areas excluded from leasing in the draft proposed program and proposed program is analyzed in this document. This approach is consistent with *California II*, which found that “If the Secretary has already determined that no leasing activity will occur in a particular area there is no need to fully evaluate that area.” Maps 3-8 show the program areas identified for lease sales in the previous proposals and analyzed further for the proposed final program.

The section 18 objectives of formulating a program to best meet national energy needs and to assure the receipt of fair market value for leases and the rights they convey are significant determinants of the size, timing, and location options. The analyses of net social benefits and the factors specified by section 18(a)(2) provide a solid basis for developing options. Those analyses, presented in part III, examine economic, social, and environmental values; oil and gas resource potential and industry interest; distribution of benefits and risks; competing uses of the OCS; regional energy needs; and the laws, goals, and policies of affected States. By considering that information for each area, the MMS is able to weigh different resources, values, and policies in formulating reasonable options that can be selected by the Secretary to achieve the balance required by section 18(a)(3).

Additional Considerations

The location and size of lease sales in a 5-year program are largely determined by the configuration of planning areas and program areas for leasing consideration. The OCS planning areas initially were established following the enactment of the OCS Lands Act Amendments of 1978 and have been reconfigured several times over the past 20 years (the current boundaries of all 26 planning areas are delineated in detail in the MMS publication *Planning Area Descriptions of the Outer Continental Shelf as of April 2002*). The entire Central and Western Gulf of Mexico Planning Areas (with the exception of blocks in and around the Flower Garden Banks National Marine Sanctuary) historically have been included in OCS lease sales. Other planning areas have been subdivided to identify smaller areas of leasing consideration within them (i.e., program areas). Previous 5-year programs have delineated program areas within Alaska OCS planning areas proposed for leasing and within the Eastern Gulf of Mexico Planning Area.

The proposed final program options provide for scheduling lease sales in the Central and Western Gulf of Mexico Planning Areas and in defined program areas off Alaska and in the Eastern Gulf. Each lease sale that is scheduled in the approved 5-year program for 2002-2007 will be subjected to a prelease evaluation and decision process in which interested and affected parties may participate. That process examines the proposed lease sale, starting with the area identified as available for leasing consideration in the 5-year program, and considers reasonable alternative lease sale configurations within that area (i.e., no sale may be larger than the original proposal). The prelease process leads to the final decision on the size, timing, and location of each OCS lease sale.

Size, timing, and location options should be designed to mitigate drainage of Federal oil and gas resources on unleased lands and associated revenue losses that could occur as a result of existing or anticipated development activity on adjacent State leases. Acquisition of new geological and geophysical data is a relevant consideration in that such data become available sooner, more frequently, and more predictably for the areas scheduled for lease sales in a 5-year program. Finally, the scheduling of lease sales must allow time for orderly and deliberate preparation for each sale, including the acquisition and analysis of relevant scientific information and the completion of the prelease evaluation and decision process.

Proposed Final Program Options for Scheduling Lease Sales

This decision document offers options for scheduling lease sales for the eight areas proposed for lease sales in the draft proposed program and

carried forward in the proposed program. Summaries of the key results of comparative analysis and the comments of interested and affected parties precede each set of lease sale options. The comparative analysis summaries are condensed from part IV.C, and the comment summaries are adapted from the appendix.

A discussion of the individual options follows each set. Each leasing option is discussed in terms of the value of benefits that would be anticipated as a result of the proposed leasing and ensuing production, as well as in terms of the potential environmental impacts that could be expected. As explained in part IV.C, the value of benefits provided for each option relates to those resources that are reasonably expected to be discovered and produced given the size and timing of the lease sale(s) specified in each option—anticipated production—which differs from the estimates generated by the total net benefits analysis. As explained in the draft EIS and in *Energy Alternatives and the Environment (MMS 2001-096)*, it should be noted that in every instance the “No Sale” option would entail broader environmental and economic effects (including opportunity costs) in addition to the local environmental impacts that are summarized. Such effects, which mainly are related to replacing forgone OCS production by turning to other sources of energy, include the negative environmental impacts that could occur from importing oil from other countries, as well as the negative economic effects on the Nation’s balance of trade that would result.

The oil spill probabilities that are provided have been calculated based on the amount of oil that could be discovered and produced, as well as historical oil spill rates that have been compiled for over 20 years. The historical rates have shown that the amount of oil produced determines the probability and potential number of spills, not the size of the area being offered for lease, the number of leases conveyed, nor the extent of acreage that is leased. Thus, a small group of blocks in a small program area overlying one or more large oil-bearing formations will have a greater oil spill probability than a larger group of blocks in a larger program area overlying one or more smaller oil-bearing formations.

Relationship of the Proposed Final Program Options to the Final EIS Alternatives

The draft EIS analyzes five alternatives that correspond to individual lease sale options as follows:

- Alternative 1—The Proposed Action—corresponds to Option 1 for each area and reflects the decisions made for the draft proposed program and proposed program. The term *proposal* is synonymous. (Option 4 for

Chukchi Sea/Hope Basin, which has been added for the proposed final program, is considered to be essentially the same as Option 1 and also corresponds to this alternative.)

- Alternative 2—Slow the Pace of Leasing—would modify the proposed action by reducing the number of sales scheduled in the Beaufort Sea, Chukchi Sea/Hope Basin, Cook Inlet, and Eastern Gulf of Mexico program areas (Option 3 for each of these areas in this decision document).
- Alternative 3—Exclude Some Planning Areas—would modify the proposal by excluding entirely the Hope Basin, Norton Basin, and Eastern Gulf of Mexico Planning Areas (Option 2 for Norton Basin and the Eastern Gulf and Option 5 for Hope Basin).
- Alternative 4—Accelerated Leasing—would modify the proposal by adding sales in the Beaufort Sea and Eastern Gulf of Mexico program areas (Option 4 for these areas).
- Alternative 5—No Action—would schedule no sales (Option 2 for all areas).

ALASKA REGION

Previous Program Proposals

Both the draft proposed program and the proposed program scheduled the following lease sales in the Alaska OCS Region:

- Beaufort Sea—sales in 2003, 2005, and 2007 in the program area depicted in map 3;
- Chukchi Sea/Hope Basin—sales in 2004 and 2007 in the program area depicted in map 4;
- Norton Basin—“special” sale in 2003 (or later) in the planning area depicted in map 5 (see the discussion under Norton Basin Option 1 for a description of the proposed special sale process);
- Cook Inlet—sales in 2004 and 2006 in the program area depicted in map 6.

Proposed Final Program Options

Beaufort Sea

Key Comparative Results. Net benefits from producing total available resources in this program area would range from about \$2.9 billion in the lower price case to \$9.7 billion in the higher price case. The area is in the mid-range of environmental sensitivity and primary productivity. Secondary (marine) productivity is low, as commercial fisheries data indicate no ports with significant landings. Eight companies have endorsed leasing in this area during the preparation of this 5-year program.

Selected Comments. The Alaska Division of Governmental Coordination (ADGC) stated continued support for the 5-year program process and expressed appreciation that the proposed program did not propose leasing in areas that the State had recommended be excluded. The Mayor of the North Slope Borough (NSB) reiterated the Borough's general preference for excluding all of the arctic OCS from leasing and specified areas near Barrow and Cross Island and in the eastern Beaufort Sea for exclusion from proposed leasing. The Mayor and Council of the City of Nuiqsut cited concerns about negative impacts to subsistence resources and activities and stated that they do not favor proposed leasing in the Beaufort Sea. The California Coastal Commission commented that it is very concerned that tankering resulting from leasing and development in Alaska OCS planning areas could adversely affect California's coastal resources.

The Alaska Marine Conservation Council (AMCC) expressed opposition to all proposed Alaska OCS leasing because of concerns about spills and discharges and their effect on commercial, sport, and subsistence fisheries. The National Parks Conservation Association (NPCA) stated that it opposes any additional leasing off Alaska, citing concerns about potential impacts to seven national parks, preserves, and units located in the vicinity of the Hope Basin, Cook Inlet, and Gulf of Alaska OCS Planning Areas. The Ocean Conservancy and others objected to all proposed Alaska OCS leasing because of concerns about oil spills and the ability to clean up spills in icy waters. Several citizens expressed opposition to all proposed Alaska OCS leasing.

The National Ocean Industries Association (NOIA), Alaska Oil and Gas Association (AOGA), and American Petroleum Institute (API) expressed a preference for five sales in this area.

Ten individuals offered testimony at the public hearing on the draft EIS that was held in Barrow. The Mayor of the NSB reiterated the Borough's continuing concerns and opposition regarding the OCS program, which are based mainly on concerns about negative impacts to the bowhead whale and other subsistence resources. A representative of the Alaska Eskimo

Whaling Commission (AEWC) endorsed the NSB's comments and presented similar testimony calling for specific measures to mitigate impacts to local communities. Three officials of the North Slope Borough Department of Wildlife Management and five citizens testified separately and expressed opposition based mainly on their concerns about potential impacts to subsistence resources.

Options

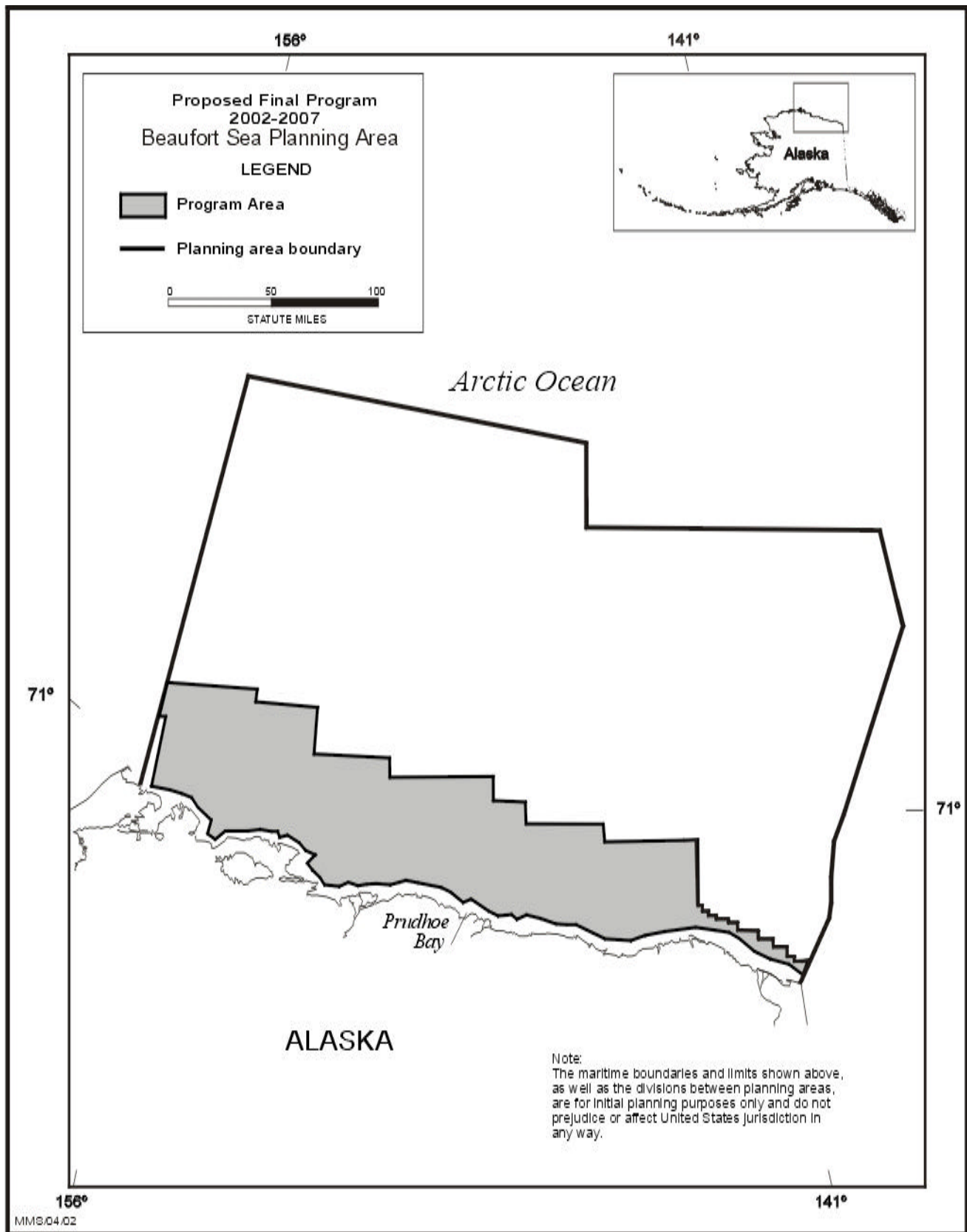
- (1) Proposal as adopted for the proposed program: three sales (2003, 05, 07) in the program area depicted in map 3
- (2) No sale
- (3) One sale (2003) in the same area as Option 1
- (4) Five sales (2003, 04, 05, 06, 07) in the same area as Option 1
- (5) Other

Discussion

Option 1 (3 Sales)

Valuation. The net benefits of anticipated production would be \$935 million in the lower price case and \$5.6 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 1. The most significant cause of environmental effects associated with OCS program activities would be a large oil spill. The MMS estimates the probability of one or more spills of 1,000 barrels or more (500 barrels in Alaska) occurring over a period of up to 40 years by applying spill rates based on historical oil spills to the oil resource estimates for each planning area. The draft EIS explains in detail the assumptions underlying oil-spill probabilities as well as their proper use and citation. The probability of a spill of 500 barrels or more in this area under Alternative 1 would be 81-94 percent. A summary of the EIS findings follows.



Map 3. Beaufort Sea Program Area

Water Quality— Placement of pipelines, artificial islands, and platforms disturbs the seafloor and temporarily increases the sediment load in the water column resulting in minor impacts to water quality. Exploration discharges would persist for a few hours beyond discharge around each rig; however, the National Pollutant Discharge Elimination System (NPDES) permits issued by the Environmental Protection Agency (EPA) limit discharge rates so the resultant impacts would be negligible to minor. Most production facilities would reinject all muds, cuttings, and production waters.

Air Quality—Concentrations of NO_x, SO_x and PM₁₀ and CO would remain well within the National Ambient Air Quality Standards (NAAQS) set by EPA. The impacts to pollutant levels would be minor. Ambient ozone levels are within the Federal standard in the Beaufort Sea, so impacts would be negligible. Air quality impacts from oil spills and in situ burning could be localized and of short duration and could cause minor impacts to air quality.

Marine Mammals—Prelease and postlease surveys, drilling and production, and decommissioning and abandonment activities are not expected to produce measurable impacts to cetacean species. Overall, noise from OCS operations would produce negligible to moderate impacts to whale populations. Potential impacts to bowhead whales and other species from oil spills could range from negligible to moderate. If large oil spills occur and contact spotted or ringed seals or bearded seals or their habitat, potential impacts could range from moderate to major, especially if numerous or large rookeries were contaminated, resulting in high pup and adult mortality. Oil spills could have minor to moderate impacts to local populations of walrus.

Terrestrial Mammals—Construction and maintenance of onshore infrastructure and pipelines and support vehicle and vessel traffic would result in minor impacts. Potential impacts to terrestrial mammals from contact with spilled oil could be minor. Vessel traffic on ice roads and aircraft activities might cause polar bears to abandon dens. Vehicles and ice road construction could have moderate to major effects on denning polar bears. Oil spills could cause a minor impact to polar bears.

Marine and Coastal Birds—Routine activities that may affect bird species include infrastructure placement, operational discharges and wastes, and vessel and aircraft traffic. Impacts to listed marine and coastal birds if oil spills contact birds or their habitat could be major. Potential impacts to nonlisted marine and coastal birds from oil spills could be major, depending on the size, time of year, and location of the spill.

Fish Resources—Installation and removal activities, operational discharges, and exploratory surveying and drilling could have impacts to fish resources from negligible to moderate. Potential impacts to fish resources from oil spills could range from minor to moderate, depending on the size, timing, and location of spills. Moderate effects of spills would be on a local level, and fish populations would recover over time.

Coastal Habitats—Construction of infrastructure such as onshore support bases and pipeline landfalls could result in small areas being lost. Overall potential impacts are predicted to be minor, while impacts could be minor to moderate if oil spills occur and contact the coast.

Seafloor Habitats—Routine operations that could affect seafloor habitats include placement and removal of structures and operational discharges. Overall impacts from the routine operations associated with the proposed action would be minor, and impacts associated with contact from spilled oil could be minor to moderate, depending on the size and location of the spill.

Essential Fish Habitat— Routine activities that could affect habitat include pipeline placement causing damage to spawning habitat or juvenile rearing habitat. Drilling muds and cuttings discharges might affect benthic species that spawn or rear offshore and would temporarily increase turbidity and decrease habitat. Structure placement would introduce a hard substrate that attracts opportunistic species and might result in new habitat for some prey species, which would attract some managed species. Pipeline trenching and island construction could damage marine plants by disturbing bottom areas. Oil spills that wash inshore into wetlands, intertidal zones, and shorelines could damage habitat for juvenile fish such as the Atka mackerel and yellowfin sole. Habitat areas of particular concern include offshore substrates of high-micro diversity, which provide food and shelter for groundfish and other organisms. There can be areas with rich communities of epifauna or with large particle size, such as the Boulder Patch. Spilled oil would smother plants, reducing habitat.

National Parks, Reserves, and Refuges—It is unlikely spilled oil could reach the vicinity of the Arctic National Wildlife Reserve, and, if it did, damage would be limited only to a very narrow tidal coastal strip.

Population, Employment, and Regional Income—Employment and population increases would be between 1 percent and 5 percent. In addition, no sector of the labor force is expected to change by more than 10 percent. Barrow is the center of the Beaufort Sea subregion that is the focus of current oil and gas development, and local employment generated by OCS activity would be less than 5 percent of total Barrow employment, which is considered minor.

Land Use and Existing Infrastructure—Existing land-use infrastructure and transportation systems might be affected by requiring the construction or expansion of support bases, terminals, airfields, pipelines, and roads. While the Prudhoe Bay complex can provide logistical support for exploration and development, some new construction or expansion of logistical bases would result. Routine operations could significantly affect land use by requiring the building of pipelines (subsea and overland), service roads, and new or expanded marine-support facilities, petroleum processing facilities, and airfields.

Fisheries—Fisheries for cisco and whitefish on the Colville River occur during the summer and fall months, and potential impact to that operation would be negligible or minor.

Sociocultural Systems and Environmental Justice—Disproportionately adverse effects on Alaska Natives could result from the proposed activities in all regions. Subsistence activities are extremely important in all parts of rural Alaska. Fish and marine mammals are the resources of most concern and typically are the resources most likely to be affected by OCS activities. Local residents have indicated that whales and other marine mammals are very sensitive to noise and have been disturbed from their normal patterns of behavior by past activities, thus becoming less predictable and more dangerous. Offshore pipeline effects on subsistence would be confined to the period of construction and be mitigated through stipulations.

Archaeological Resources—Routine operations that may affect archaeological resources include drilling wells, installing platforms, installing pipelines, anchoring, and constructing onshore infrastructure. Existing regulations require that archaeological surveys be conducted before permitting any activity that might disturb a significant site. Compliance with existing regulations would protect resources; however, some impacts could occur. Overall impact to archaeological resources would be minor. Oil spills could affect coastal historic and prehistoric archaeological resources and could result in unavoidable loss of information.

Option 2 (No Sale)

Valuation. The net benefits of anticipated production would be zero since no activity would occur.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 5. A summary of the EIS findings is presented below. Other effects associated with this option are described briefly in the preceding general discussion of proposed final program options for scheduling lease sales.

The choice of this option would result in a lack of activities associated with other options proposing sales in the planning area. Environmental impacts from presale seismic activity, exploration drilling, placement of platforms and pipelines, and accidental oil spills would not occur. Activity and impacts from seismic, exploration, and development activity on leases purchased during past sales could continue. Potential effects on the Pacific coast as a result of spills of oil produced from new Beaufort Sea leases and shipped by tanker to West coast ports would be eliminated.

Option 3 (1 Sale)

Valuation. The net benefits of anticipated production would be \$619 million in the lower price case and \$3.6 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 2. The probability of an oil spill of 500 barrels or more under this alternative would be 67-85 percent. A summary of the EIS findings follows.

Slowing the pace of leasing will reduce the number of sales in the Beaufort Sea from three to one. The MMS estimates that Option 3 would result in the production of approximately 33-66 percent of the oil resources estimated to be produced under Option 1, and there would be a corresponding reduction in the level of exploration, development, and production activity. The decrease in OCS activities would reduce the level of various types of disturbance, effluents and emissions, sedimentation, noise, and other impact agents. Somewhat less impact to water quality would be likely, less ocean bottom would be disturbed, and sediment release and turbidity would be less. Because of fewer helicopter trips to facilities, there would be less noise disturbance to terrestrial mammals, including caribou, muskox, arctic fox, and grizzly bear. Probability of oil-spill contact to the shoreline and coastal habitats and contact to habitat areas such as the Boulder Patch could be lower. Employment and regional income impacts would be somewhat less if fewer sales are conducted.

Option 4 (5 Sales)

Valuation. The net benefits of anticipated production would be \$1.7 billion in the lower price case and \$8.6 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 4. The probability of an oil spill of 500 barrels or more in this area under this alternative would be 94-99 percent. Although the EIS examines a total of five Beaufort Sea lease sales, selection of this option would result in only four sales under the new program, due to the time

needed to complete required preleasing steps for this area. A summary of the EIS findings follows.

The increase in OCS activities would similarly increase the level of various types of disturbance, effluents and emissions, sedimentation, noise, and other impact agents described under Option 1. It is assumed that much of the onshore infrastructure needed to support activities would already be in place because of existing and projected offshore activities in the planning area. Migrating bowhead whales might be affected by an increase in noise disturbance associated with routine activities at platforms further from shore. Of the pinniped species present, ringed and bearded seals would be expected to exhibit the most discernible increase in local impacts due to routine aircraft activity, icebreaking activities, and drill ship operations. However, impacts to pinnipeds are not expected to exceed those predicted for Option 1. Denning polar bears would most likely experience increased impacts from noise, but mitigation would maintain impacts at a level similar to that in Option 1. The difference in potential impacts to marine mammals from additional oil spills would only be evident if multiple spills occurred back-to-back without recovery events. Additional sales would likely increase the miles of offshore pipeline as well as add an additional pipeline landfall. This could increase impacts at the local level to seafloor habitats and benthic organisms, especially the Stefansson Sound Boulder Patch community.

The addition of two sales under Option 4 could increase noise disturbance from routine activities and cause moderate impacts to the bowhead whale. Resistance to increased operations among local subsistence harvesters would result in conflict among industry, government, and local people that may have prolonged impacts. The two additional sales would probably serve to retard the decline in the oil and gas sector rather than lead to growth in the overall State economy. Although the level of expected activity would influence the most important sector in the Alaska economy, the effect would be sufficiently weak that overall impacts to population, employment, and regional income would remain minor. The proposed additional sales would likely have major effects on sociocultural systems on the North Slope.

Chukchi Sea/Hope Basin

Key Comparative Results. Net benefits from producing total available resources in this program area would range from \$952 million in the lower price case to \$17.5 billion in the higher price case (the Hope Basin portion has no development value in either case, although it is estimated to contain oil and gas resources in both cases). The program area is in the mid-range of environmental sensitivity and primary productivity. Secondary (marine) productivity is relatively low as indicated by commercial fisheries data.

Two companies have endorsed leasing in this area during the preparation of this 5-year program.

Selected Comments. The ADGC stated continued support for the 5-year program process and expressed appreciation that the proposed program did not propose leasing in areas that the state had recommended be excluded. The Mayor of the NSB reiterated the Borough's general preference for excluding all of the arctic OCS from leasing and specified the area near Barrow for exclusion from proposed leasing. The Mayor and Council of the City of Nuiqsut cited concerns about negative impacts to subsistence resources and activities and stated that they do not favor proposed leasing in the Chukchi Sea. The California Coastal Commission commented that it is very concerned that tankering resulting from leasing and development in Alaska OCS planning areas could adversely affect California's coastal resources.

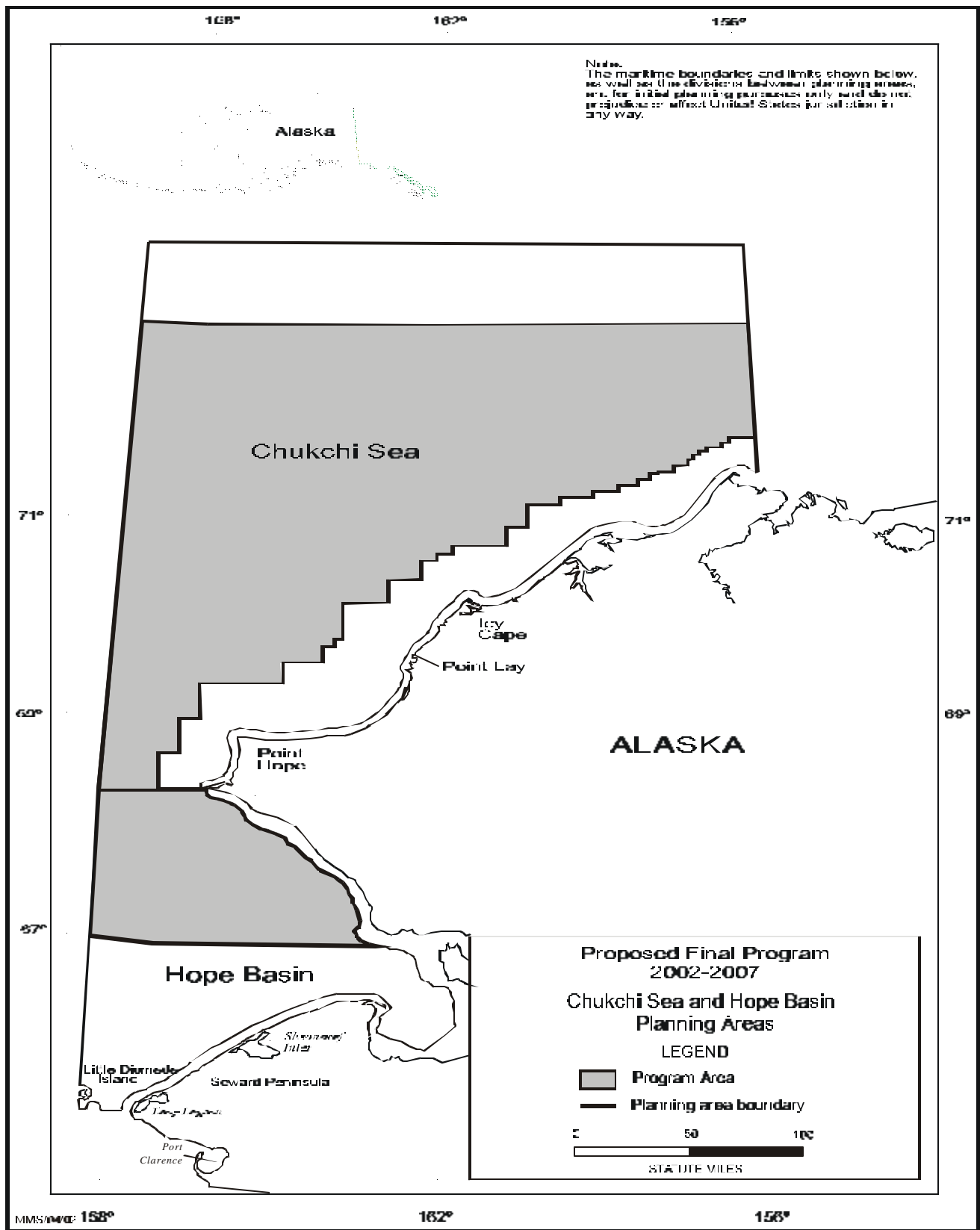
The AMCC expressed opposition to all proposed Alaska OCS leasing because of concerns about spills and discharges and their effect on commercial, sport, and subsistence fisheries. The NPCA stated that it opposes any additional leasing off Alaska, citing concerns about potential impacts to seven national parks, preserves, and units located adjacent to the Hope Basin, Cook Inlet, and Gulf of Alaska OCS Planning Areas. The Ocean Conservancy and others objected to all proposed Alaska OCS leasing because of concerns about oil spills and the ability to clean up spills in icy waters. Several citizens expressed opposition to all proposed Alaska OCS leasing.

The NOIA, API, and AOGA expressed a preference for two sales in this area.

Relevant testimony offered at the public hearing on the draft EIS that was held in Barrow is summarized above in the discussion of options for the Beaufort Sea Planning Area.

Options

- (1) Proposal as adopted for the proposed program: two sales (2004, 07) in the program area depicted in map 4
- (2) No sale
- (3) One sale (2007) in the same area as Option 1
- (4) Two "special" sales (2004, 07) in the same area as Option 1 (refer to description for Norton Basin Option 1)



Map 4. Chukchi Sea/Hope Basin Program Area

(5) Exclude the Hope Basin portion of the program area from the proposed sale(s)

(6) Other

Discussion

Options 1 and 4 both provide for two lease sales, but the process for implementing the sales would differ under each option. The discussion below assumes that the potential benefits and environmental impacts would be the same under either option.

Options 1 and 4 (2 Sales)

Valuation. The net benefits of anticipated production would be \$868 million in the lower price case and \$6.9 billion in the higher price case.

Environmental Impacts. The option for two sales (both Option 1 and 4) is analyzed in the draft EIS under Alternative 1. The probability of an oil spill of 500 barrels or more in the Chukchi Sea portion under this alternative would be up to 98 percent (no spills are assumed for the Hope Basin portion). A summary of the EIS findings follows.

Water Quality—Placement of pipelines, artificial islands, and platforms would disturb the seafloor and temporarily increase the sediment load in the water column resulting in minor impacts to water quality. Exploration discharges would persist for a few hours beyond discharge around each rig; however, the NPDES permit limits discharge rates so the resultant impacts would be negligible to minor. Most production facilities would reinject all muds, cuttings, and production waters. A spill in isolated coastal waters or shallow water under thick or rapidly freezing ice could cause sustained degradation of water quality.

Air Quality—Concentrations of NO_x, SO_x and PM₁₀ and CO would remain well within the NAAQS. The impacts to pollutant levels would be minor. Ambient ozone levels are within the federal standard, so impacts would be negligible. Air quality impacts from oil spills and insitu burning could be localized and of short duration and could cause minor impacts to air quality.

Marine Mammals—Overall, noise from OCS operations would produce negligible to moderate impacts to whale populations. Potential impacts to fin, humpback, and other whales from oil spills could range from negligible to moderate. Potential impacts to the northern fur seal are expected to be

negligible. Oil spills could have minor to moderate impacts to local populations of walrus and fur seals.

Terrestrial Mammals—Predicted impacts to Alaska terrestrial mammals from construction and maintenance of onshore infrastructure and pipelines and support vehicle/vessel traffic are minor. Potential impacts to terrestrial mammals from contact with spilled oil could be minor. Vessel, vehicle, and aircraft activities have been known to affect polar bear behavior. Polar bears might abandon dens. Road construction could have moderate to major effects on denning polar bears. Oil spills could cause a minor impact to polar bears through contamination or reduction of prey, fouling of fur, oiling of ice, and temporary abandonment of clean-up areas.

Marine and Coastal Birds—Impacts to listed marine and coastal birds if oil spills occur and contact birds or their habitat could be major. Potential impacts to nonlisted marine and coastal birds from oil spills could be major depending on the size, time of year, and location of the spill.

Fish Resources—Potential impacts to fish resources from routine operations are predicted to be negligible to moderate. Potential impacts to fish resources from oil spills are variable and could range from minor to moderate, depending on the size, timing, and location of spills. Moderate effects of spills could be on a local level, and fish populations would recover over time.

Coastal Habitats—Operations that could affect coastal habitats include construction of infrastructure such as onshore support bases and pipeline landfalls. Small areas would be lost from pipeline landfalls and placement of vertical support members for aboveground onshore pipelines, onshore bases, and roads. Overall potential impacts to coastal habitats associated with routine operations are predicted to be minor, while impacts could be minor to moderate if oil spills occur and contact the coast.

Seafloor Habitats—Routine operations that could affect seafloor habitats include placement and removal of structures and operational discharges. Overall impact from the routine operations would be minor and impacts associated with contact from spilled oil could be minor to moderate depending on the size and location of the spill.

Essential Fish Habitat—Pipeline placement and discharge of drilling muds and cuttings might affect benthic species that spawn or rear offshore. Platform construction would introduce a hard substrate that attracts fish and might result in new habitat for some managed species. Discharges of drilling fluids and cuttings would temporarily increase turbidity and decrease habitat.

Population, Employment, and Regional Income—Any OCS activity would generate indirect and induced employment in Kotzebue, a likely base for marine and air support. The employment generated in Kotzebue at its peak during production is expected to be 1-5 percent of the total employment for 2-5 years and would generate associated population increase of less than 5 percent for 2-5 years.

Land Use and Existing Infrastructure—Routine operations could significantly affect land use in the Chukchi Sea/Hope Basin subregion by building pipelines (subsea and overland), service roads, and new or expanded marine-support facilities, petroleum processing facilities, and airfields. While the Prudhoe Bay complex can provide logistical support for Beaufort Sea OCS exploration and development, no such facilities currently exist for the Chukchi Sea/Hope Basin areas. The infrastructure and logistics required to support activity are not expected to affect the Nome area significantly. Land-use changes would be expected to have moderate effects on other user groups and resources (i.e., subsistence, sociocultural systems). One effect could be the construction of petroleum industry facilities in, and increased access to, the Chukchi Sea and Hope Basin.

Fisheries—There is a small chum salmon fishery in Kotzebue Sound, and the proposed action could cause minor impacts to this fishery. The effects of pipelines on commercial fishing are expected to be negligible.

Sociocultural Systems and Environmental Justice—Disproportionately adverse effects on Alaska Natives could result from the proposed activities in all regions. Subsistence activities are extremely important in all parts of rural Alaska. Fish and marine mammals are the resources of most concern and typically are the resources most likely to be affected by OCS activities. Local residents have indicated that whales and other marine mammals are very sensitive to noise and have been disturbed from their normal patterns of behavior by past activities, thus becoming less predictable and more dangerous. Offshore pipeline effects on subsistence would be confined to the period of construction and be mitigated through stipulations.

Archaeological Resources—Existing regulations require that archaeological surveys be conducted before permitting any activity that might disturb a significant archaeological site. Compliance would protect archaeological resources; however, some impacts could occur. Overall impact to archaeological resources would be minor. Oil spills could affect coastal historic and prehistoric archaeological resources and could result in unavoidable loss of information.

Option 2 (No Sale)

Valuation. The net benefits of anticipated production would be zero since no activity would occur.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 5. A summary of the EIS findings is presented below. Other effects associated with this option are described briefly in the preceding general discussion of proposed final program options for scheduling lease sales.

If no sales are scheduled in the Chukchi Sea/Hope Basin program area, activities associated with other options proposing a sale in this area would not take place. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and transportation of hydrocarbons would not occur. There are no existing OCS leases in the Chukchi Sea, so no other OCS activity except for the transit of tankers, service vessels and possibly drilling rigs associated with leases in other planning areas would take place in the area.

Option 3 (1 Sale)

Valuation. The net benefits of anticipated production would be \$983 million in the lower price case and \$2.2 billion in the higher price case. [Refer to the discussion of valuation of program alternatives in part IV.C for an explanation of the anomalous estimate in the lower price case.]

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 2. The probability of an oil spill of 500 barrels or more in the Chukchi Sea portion under this alternative would be 79-86 percent (no spills are assumed for the Hope Basin portion). A summary of the EIS findings follows.

Slowing the pace of leasing would reduce the number of sales in the Chukchi Sea/Hope Basin program area from two to one. The MMS estimates that under the lower price case Option 3 would result in the same volume of production as Option 1, and any expected impacts would be about the same. However, in the higher price case Option 3 would result in the production of approximately half the hydrocarbon resources estimated to be produced under the proposed action. There would be a corresponding reduction in the level of exploration, development, and production activity. The decrease in OCS activities will reduce the level of various types of disturbance, effluents and emissions, sedimentation, noise, and other impact agents. Somewhat less impact to water quality would be likely, less ocean bottom would be disturbed, and sediment release and turbidity would be less. Because of fewer helicopter trips to facilities, there would be less

noise disturbance to terrestrial mammals, including caribou, muskox, arctic fox, and grizzly bear. The probability of oil spill contacts to the shoreline and coastal habitats could also be less. This would improve the chances of recovery for coastal fauna contacted by oil and would result in fewer impacts to subsistence use. Employment and regional income impacts would be somewhat less if fewer sales are conducted.

Option 5 (Exclude Hope Basin)

Valuation. The net benefits of anticipated production under this option would be the same as under Option 1 or Option 3 because the Hope Basin portion of the program area is estimated to have no development value.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 3. A summary of the EIS findings follows. Other effects associated with this option are described briefly in the preceding general discussion of proposed final program options for scheduling lease sales.

Exclusion of the Hope Basin portion would restrict OCS leasing off Alaska to the Beaufort Sea, Chukchi Sea, and Cook Inlet Planning Areas. None of the impacts predicted for Option 1 as a result of sales conducted in Hope Basin would occur. If an oil spill occurred in the southern portion of the Chukchi Sea, it could, under certain conditions, enter Hope Basin and affect marine and coastal resources. However, the nearshore surface currents in the Chukchi Sea are more likely to move the oil to the north. Any possibility of oil spills, air emissions, or drilling discharges from oil and gas activity in Hope Basin affecting Cape Krusenstern National Monument or the Bering Land Bridge National Preserve would be eliminated.

Norton Basin

Key Comparative Results. Norton Basin has no development value in either the lower or higher price case, although it is estimated to contain gas resources in both cases. The area is in the mid-range of environmental sensitivity and primary productivity. Secondary (marine) productivity is low, as commercial fisheries data indicate no ports with significant landings in this area. Three companies have endorsed leasing in this area during the preparation of this 5-year program.

Selected Comments. The ADGC expressed appreciation that Norton Basin blocks located within 12 miles of the Yukon Delta, which were not excluded from the proposed program, were deferred from the Call for Information and Nominations that was issued for proposed Sale 188. The California Coastal Commission commented that it is very concerned that tankering resulting from leasing and development in Alaska OCS planning areas could adversely affect California's coastal resources. The Sitnasuak

Native Corporation expressed support for the proposed lease sale in this area.

The AMCC expressed opposition to all proposed Alaska OCS leasing because of concerns about spills and discharges and their effect on commercial, sport, and subsistence fisheries. The NPCA stated that it opposes any additional leasing off Alaska, citing concerns about potential impacts to seven national parks, preserves, and units located adjacent to the Hope Basin, Cook Inlet, and Gulf of Alaska OCS Planning Areas. The Ocean Conservancy and others objected to all proposed Alaska OCS leasing because of concerns about oil spills and the ability to clean up spills in icy waters. They also reiterated their concerns about the proposed special approach to leasing in this area. Several citizens expressed opposition to all proposed Alaska OCS leasing.

The NOIA, API, and AOGA endorsed the proposed Norton Basin lease sale, and NOIA expressed support for taking a more flexible approach to leasing in this area.

Three individuals, including the Mayor of Nome and representatives of the Sitnasuak Native Corporation, testified at the public hearing on the draft EIS that was held in Nome. All three commented in favor of the proposed leasing in this area.

Options

- (1) Proposal as adopted for the proposed program: one “special” sale (2003) in the planning area depicted in map 5.

The proposed approach to leasing in this area would entail requesting nominations and comments before deciding whether to proceed with the competitive sale. The request would outline the general provisions of lease issuance [e.g., area eligible for leasing consideration, potential special stipulations, requirement to submit an acceptable exploration plan within 3 years or lose the lease, and possible cash bonus bid deferral (but not forgiveness), or other incentive]. If there is no interest expressed, the MMS would defer the sale for 1 year and reissue the request for nominations and comments the next year (and so on through the term of the 5-year program). If at some point there is interest and blocks are nominated by industry and deemed appropriate for leasing by the MMS, the lease sale would proceed to offer leases with a commitment to explore. Only one round of lease issuance would occur during this 5-year program. As with any OCS lease sale,

the prelease procedures and the lease terms and conditions would be adopted at the individual sale stage and not at the 5-year program stage of the overall OCS process.

(2) No sale

(3) Other

Discussion

Option 1 (1 Sale)

Valuation. The net benefits of anticipated production would be negligible in either price case.

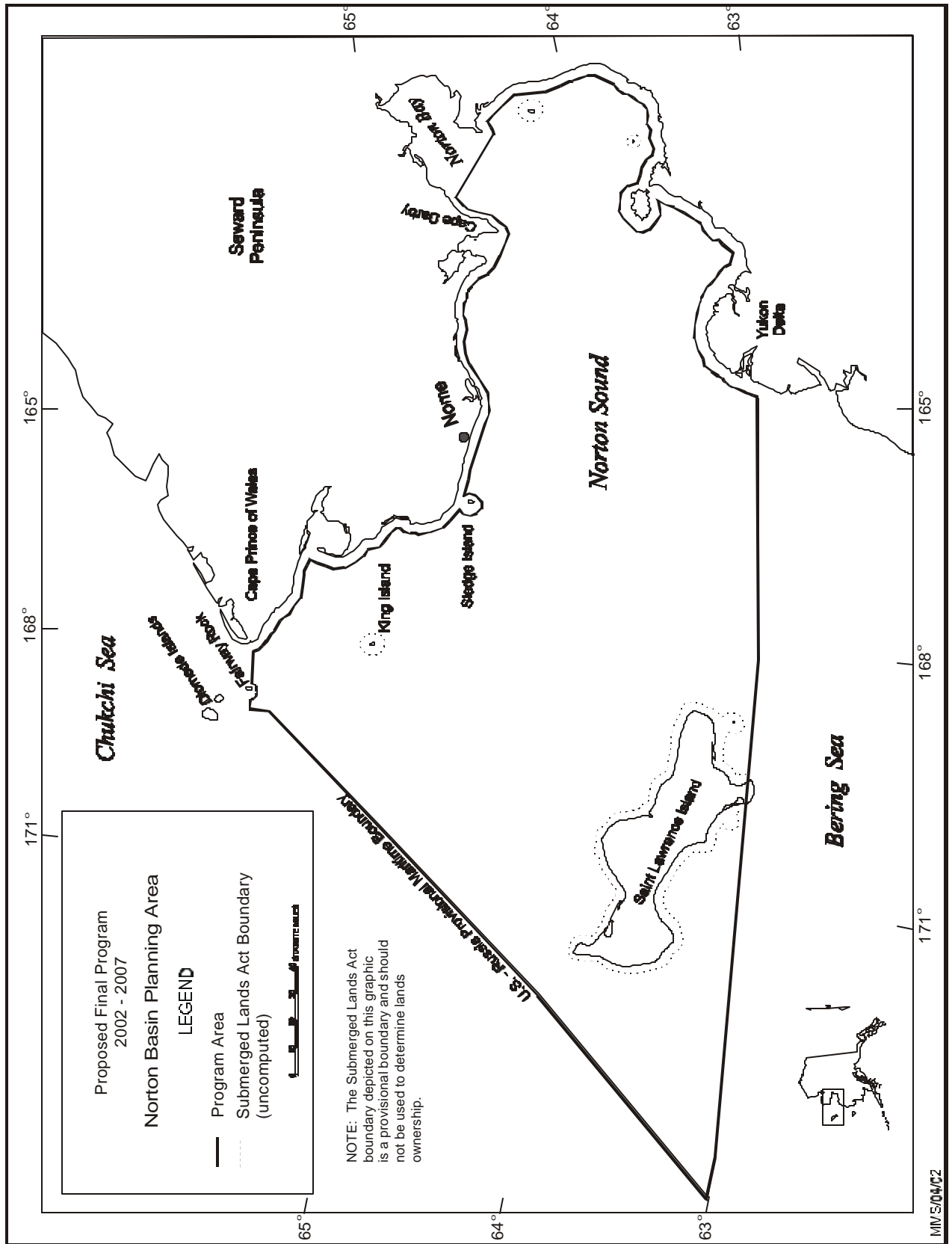
Environmental Impacts. This option is analyzed in the draft EIS under Alternative 1. No oil-spill probabilities are given because there is no anticipated production of oil. Following is a summary of the EIS findings with respect to expected effects if exploration and production occur.

Water Quality—Exploration discharges would persist for a few hours beyond discharge around each rig; however, the NPDES permit limits discharge rates so the resultant impacts would be negligible to minor. Most production facilities would reinject all muds, cuttings, and production waters.

Air Quality—Concentrations of NO_x, SO_x and PM₁₀ and CO would remain well within the NAAQS. The impacts to pollutant levels would be minor. Ambient ozone levels are within the federal standard, so impacts would be negligible.

Marine Mammals—Noise from OCS operations, when forcing an alteration of migratory pathways, would produce negligible to moderate impacts to whale populations. Potential impacts to fin, humpback, and other whales from oil spills could range from negligible to moderate. Vessel and aircraft traffic could disturb Steller sea lions. Potential impacts to the northern fur seal are expected to be negligible.

Terrestrial Mammals—Routine operations affecting terrestrial mammals include construction and maintenance of onshore infrastructure and pipelines and support vehicle/vessel traffic. Predicted impacts to Alaska terrestrial mammals from such activities are minor. Impacts of routine operations to grizzly and black bears would be minor.



Map 5. Norton Basin Planning Area

Marine and Coastal Birds—Routine operations affecting listed marine and coastal birds include construction and maintenance of onshore infrastructure and pipelines and support vehicle and vessel traffic. Predicted impacts to Alaska terrestrial mammals from such activities are minor. Impacts or routine operations to marine and coastal birds would be minor.

Seafloor Habitats—Routine operations that could affect seafloor habitats include placement and removal of structures and operational discharges. Overall impacts from the routine operations would be minor.

Essential Fish Habitat—Routine activities that affect habitat include pipeline placement, causing damage to spawning habitat or juvenile rearing habitat. Drilling muds and cuttings discharges might affect benthic species that spawn or rear offshore. Structure placement would introduce a hard substrate that might attract opportunistic species and might result in new habitat for some prey species, which would attract some managed species. Discharges of drilling fluids and cuttings would temporarily increase turbidity and decrease habitat. Species include king and snow crabs, Alaska plaice, Pacific cod, sculpin, walleye pollock, and yellowfin sole. Species with essential habitat in Norton Sound that can be damaged by dredging in nearshore areas include the five species of Pacific salmon.

Population, Employment, and Regional Income—Employment and population increases would be between 1 percent and 5 percent in the regional center of Nome. Impacts of routine operations are expected to be minor.

Land Use and Existing Infrastructure—Pipeline construction activities could require a small support base to be constructed adjacent to a pipeline/pier jetty. This jetty would facilitate the shoreline entry of the small diameter pipeline. Potential impacts to land use and existing infrastructure due to routine operations are expected to be moderate.

Fisheries—Because pipelines are likely to be buried in all waters of 30 meters or less, and the principal types of gear used for the harvesting of finfish in this region (gill nets and seines) are unlikely to suffer damage due to contact with unburied pipelines, the effects of pipelines on commercial fishing are expected to be negligible. Routine activities could interfere with the summer fishery for red king crab by causing fishing gear loss, loss of fishing space, and fishing-vessel collisions, but such occurrences are expected to be very infrequent.

Sociocultural Systems and Environmental Justice—Disproportionately adverse effects on Alaska Natives could result from the proposed activities. Subsistence activities are extremely important in all parts of rural Alaska. Fish and marine mammals are the resources of most concern and typically

are the resources most likely to be affected by OCS activities. Offshore pipeline effects on subsistence would be confined to the period of construction and be mitigated through stipulations.

Archaeological Resources—Existing regulations require that archaeological surveys be conducted before permitting any activity that might disturb a significant archaeological site. Compliance would protect archaeological resources; however, some impacts could occur. Overall impacts to archaeological resources would be minor.

Option 2 (No Sale)

Valuation. The net benefits of anticipated production would be zero since no activity would occur.

Environmental Impacts. This option is analyzed in the draft EIS under Alternatives 3 and 5. Alternative 3 examines the effects of excluding the Norton Basin, Hope Basin, and Eastern Gulf of Mexico areas from the leasing program, and Alternative 5 examines the “No Action” scenario. A summary of the EIS findings is presented below. Other effects associated with this option are described briefly in the preceding general discussion of proposed final program options for scheduling lease sales.

The choice of this option would result in activities associated with other options proposing a sale in this area not taking place. Environmental impacts from presale seismic activity, exploration drilling, placement of platforms, and the transportation of hydrocarbons would not occur. There are no existing OCS leases in the Norton Basin Planning Area, so no other OCS activity except for the transit of tankers, service vessels and possibly drilling rigs associated with leases in other planning areas would take place in the area.

Cook Inlet

Key Comparative Results. Net benefits from producing total available resources in this program area would range from \$852 million in the lower price case to \$1.7 billion in the higher price case. The area is in the lower range of environmental sensitivity. It is in the higher range of primary productivity and produces roughly 3 percent of Alaska’s commercial fisheries landings exclusive of the North Aleutian Basin Planning Area. Seven companies have endorsed leasing in this area during the preparation of this 5-year program.

Selected Comments. The ADGC stated continued support for the 5-year program process and expressed appreciation that the proposed program did not propose leasing in areas that the State had recommended be excluded. The State also recommended that the MMS consider the December 2001 Kenai Peninsula Borough resolution citing support for the Tri-Borough Position Paper prepared by the Kenai Peninsula, Kodiak Island, and Lake and Peninsula Boroughs. The position paper identifies the following five issues and states that if they are not satisfactorily addressed, the Tri-Boroughs would have great reservations about supporting the proposed lease sales in this area: offshore loading of tankers, fishing gear conflicts, oil-spill response capability, critical habitat areas, and revenue sharing with local governments.

The AMCC expressed opposition to all proposed Alaska OCS leasing because of concerns about spills and discharges and their effect on commercial, sport, and subsistence fisheries. The NPCA stated that it opposes any additional leasing off Alaska, citing concerns about potential impacts to seven national parks, preserves, and units located adjacent to the Hope Basin, Cook Inlet, and Gulf of Alaska OCS Planning Areas. The Ocean Conservancy and others objected to all proposed Alaska OCS leasing because of concerns about oil spills and the ability to clean up spills in icy waters. Several citizens expressed opposition to all proposed Alaska OCS leasing.

The NOIA, API, and AOGA endorsed the proposal for two sales in the Cook Inlet area.

Testimony was presented at three hearings on the draft EIS that were held near Cook Inlet. In Kodiak, a citizen expressed opposition based on concerns about spills and discharges, and a representative of the Kodiak Island Borough stated that it would not oppose the proposed lease sales if the issues presented in the Tri-Borough Position Paper are properly addressed. In Homer, two individuals, one representing the Kachemak Bay Conservation Society, expressed opposition to proposed leasing in Cook Inlet. In Anchorage, 12 individuals, eight representing environmental organizations, expressed opposition to all proposed Alaska OCS leasing.

Options

- (1) Proposal as adopted for the proposed program: two sales (2004, 06) in the program area depicted in map 6
- (2) No sale
- (3) One sale in 2004 in the same area as Option 1
- (4) Other

Discussion

Option 1 (2 Sales)

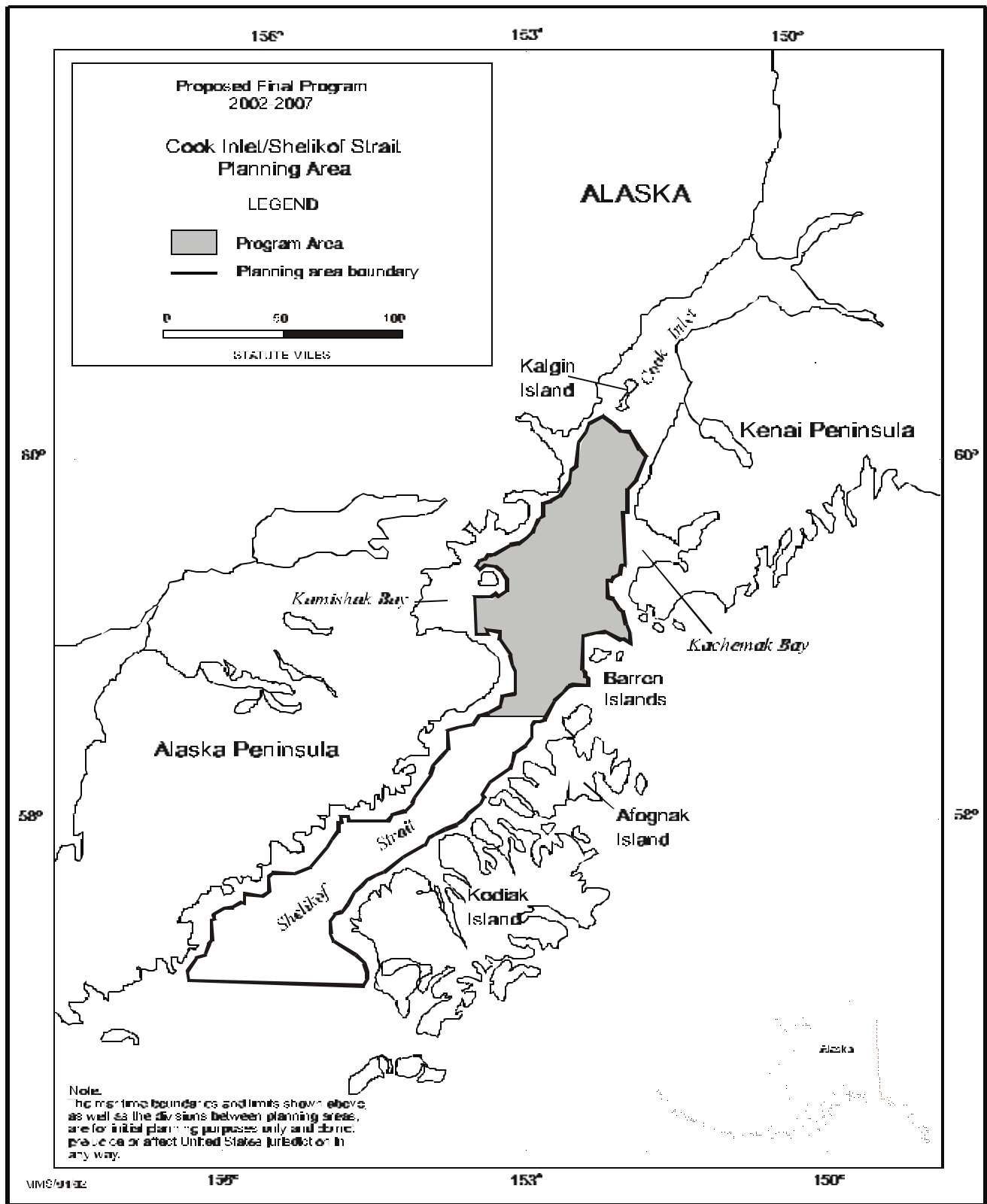
Valuation. The net benefits of anticipated production would be \$477 million in the lower price case and \$1.3 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 1. The probability of an oil spill of 500 barrels or more in this area under this alternative would be 16-18 percent. A summary of the EIS findings follows.

Water Quality—Placement of pipelines and platforms would disturb the seafloor and temporarily increase the sediment load in the water column, resulting in minor impacts to water quality. Exploration discharges would persist for a few hours beyond discharge around each rig; however, the NPDES permit limits discharge rates so the resultant impacts would be negligible to minor. Most production facilities would reinject all muds, cuttings, and production waters. A spill in isolated coastal waters or shallow water could cause sustained degradation of water quality.

Air Quality—Concentrations of NO_x, SO_x and PM₁₀ and CO would remain well within the NAAQS. The impacts to pollutant levels would be minor. Ambient ozone levels are within the Federal standard, so impacts would be negligible. Air quality impacts from oil spills and in situ burning could be localized and of short duration and could cause minor impacts to air quality.

Marine Mammals—The main impact factor associated with routine operations that might affect cetaceans is noise associated with prelease and postlease surveys, drilling and production, and decommissioning and abandonment activities. Other impact-producing factors (e.g., operational discharges and wastes, vessel and air traffic) are not expected to produce measurable impacts to cetacean species in Alaska. Since the populations of



Map 6. Cook Inlet Program Area

Cook Inlet beluga whales are in decline, disturbances, which could reduce fitness, could cause minor to moderate impacts to the populations. Potential impacts to killer whales and to harbor and Dall's porpoises are expected to be negligible. Oil-spill impacts to the Cook Inlet beluga population should be minor, but a possibility for moderate to major impacts exists, given the current decline in the populations.

Vessel and aircraft traffic are the routine activities that would most likely disturb Steller sea lions; however, these activities could be tailored to avoid critical habitat areas and have only negligible effects on the animals. Potential impacts to the Pacific walrus, ringed seal, bearded seal, spotted seal, ribbon seal, and harbor seal from routine operations are expected to be minor. Potential impacts to the northern fur seal are expected to be negligible. Potential impacts to pinnipeds from oil spills could be major, depending on the species affected and if large oil spills contact the animals or their habitat.

Terrestrial Mammals—Grizzly bears use the coastal environments and terrestrial oil transportation routes, and black bears make extensive use of coastal areas in Cook Inlet. Aircraft traffic might disturb individual bears occasionally for a short period of time. Onshore infrastructure placement could disrupt individual bear dens located near the coast; however, most bears den further inland. Impacts of routine operations to grizzly and black bears would be minor. If oil spills occur nearshore, contamination of coastal streams, beaches, mudflats, or river mouths might result in food and fur contamination of grizzly or black bears. This could affect some bears and might contribute to a decline in survival of exposed bears, possibly resulting in minor impacts at the population level.

River otters can be found using intertidal and subtidal habitats adjacent to the Cook Inlet Planning Area. Boat traffic might disturb individual otters for a brief period of time, but routine operations would cause negligible impacts to populations. Oil contamination could affect locally important food sources and expose animals to direct oiling and oil ingestion through grooming and consumption of contaminated prey and oiled carrion. Potential impacts to the Alaska river otter could be minor to moderate.

Coastal and Marine Birds—Cormorants, gulls, murre, guillemots, and puffins are colonial nesters in the lower Cook Inlet that could be affected by noise from low flying aircraft. Since helicopter flights are of short duration and aircraft routes can be designed to avoid sensitive areas, impacts should be short term, local, and minor. Seismic surveys conducted from boats in offshore areas and in lagoon systems could also displace birds from preferred habitats. However, these disturbances would be limited to the immediate area around survey vessels, and negative impacts

to waterfowl could be minor. Oil spills present a threat to waterfowl and seabirds because they would be the most likely species to come in contact. The survival rate for oiled birds is low, and many have low reproductive rates and a slow maturity rate, so recovery after a large oil spill could take many years, and impacts could be moderate to major.

Fish Resources—Seismic survey airgun discharges can affect pelagic fish species with swim bladders, but acute damage appears confined to a radius of 5 feet from the blast, and the approaching noise source probably scares mobile fishes away before the airgun comes within this range. Temporary displacement of fishes is the most probable effect of seismic surveys and would be negligible. Turbidity could affect immobile benthic organisms, which in turn could result in minor impacts to sablefish, Pacific cod, and crab that rely on that food source. Routine operations that could affect coastal habitats include construction of infrastructure such as onshore support bases and pipeline landfalls. Overall potential impacts to coastal habitats associated with routine operations are predicted to be minor, while impacts could be minor to moderate if oil spills occur and contact the coast.

Seafloor Habitats—Routine operations that could affect seafloor habitats include placement and removal of structures and operational discharges. Overall impact would be minor, and impacts associated with contact from spilled oil could be minor to moderate depending on the size and location of the spill.

Essential Fish Habitat—Routine activities that may affect such habitat include placement and removal of drilling units and production platforms, installation of pipelines, and operational discharges. Overall impacts to habitat from routine operations would be minor. Impacts from oil spills contacting habitat could range from minor to moderate.

National Parks, Reserves, and Refuges—Impacts from accidents could affect such areas of special concern, and the level depends primarily on the spill location, size, and time of year. Generally, impacts could be minor to moderate. It is unlikely that onshore oil and gas activities would occur within these refuges, but if they did, impacts would range from negligible to minor. As with parks, impacts to refuges from contact with spilled oil depend on the spill location, size, and time of year. Assuming refuges come in contact with spilled oil, impacts could range from minor to moderate. Chugach National Forest is susceptible to routine operations from the transport and tanker loading of oil produced in other regions and transported by pipeline to the Port of Valdez, potentially causing minor impacts from routine operations and minor to moderate impacts from oil spills.

Population, Employment, and Regional Income—The main effect on population and employment would be the employment generated by the expected routine activity. South-central Alaska communities could be more affected by leasing in their planning area than other parts of Alaska. The larger populations and more diverse economies of south-central Alaska communities compared with other Alaska communities would tend to dampen the impact of additional leasing on their economies. Local employment generated by OCS activity at its peak is only expected to account for between 1 and 5 percent of total local employment for 2 to 5 years. Overall potential impacts to population, employment, and regional income range from negligible to minor. Oil spills could have minor impacts.

Land Use and Existing Infrastructure—Overall impacts from routine operations on land use and infrastructure onshore range from negligible to moderate. If oil spills occur and contact the coast, overall impacts to land use and existing infrastructure could be minor to moderate. The infrastructure and logistics required to support activity could significantly affect land use in the Cook Inlet. Nikiski, Kenai, and Soldotna have existing oil and gas support facilities, but additional elements would likely be needed. Cook Inlet production could be transported by a newly constructed subsea pipeline to the tanker-loading facility near Nikiski. However, both loading and storage capabilities would require expansion to handle the increased volume. Such land-use changes would be expected to have moderate effects on other user groups and resources.

Fisheries—Potential impacts to commercial and recreational fisheries from routine operations and accidents could be negligible to moderate. The most significant Cook Inlet fishery is salmon, predominantly sockeye. Loss of harvest in Cook Inlet due to foreclosure of fishing areas by offshore facilities would be minimal. Competition for services and labor would occur largely during exploration and development. This could result in additional costs to the fishing industry for the duration of OCS exploration and development, although once production began, such competition would be reduced. Competition for services and labor also would occur during oil-spill response incidents. However, impacts of routine operations are predicted to be minor.

Tourism and Recreation—Tourism and recreation activities along the Alaska coast consist primarily of water-dependent activities, such as fishing, boating, and sightseeing. Most of the potential effects of routine activities on tourism and recreation would be felt in the Cook Inlet area, closest to Alaska's centers of population having the most developed commercial tourist industry. The proposed action would add new platforms in Cook Inlet. Given the relatively small magnitude of potential

changes in relation to the overall population and economy of that area, these effects are expected to be minor. An oil spill could foul the beaches on both sides of Cook Inlet. A spill on the east side of the Kenai Peninsula, (where more fishing, sightseeing, camping, and other recreational activities take place) could disrupt tourism and recreation for as much as a full season. Such oil-spill effects could be moderate.

Sociocultural Systems and Environmental Justice—Potential impacts to sociocultural systems are predicted to be less significant in areas already experiencing oil and gas development such as Cook Inlet. In regard to environmental justice it is possible that new onshore infrastructure could be located near minority and low-income populations and could produce adverse health or environmental impacts. If an oil spill occurs in Cook Inlet, the potential environmental and health impacts to Alaska Native populations could be disproportionately high and adverse depending on the geographic location of the spill.

Subsistence activities are important in all parts of rural Alaska. Fish and marine mammals constitute a large part of the harvest and typically are the resources most likely to be affected by OCS activities. Most Alaska coastal communities are rural and predominantly Native (minority), and many contain at least subpopulations with low incomes. Even in the Cook Inlet area, several small communities meet the Executive Order 12898 qualifications for consideration under environmental justice. Disproportionately adverse effects on Alaska Natives could result from the proposed activities.

Archaeological Resources—Archaeological resources that could be affected by the proposed action include historic shipwrecks or aircraft, inundated prehistoric sites offshore, and historic and prehistoric sites onshore. Archaeological resources are particularly abundant along the Gulf of Alaska shorelines, and some type of archaeological resource is present on or adjacent to nearly all shorelines. Gross crude oil contamination could affect archaeological site recognition. Cleanup activities could impact beached shipwrecks or shipwrecks in shallow waters and coastal historic and prehistoric archaeological sites. Unauthorized collecting of artifacts by cleanup crews is also a concern.

Option 2 (No Sale)

Valuation. The net benefits of anticipated production would be zero since no activity would occur.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 5. A summary of the EIS findings is presented below. Other effects associated with this option are described briefly in the preceding

general discussion of proposed final program options for scheduling lease sales.

The choice of this option would eliminate activities associated with other options proposing a sale or sales in the planning area. Impacts from presale seismic activity, exploration drilling, the placement of platforms and pipelines, and accidental oil spills would not take place. Activities and impacts from development on previously acquired OCS leases could take place.

Option 3 (1 Sale)

Valuation. The net benefits of anticipated production would be \$233 million in the lower price case and \$626 million in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 2. The probability of an oil spill of 500 barrels or more in this area under this alternative would be 8-10 percent. A summary of the EIS findings follows.

Slowing the pace of leasing would reduce the number of sales in Cook Inlet from two to one. The MMS estimates that Option 3 would result in approximately half the hydrocarbon resources estimated to be produced from the proposed action, and there would be a corresponding reduction in the level of exploration, development, and production activity. Fewer large spills should occur if Option 2 is adopted. Somewhat less impact to water quality would be likely, and less ocean bottom would be disturbed so sediment release and turbidity would be less. There would also be fewer drilling discharges so that impacts in the water column relating to those discharges would be less. Because of fewer helicopter trips, there would be less noise disturbance to terrestrial mammals. There should also be less oil-spill contact to the shoreline and coastal habitats, resulting in fewer impacts to subsistence use. Employment and regional income impacts would be somewhat less if fewer sales are conducted.

GULF OF MEXICO REGION

Previous Program Proposals

Both the draft proposed program and proposed program scheduled annual areawide lease sales in the Western and Central Planning Areas and two sales (2003 and 2005) in the reduced Sale 181 Eastern Gulf program area.

Proposed Final Program Options

Western Gulf of Mexico

Key Comparative Results. Net benefits from producing total available resources in this program area would range from \$7 billion in the lower price case to \$26 billion in the higher price case. The area is in the higher range of environmental sensitivity. It is in the lower range of primary productivity and produces roughly 5 percent of the commercial fisheries landings for the Gulf of Mexico region. Eight companies have endorsed leasing in this planning area during the preparation of this 5-year program.

Selected Comments. The Louisiana Department of Natural Resources commented in support of the proposed annual areawide lease sales in the Western and Central Gulf. The Department of the Navy's Assistant Secretary for Installations and Environment reiterated that proposed leasing in this area does not appear to pose any conflicts with military activities and cited the use of an existing Memorandum of Agreement to address such issues during the individual lease sale process. The NOIA and API endorsed the proposed annual areawide lease sales in this area.

Testimony was presented at two hearings on the draft EIS that were held in the Gulf of Mexico region. In New Orleans, five individuals testified: two representatives of environmental organizations recommended that alternatives to OCS oil and gas be developed, two speakers from Port Fourchon discussed the need to improve infrastructure servicing that area, and a representative of an oil and gas organization expressed support for the proposed OCS leasing in the Gulf of Mexico. In Houston, an official of the City of Corpus Christi and two representatives of oil and gas organizations endorsed the proposed program.

Options

- (1) Proposal as adopted for the proposed program: five sales (2002, 03, 04, 05, 06) in the area depicted in map 7
- (2) No sale
- (3) Other

Discussion

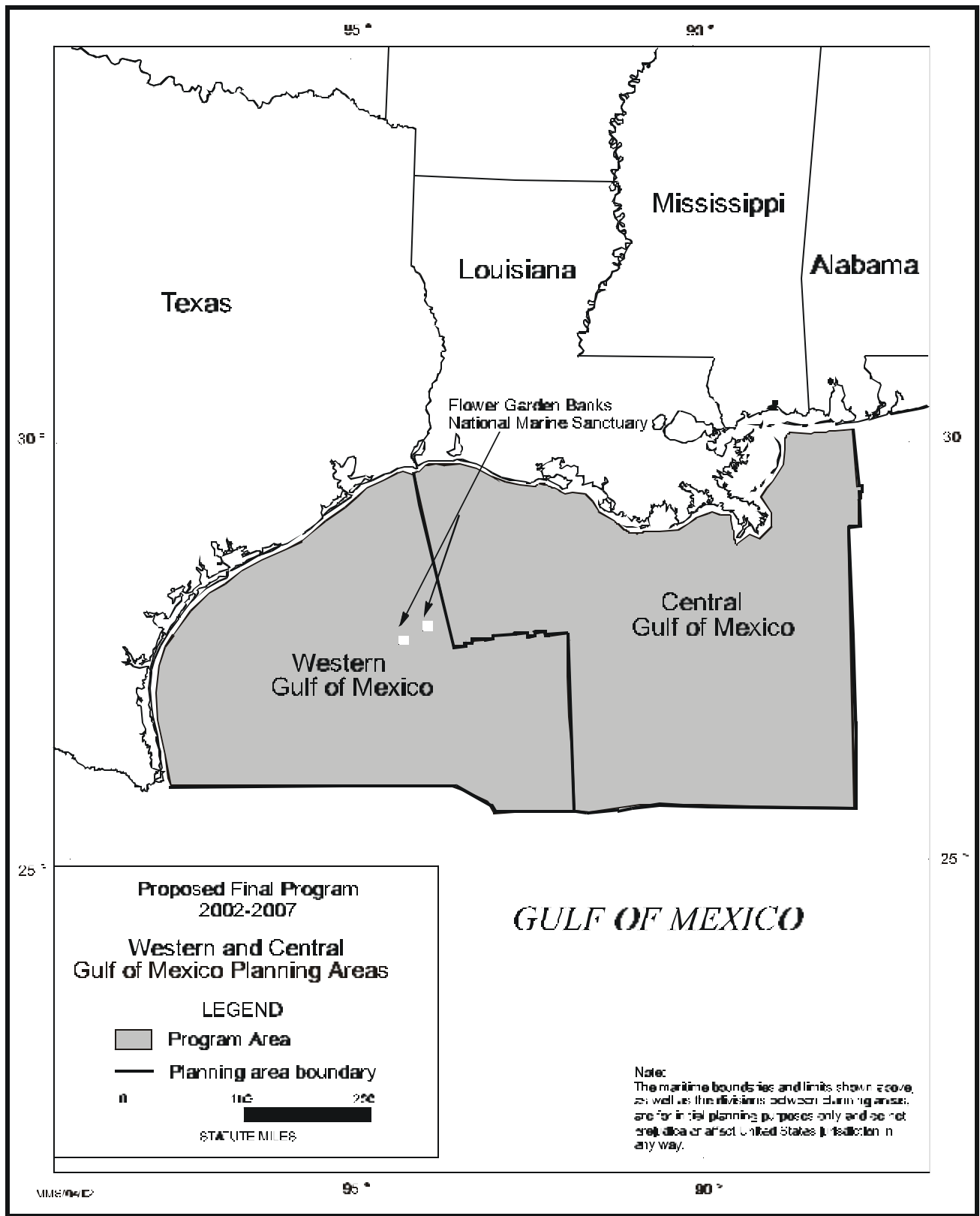
Option 1 (5 Sales)

Valuation. The net benefits of anticipated production would be \$2.6 billion in the lower price case and \$12.6 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 1. The probability of an oil spill of 1,000 barrels or more in this area under this alternative would be 62-85 percent. A summary of the EIS findings follows.

Water Quality—Structure placement produces turbidity that can temporarily degrade affected waters; normal background concentrations of suspended solids will return when activity ceases. Confined portions of some channels may be unable to assimilate bilge water and sanitary wastes, thus resulting in some minor regional degradation. Compliance with U.S. Coast Guard regulations would assist in avoiding most impacts to such receiving waters. Overall marine water quality impacts from routine activities would be minor as compliance with NPDES permit requirements minimizes or avoids most impacts. Oil-spill impacts to water quality could range from minor to moderate depending on dispersion and weathering.

Air Quality—Existing concentrations of pollutants are well within the NAAQS. The emissions associated with the proposed final 5-year program would result in only a very small increase in concentrations, and total levels would remain well within the NAAQS. The contribution from existing OCS emissions is small. The added contribution from the proposed final 5-year program would be much smaller. Impacts from oil spills and in situ burning could be localized and of short duration, and therefore impacts to air quality would be minor.



Map 7. Western and Central Gulf of Mexico Planning Areas

Marine Mammals—Impacts from routine operations and from contact with spilled oil could be minor for sperm whales. Northern right, blue, fin, sei, and humpback whales might occur in the Gulf of Mexico, but all are considered rare, and impacts from either routine operations or accidents are negligible. Commonly sighted cetaceans on the continental shelf include bottlenose dolphins, pantropical spotted dolphins, Risso's dolphins, and dwarf/pygmy sperm whales. Impacts to these species from routine operations range from negligible (e.g., vessel trips) to minor (explosive structure removals). Impacts from accidents could be minor to moderate.

Terrestrial Mammals—Routine operations affecting terrestrial mammals include construction and maintenance of onshore infrastructure and pipelines and support vehicle/vessel traffic. Generally, impacts to terrestrial mammals are predicted to be negligible from routine operations and oil spills.

Marine and Coastal Birds—Impacts to coastal habitats of marine and coastal birds would be minor. Potential impacts to marine and coastal bird species from routine operational discharges may occasionally lead to sublethal stress indirectly or possibly directly through prolonged exposure or the ingestion of affected prey species. However, based on the low concentrations of discharged contaminants within an open-ocean environment, any impact would be negligible. If a large spill occurred in shallow water and reached coastal waters and shorelines, the possibility exists for relatively large numbers of some listed bird species to be affected in a minor to moderate way.

Fish Resources—Increased turbidity from installation and discharge activities could cause fish to move temporarily. However once put in place, platforms might serve as artificial reefs or fish attraction devices benefiting those species preferring bottom relief (e.g., snappers, groupers, spadefish). Hydrocarbons from spilled oil can affect adult fish and planktonic eggs and larvae of managed fish species and their prey; however, because of the wide dispersal of early life history stages of fish in the surface waters, the impacts if spills occur should be minor.

Turtles—Routine operations that may affect turtles include structure placement and removal, operational discharges and wastes, vessel and aircraft traffic, and noise. Overall impacts to sea turtles from these impact-producing activities are predicted to be minor. If oil spills occur and contact sea turtles, impacts could be minor to moderate.

Coastal Habitats—Routine operations that could affect coastal habitats include construction of infrastructure such as onshore support bases and

pipeline landfalls. Overall potential impacts to coastal habitats associated with routine operations are predicted to be minor. Overall impact of oil spills on barrier beaches and dunes would be minor, since spilled oil is unlikely to persist on barrier beaches and dunes because they are high-energy habitats. However, if a large oil spill reaches coastal wetlands, there is a reasonable possibility these resources may not fully recover even if remedial action is taken.

Seafloor Habitats—Routine operations that could affect seafloor habitats include placement and removal of structures and operational discharges. Overall impact from the routine would be negligible, and impacts associated with contact from spilled oil could be minor to moderate, depending on the size and location of the spill. Topographic features or banks support sensitive hard-bottom species including corals, coralline algae, sponges, and reef fishes. The “Topographic Features” stipulation establishes a no-activity zone effectively protecting the associated benthic communities from impacts. Chemosynthetic (seep) communities are protected from damage associated with anchoring and placement of structures by siting restrictions requirements. If an oil spill were to occur near a seafloor habitat, the biota could be affected. There could be lethal effects on localized areas, but once the feature was clear of oil, the community would recover without mitigation.

Essential Fish Habitat—Most of the coastal and marine waters are considered essential habitat for life stages of one or more managed species. Sediment disturbance during placement of infrastructure or installation of pipelines will increase turbidity, which in turn would lower the water quality in a small area for a limited amount of time, causing fish to disperse temporarily. Drilling discharges would alter the grain size distribution and chemical characteristics of sediments around a drill site, which would change the benthic habitat prey species and spawning sites for red snapper. During platform removal, explosives might injure managed fish species or destroy communities that are prey for managed fish species. Most potential impacts to habitat from accidents would be minor. However, should an oil spill occur and reach coastal wetlands, more persistent moderate impacts could occur.

National Marine Sanctuaries—The Flower Garden Banks National Marine Sanctuary is located off Texas and Louisiana. The sensitive coral communities are protected by the “Topographic Features” stipulation’s “no activity zone” and zone that requires shunting of drilling muds and cuttings. Anchoring and emplacement of structures are prohibited. Because of the depths of the Flower Garden Banks, if an oil spill occurs, the biota would

probably not be affected by subsurface oil unless that oil came into immediate contact with a bank feature.

National Parks, Reserves, and Refuges—Padre Island National Seashore is located adjacent to areas in which oil and gas activities could occur. No infrastructure would be sited in national parks, national wildlife refuges, or national estuarine research reserves. Some OCS-related trash and debris might wash up on beaches, and vessel wakes can erode shorelines along inlets, channels, and harbors. However, existing mitigation measures limit vessel speeds in inland waterways and aircraft altitudes over these areas, so impacts would be minor.

Population, Employment, and Regional Income—The main effect would be the employment generated by the expected routine OCS oil and gas activity. Along the entire Gulf coast, the proposed action is likely to add between 400,000 and 1.3 million person-employment years over a 40-year period. Even for the areas most affected, however, impacts are predicted to be negligible to minor. Oil spills could affect such activities as beach recreation, diving, or commercial fishing, recreational fishing, and sight-seeing and have slight and temporary impacts to specific local areas.

Land Use and Existing Infrastructure—Minor to negligible impacts to land usage are predicted by the continuation of leasing and subsequent exploration and development activities. Some of the labor market areas could exhibit as much as a 2.5-percent net migration change in a single year. The few areas equipped to support deepwater development activities might experience more sustained stress on infrastructure. Without mediating efforts at infrastructure restoration, the impact in these isolated cases could be moderate. Nonetheless, for the great majority of coastal labor market areas, the impacts to infrastructure are predicted to be negligible.

Fisheries—Impact factors that potentially affect fisheries include vessel traffic and structure placement, presence, and removal. Overall potential impacts to commercial and recreational fisheries from routine operations and accidents could be negligible to moderate. Generally, impacts from oil spills could be minor to moderate.

Tourism and Recreation—Helicopter noise, trash and debris, platform placement, pipeline landfall, and vessel traffic could affect tourism and recreational activities. Routine operations are predicted to have negligible to moderate impacts. The proposed action could result in oil contacting coastal areas from pipeline or platform spills close to shore. While oiled beach sediments are usually easily removed by mechanical means, such

shoreline impact would effectively close the beach to public use for the duration of cleanup operations and could be considered minor to moderate.

Sociocultural Systems and Environmental Justice—Routine operations would have negligible to moderate impacts to sociocultural systems; accidents could cause negligible impacts. Expansions or contractions of oil and gas activity could cause sociocultural systems in some communities to experience stress (moderate impact) while other communities would have the capacity to weather episodes of rapid industry change and may even thrive in doing so (negligible to minor impact). It is possible that new onshore infrastructure could be located near minority or low-income populations and could produce adverse health or environmental impacts.

Archaeological Resources—Compliance with existing regulations would protect archaeological resources from most impacts associated with routine activities; however, some impacts could occur. Overall impacts to archaeological resources would be minor. Oil spills could affect coastal historic and prehistoric archaeological resources and could result in unavoidable loss of information, causing impacts that could be minor to moderate.

Option 2 (No Sale)

Valuation. The net benefits of anticipated production would be zero since no activity would occur.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 5. A summary of the EIS findings is presented below. Other effects associated with this option are described briefly in the preceding general discussion of proposed final program options for scheduling lease sales.

The OCS production from new Western Gulf leases would be forgone and replaced by imported oil transported by tankers entering the United States primarily through the Gulf of Mexico. Tanker spills are less controllable and often larger than pipeline or platform spills and could occur anywhere along tanker routes to major oil ports such as Houston.

Activity on leases resulting from past sales would continue, including the drilling of exploration wells, placement of platforms and pipelines, and the use of shore bases for support activities. Any reduction in impacts from the adoption of this option would not constitute a significant change in the levels of ongoing activity. Any reduction in impact-causing factors would be partially offset by the increased use of Gulf routes for tankers importing oil. This could include tanker routes in areas not offered for lease in any of

the options in this program in the Eastern Gulf of Mexico. Spills from such tankers would result in some degradation of shorebird habitat and lethal effects on fish resources and could cause a dieback of more wetlands and estuarine habitat than would occur as a result of proposed leasing. In addition, tanker spills, which often occur close to shore, would have a greater potential to close beaches than spills associated with production from new OCS leases.

Central Gulf of Mexico

Key Comparative Results. Net benefits from producing total available resources in this program area would range from \$10 billion in the lower price case to \$36.7 billion in the higher price case. The area is in the higher range of environmental sensitivity and primary productivity, and it produces roughly 91 percent of the commercial fisheries landings for the Gulf of Mexico Region. Eight companies have endorsed leasing in this planning area during preparation of this 5-year program.

Selected Comments. While commenting in favor of the proposed lease sales in the Gulf of Mexico, the Louisiana Department of Natural Resources expressed concerns related to environmental monitoring and socioeconomic effects, as well as the need for local impact assistance. (Representatives of the MMS Gulf of Mexico Region Office met with State of Louisiana officials on January 24, 2002, to discuss their concerns). The Governor of Alabama commented that the State continues to oppose leasing within 15 miles of the Baldwin County coast, including blocks in the Central Gulf Planning Area. The Governor also reiterated concerns about cumulative impacts and impact assistance, and he stipulated that all OCS program activities must be carried out in full compliance with Alabama's laws, rules, regulations, and Coastal Zone Management Program.

Additional comments relating to this planning area are summarized above in the discussion of Western Gulf of Mexico options.

Options

- (1) Proposal as adopted for the proposed program: five sales (2003, 04, 05, 06, 07) in the area depicted in map 7
- (2) No sale
- (3) Other

Discussion

Option 1 (5 Sales)

Valuation. The net benefits of production would be \$4.7 billion in the lower price case and \$28 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 1. The probability of an oil spill of 1,000 barrels or more in this area under this alternative would be 86-99 percent. A summary of the EIS findings follows.

Water Quality—Structure placement and operational discharges would have a minor effect on coastal water quality. Confined portions of some channels might be unable to assimilate bilge water and sanitary wastes, thus resulting in some minor degradation. Overall marine water quality impacts from routine activities would be minor as compliance with NPDES permit requirements minimizes or avoids most impacts. Oil-spill impacts could range from minor to moderate depending on dispersion and weathering of spilled oil.

Air Quality—Existing concentrations of pollutants are well within the NAAQS. Emissions would result in only a very small increase in concentrations, and total levels would remain well within the NAAQS. Ambient ozone concentrations presently exceed the Federal standard in several Gulf coastal areas. The contribution from existing OCS emissions is small, and the added contribution would be smaller.

Marine Mammals—Impacts from routine operations and from contact with spilled oil could be minor for sperm whales. Impacts to manatees from routine operations and oil spills would be negligible. However, if a spill were to occur and contact them, minor to moderate impacts could result. Five endangered mysticete species (northern right, blue, fin, sei, and hump-back whale) are considered rare in the Gulf of Mexico. Impacts to these species from either routine operations or accidents should be negligible.

Terrestrial Mammals—Potentially affected species include Alabama, Choctawhatchee, St. Andrew, and Perdido Key beach mice and the Florida salt marsh vole. The beach mice are limited to coastal dune habitats along Alabama and northwest Florida coasts. The Florida salt marsh vole is found near Cedar Key and would not come into contact with routine OCS operations. Potential impacts of routine operations or accidents on listed terrestrial mammals could be negligible.

Marine and Coastal Birds—Impacts to coastal habitats of marine and coastal birds such as whooping cranes, bald eagles, and brown pelicans would be minor. Potential impacts to marine and coastal bird species from routine operational discharges would be negligible. If a large spill occurred in shallow water and reached coastal waters and shorelines, the possibility exists for relatively large numbers of some bird species to be affected in a minor to moderate way.

Fish Resources—Routine installation activities could temporarily displace Gulf sturgeon, although studies have not shown that Gulf sturgeon associate with offshore platforms. Installation and discharge activities could cause fish to move from an area temporarily. Once put in place, platforms might serve as artificial reefs or fish attraction devices. Explosive removals of platforms can kill or stun these fish. Spilled oil can affect adult fish by direct contact with gills or by direct ingestion; however, because of the wide dispersal of early life history stages of fishes in surface waters, the impacts if spills occur would be minor.

Turtles—Explosive platform removals can injure or kill turtles; however, mitigation measures can reduce any impacts to minor. Rapid dilution of operational discharges and compliance with NPDES permits reduce impacts. If a spill occurred near a nesting beach during the spring and summer nesting season, oil could affect nests and nesting activity, causing minor to moderate impacts.

Coastal Habitats—Impacts to coastal habitats including beaches and dunes and wetlands from routine operations would be minor. Overall impact of oil spills on barrier beaches and dunes would be minor as spilled oil is unlikely to persist on barrier beaches and dunes because these are high-energy habitats. However, if a large oil spill reaches coastal wetlands, overall viability of the wetland resource would not be threatened, and impacts would be minor to moderate.

Seafloor Habitats—Topographic features or banks support sensitive hard-bottom species including corals, coralline algae, sponges, and reef fishes. The “Topographic Features” stipulations effectively protect the features/banks from impacts. The pinnacle trend is located along the shelf edge off Mississippi and Alabama, and stipulations protect these resources by requiring operators to avoid them. Chemosynthetic (seep) communities are protected from damage associated with anchoring and placement of structures by siting requirements. If an oil spill were to occur near a seafloor habitat, the biota could be affected, but in most cases recovery would occur within months to a few years, and any impacts would be minor.

Essential Fish Habitat—Sediment disturbance during placement of infrastructure will increase turbidity of habitat in a small area for a limited amount of time, causing fish to disperse temporarily. Installation of pipelines also disturbs, resuspends, and displaces bottom sediments and might smother sessile benthic prey species. Most potential impacts to habitat from accidents would be minor; however, should an oil spill occur and reach coastal wetlands, more persistent moderate impacts could occur.

National Parks, Reserves, and Refuges—The Gulf Islands National Seashore is located adjacent to Central Gulf of Mexico areas in which oil and gas activities could occur. Some OCS-related trash and debris could wash up on beaches. Impacts if oil spills occur would depend on the size and specific location of the oil spill and the effectiveness of cleanup procedures. Oil contact with reserves and refuges could cause death of wetland vegetation and associated wildlife; oil saturation and trapping by vegetation and sediments could cause minor to moderate impacts.

Population, Employment, and Regional Income—Employment impact is likely to be concentrated in New Orleans, Lafayette, and Houma. Even for the areas most affected, however, added employment demands are not likely to tax the local labor market, and impacts are predicted to be negligible to minor.

Land Use and Existing Infrastructure—The proposal would continue a steady pace of offshore leasing that has persisted in the Gulf of Mexico for more than two decades. Minor to negligible impacts to land use are predicted. The few areas equipped to support deepwater development activities might experience more sustained stress on infrastructure (e.g., Port Fourchon area of coastal Louisiana).

Fisheries—Turbidity and noise could temporarily drive fishes away and preclude fishing, but impacts would be temporary. Total area precluded from fishing would vary depending on the nature of a particular structure or the phase of operation, but areas of preclusion are small relative to the entire fishing area. If oil spills occur, commercial fisheries could suffer oil soaked gear and contaminated fish, and impacts would be minor.

Tourism and Recreation—Most of the platforms and associated drilling operations would occur far from shore and have no direct effects on coastal park and recreation areas. Some tourists and recreation users on coastal beaches would be affected by the sight or sound of OCS oil and gas operations, but few, if any, would forego their visits because of these routine

intermittent operations. Spilled oil contacting recreation beaches and requiring cleanup activity would effectively close the beaches for the duration of cleanup operations.

Sociocultural Systems and Environmental Justice—Routine operations would have negligible to moderate impacts to sociocultural systems, and accidents could cause negligible impacts. Expansions or contractions of oil and gas activity could cause sociocultural systems in some communities to experience stress (moderate impact), while other communities would have the capacity to weather episodes of rapid industry change and may even thrive in doing so (negligible to minor impact). It is possible that new onshore infrastructure could be located near minority or low-income populations and could produce adverse health or environmental impacts.

Archaeological Resources—Compliance with existing regulations would protect archaeological resources from most impacts associated with routine activities; however, some impacts could occur but would be minor. Oil spills could affect coastal historic and prehistoric archaeological resources and could result in unavoidable loss of information, causing impacts that could be minor to moderate.

Option 2 (No Sale)

Valuation. The net benefits of anticipated production would be zero since no activity would occur.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 5. A summary of the EIS findings is presented below. Other effects associated with this option are described briefly in the preceding general discussion of proposed final program options for scheduling lease sales.

The OCS production from new Central Gulf leases would be forgone and replaced by imported oil transported by tankers entering the United States primarily through the Gulf of Mexico. Tanker spills are less controllable and often larger than pipeline or platform spills and could occur anywhere along tanker routes to ports such as Lake Charles and others along the Mississippi River.

Activity on leases resulting from past sales would continue, including the drilling of exploration wells, placement of platforms and pipelines, and the use of shore bases for support activities. Any reduction in impacts from the adoption of this option would not constitute a significant change in the levels of ongoing activity. Any reduction in impact-causing factors would

be partially offset by the increased use of Gulf routes for tankers importing oil. This could include tanker routes in areas not offered for lease in any of the options in this program in the Eastern Gulf of Mexico. Spills from such tankers would result in some degradation of shorebird habitat and lethal effects on fish resources and could cause a dieback of more wetlands and estuarine habitat than would occur as a result of proposed leasing. In addition, tanker spills, which often occur close to shore, would have a greater potential to close beaches than spills associated with production from new OCS leases.

Eastern Gulf of Mexico

Key Comparative Results. Net benefits from producing total available resources in this program area would range from \$179 million in the lower price case to \$1.3 billion in the higher price case. The area is in the higher range of environmental sensitivity. It is in the mid-range of primary productivity. Eight companies have endorsed leasing in this area during the preparation of this 5-year program.

Selected Comments. The Governor of Alabama commented that the State continues to oppose leasing within 15 miles of the Baldwin County coast (other points are summarized above in the Central Gulf discussion). The Florida Department of Environmental Protection cited its comments on the draft proposed program, which indicated that Florida does not object to the proposed Eastern Gulf sales, and stated that it looks forward to reviewing subsequent individual sale proposals and related NEPA documentation. The Louisiana Department of Natural Resources stated it is pleased that the proposed program includes 2 proposed sales in the westernmost part of the Eastern Gulf of Mexico in addition to the normal 10 sales in the Central and Western Planning Areas. It also commented that more sales in this area would achieve a more equitable balance of OCS-related benefits and costs borne by Louisiana. The Department of the Navy's Assistant Secretary for Installations and Environment reiterated that the proposed leasing in this area does not appear to pose any conflicts with military activities and that such issues may be addressed during the individual sale process under an existing Memorandum of Agreement.

The Pinellas County Board of Commissioners commented that it strongly opposes OCS oil and gas leasing in any portion of the Eastern Planning Area. The U.S. representative of District 1 of Florida commented that the voters in that district and elsewhere in Florida oppose proposed leasing in this area mainly due to potential negative effects on tourism.

Several industry commenters requested that the Eastern Gulf program area be restored to its full original configuration under the previous 5-year program. The NOIA and API recommended three sales in that configuration, and the API recommended that the sales be held immediately after Central Gulf sales on the same dates. The Domestic Petroleum Council cited the Eastern Gulf in recommending that the proposed program be expanded to preserve options that could be needed to meet future energy needs, including consideration of additional acreage in this planning area for leasing. Representatives of NOIA, API, and the Independent Petroleum Association of America testified at public hearings on the draft EIS and requested increased access to Eastern Gulf acreage.

Options

- (1) Proposal as adopted for the proposed program: two sales (2003, 05) in the program area depicted in map 8
- (2) No sale
- (3) One sale (2003) in the same area as Option 1
- (4) Three sales (2003, 05, 07) in the same area as Option 1
- (5) Other

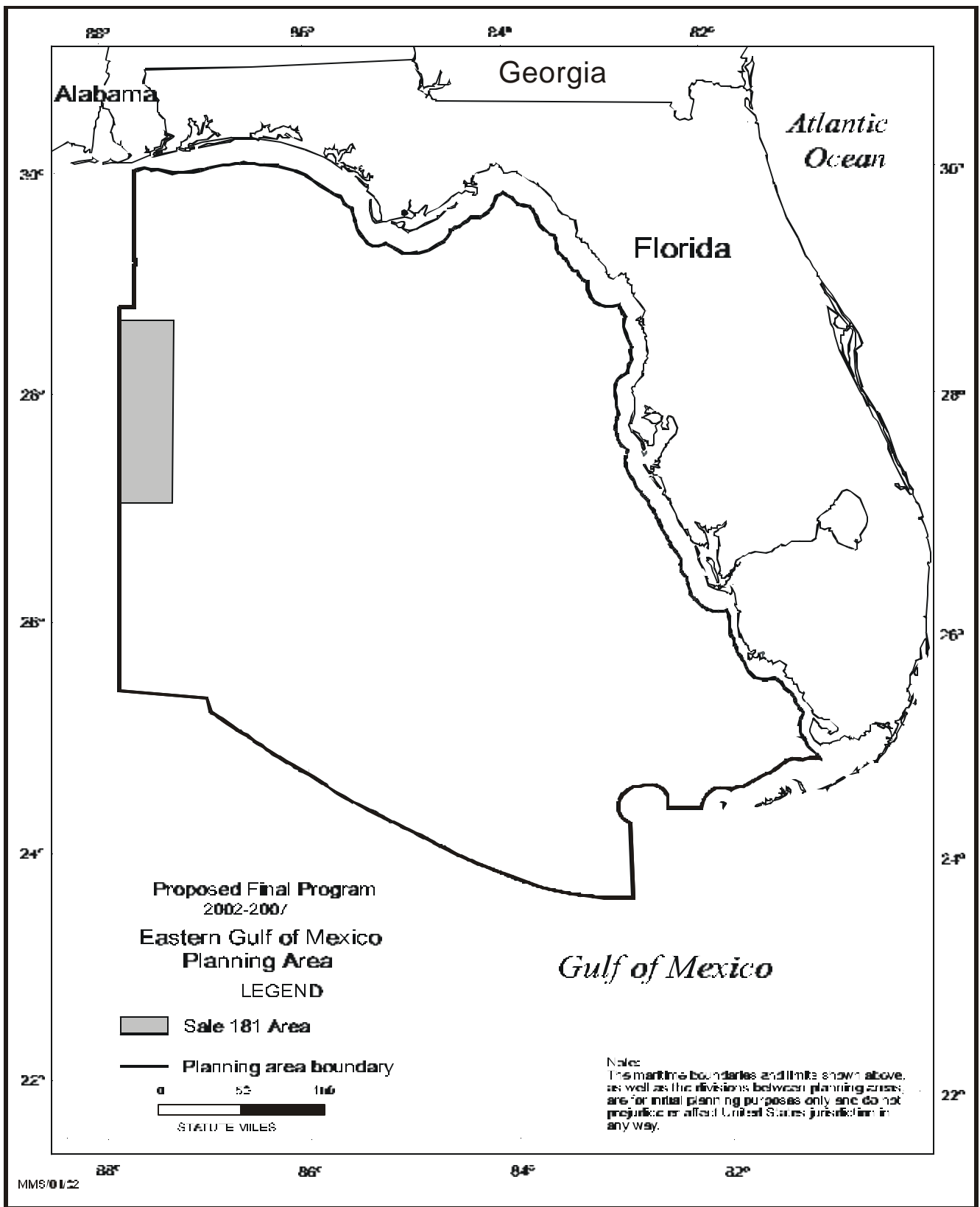
Discussion

Option 1 (2 Sales)

Valuation. The net benefits of anticipated production would be \$97 million in the lower price case and \$1.1 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 1. The probability of an oil spill of 1,000 barrels or more in this area under this alternative would be 14-23 percent. A summary of the EIS findings follows.

Water Quality—Structure placement and operational discharges would have a minor effect on coastal water quality. Overall marine water quality impacts from routine activities would be minor, since compliance with NPDES permit requirements minimizes or prevents most impacts. Oil-spill impacts could range from minor to moderate, depending on dispersion and weathering of spilled oil.



Map 8. Eastern Gulf of Mexico Program Area

Air Quality—Emissions would result in only a very small increase in concentrations, and total levels would remain well within the NAAQS. Ambient ozone concentrations presently exceed the Federal standard in several Gulf coastal areas. The contribution from existing OCS emissions is small, and the added contribution would be smaller.

Marine Mammals—Impacts to the sperm whale from routine operations and from contact with spilled oil could be minor. Impacts to manatees from routine operations and oil spills is negligible. However, if a spill were to occur and contact them, minor to moderate impacts could result. Five endangered mysticete species (northern right, blue, fin, sei, and humpback whale) are considered rare in the Gulf of Mexico. Impacts from either routine operations or accidents should be negligible.

Terrestrial Mammals—Threatened or endangered terrestrial species include Choctawhatchee, St. Andrew, and Perdido Key beach mice and the Florida salt marsh vole. The beach mice are limited to mature coastal dune habitats along Alabama and northwest Florida coasts, which are protected areas buffered from contact with OCS-related infrastructure and contact with spilled oil. The Florida salt marsh vole is found near Cedar Key and would not come into contact with routine OCS operations. Potential impacts of routine operations or accidents to listed terrestrial mammals could be negligible.

Marine and Coastal Birds—Impacts to coastal habitats of marine and coastal birds such as whooping cranes, bald eagles, and brown pelicans would be minor. Potential impacts to marine and coastal bird species from routine operational discharges would be negligible. If a large spill occurred in shallow water and reached coastal waters and shorelines, the possibility exists for relatively large numbers of some bird species to be affected in a minor to moderate way.

Fish Resources—Installation and discharge activities could cause fish to move from an area temporarily. Once put in place, platforms might serve as artificial reefs or fish attraction devices. Explosive removals of platforms can kill or stun these fish. Spilled oil can affect adult fish by direct contact with gills or by direct ingestion. Pelagic eggs and larvae might contact surface oil and be injured or killed. However, because of the wide dispersal of early life history stages of fishes in surface waters, the impacts if spills occur would be minor.

Turtles—Explosive platform removals can injure or kill turtles; however, mitigation measures can reduce any impacts to minor. If a spill occurred near a nesting beach during the spring and summer nesting season, oil could affect nests and nesting activity, causing minor to moderate impacts.

Coastal Habitats—Impacts to coastal habitats including beaches and dunes and wetlands from routine operations would be minor. Overall impact of oil spills on barrier beaches and dunes would be minor since spilled oil is unlikely to persist because these are high-energy habitats.

Seafloor Habitats—The pinnacle trend is located along the shelf edge offshore of Mississippi and Alabama, and stipulations protect this resource by requiring operators to avoid it. Chemosynthetic (seep) communities are protected from damage associated with anchoring and placement of structures by siting restrictions requirements. If an oil spill were to occur near a seafloor habitat, the biota could be affected, but in most cases, recovery occurs within months to a few years and any impacts would be minor.

Essential Fish Habitat—Sediment disturbance during placement of infrastructure would increase turbidity of habitat in a small area for a limited amount of time, causing fish to disperse temporarily. Installation of pipelines also disturbs, resuspends, and displaces bottom sediments. Most potential impacts to habitat from accidents would be minor. However, should an oil spill occur and reach coastal wetlands, more persistent moderate impacts could occur.

National Parks, Reserves, and Refuges—The Gulf Islands National Seashore is located north of areas in which oil and gas activities could occur. Some OCS-related trash and debris could wash up on beaches. Impacts if oil spills occur would depend on the size and specific location of the oil spill and the effectiveness of cleanup procedures. Oil contact with reserves and refuges could include death of wetland vegetation and associated wildlife, oil saturation, and trapping by vegetation and sediments, causing minor to moderate impacts.

Population, Employment, and Regional Income—The main effect would be the employment generated by the expected routine OCS oil and gas activity, which for Eastern Gulf of Mexico activities would probably be concentrated along the eastern Louisiana, Mississippi, and Alabama coasts. Even for the areas most affected, impacts are predicted to be negligible to minor.

Land Use and Existing Infrastructure—Much of the onshore activity generated would be concentrated in the coastal areas of eastern Louisiana and in Mississippi and Alabama. Minor to negligible impacts to land use are predicted.

Fisheries—Impact factors that potentially affect fisheries include vessel traffic and placement and the presence and removal of structures. Overall potential impacts to commercial and recreational fisheries from routine operations and accidents could be negligible to moderate. Generally, impacts from oil spills could be minor to moderate.

Tourism and Recreation—Helicopter noise, trash and debris, platform placement, pipeline landfalls, and vessel traffic could affect tourism and recreational activities, but most of these effects would be in coastal Louisiana, Mississippi, and Alabama. Routine operations are predicted to have negligible to moderate effects on travel, tourism, and recreation. It is unlikely that activity in the Eastern Gulf would result in oil contacting coastal areas given the distance from shore.

Sociocultural Systems and Environmental Justice—Routine operations would have negligible to moderate impacts to sociocultural systems in Louisiana, Mississippi, or Alabama; accidents could cause negligible impacts. Expansions or contractions of oil and gas activity could cause sociocultural systems in some communities to experience stress (moderate impact), whereas other communities will have the capacity to weather episodes of rapid industry change and may even thrive in doing so (negligible to minor impact). It is possible that new onshore infrastructure could be located near minority or low-income populations and could produce adverse health or environmental impacts.

Archaeological Resources—Compliance with existing regulations will protect archaeological resources from most impacts associated with routine activities; however, some impacts could occur. Overall impact to archaeological resources would be minor. Oil spills could affect coastal historic and prehistoric archaeological resources and could result in unavoidable loss of information, causing impacts that could be minor to moderate.

Option 2 (No Sale)

Valuation. The net benefits of anticipated production would be zero since no activity would take place.

Environmental Impacts. This option is analyzed in the draft EIS under Alternatives 3 and 5. Alternative 3 examines the effects of excluding the Eastern Gulf, Hope Basin, and Norton Basin areas from the leasing program, and Alternative 5 examines the “No Action” scenario. A summary of the EIS findings is presented below. Other effects associated with this option are described briefly in the preceding general discussion of proposed final program options for scheduling lease sales.

The OCS production from new Eastern Gulf leases would be forgone and replaced by imported oil transported by tankers entering the United States primarily through the Gulf of Mexico. Tanker spills are less controllable and often larger than pipeline or platform spills and could occur anywhere along tanker routes. Tankers moving through the Eastern Gulf could spill oil in areas not being considered for leasing, thereby causing impacts to parts of the planning area and coastline that would not be affected by any of the proposed leasing options and associated activities.

Exclusion of this area from the program would eliminate water discharges and potential oil spills, making impacts to water quality off Florida negligible, although overall impact to water quality would be the same as the proposed action, because of activities in the Central and Western Gulf of Mexico. Air quality impacts to portions of Alabama and Florida would be reduced. The potential impact to the West Indian Manatee would be negligible. Marine and coastal birds most likely to benefit from selection of this option are those that concentrate in Alabama shoreline habitat (for feeding or nesting) such as the brown pelican, gulls, terns, shore birds, and waterfowl. Excluding this program area from leasing would reduce the potential for a shallow water pipeline spill to impact the Gulf sturgeon and would eliminate impacts to sea turtles locally, especially on nesting beaches. While oil spills from OCS operations on new leases issued as a result of the proposed Eastern Gulf sales would not occur, spills from existing leases in this area or in the adjacent Central Gulf Planning Area could still affect resources.

Option 3 (1 Sale)

Valuation. The net benefits of anticipated production would be \$64 million in the lower price case and \$328 million in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 2. The probability of an oil spill of 1,000 barrels or more in this area under this alternative would be 10-12 percent. A summary of the EIS findings follows.

The MMS estimates that having only one Eastern Gulf sale would result in the production of approximately half of the oil and gas resources estimated to be produced if two sales are conducted as proposed under Option 1. There would be a corresponding reduction in the level of exploration, development, and production activity. There would be fewer drilling discharges and, therefore, less turbidity locally. Also, less bottom would be disturbed because fewer platforms and pipelines will be put in place. Impacts to population, employment, and regional income would be slightly lower in Alabama, where the supply base will be located, and in Mississippi and Louisiana, where much of the material will be manufactured or fabricated.

Option 4 (3 Sales)

Valuation. The net benefits of anticipated production would be \$130 million in the lower price case and \$1.3 billion in the higher price case.

Environmental Impacts. This option is analyzed in the draft EIS under Alternative 4. The probability of an oil spill in this area under this alternative would be 17-32 percent. A summary of the EIS findings follows.

Adding a third sale would result in the production of additional oil and gas resources and would cause a corresponding increase in the level of exploration, development, and production activity in the Eastern Gulf and support facilities in the Central Gulf. The increase in OCS activities in the Eastern Gulf would similarly increase the level of various types of disturbance, effluents and emissions, sedimentation, noise, and other impact agents. All oil produced in the Eastern Gulf program area is assumed to be transported by pipeline to existing or projected facilities in the Central Planning Area. Up to three new gas pipeline landfalls could result, and possibly one or two new pipeline shore facilities could be built in Louisiana or Alabama. However, such pipeline landfalls and construction of pipeline shore facilities in Alabama and Louisiana should have minimal effects on wetlands due to State regulatory requirements and effective mitigation. Thus, the impact level would remain the same as under Option 1. Considering the assumed number of oil spills for this option, the overall impact to submerged seagrass beds generally is predicted to be the same as under Option 1. There would be very little, if any, economic stimulus to the Florida Panhandle region. The impacts to population, employment, and regional income in the Gulf of Mexico are predicted to be the same as under Option 1.

B. Fair Market Value Options

Introduction

Relevant considerations for formulating and selecting options to assure receipt of fair market value for OCS leases and the rights they convey are discussed below. The full range of options available for the Secretary's consideration in deciding on a proposed final program for 2002-2007 is presented. A brief analysis of fair market value provisions is presented in part IV.

Previous Program Proposals

Both the draft proposed program and proposed program provided for setting minimum bid levels by individual lease sale based on market conditions and for continuing use of a two-phase postsale bid evaluation process that has been in effect, with modifications, since 1983 to meet this requirement.

A detailed description of the existing procedures for assuring the receipt of fair market value is presented in a *Federal Register* notice (64 *FR* 37560) that was published on July 12, 1999. Another source for information about fair market value procedures is *Summary of Procedures for Determining Bid Adequacy at Offshore Oil and Gas Lease Sales: Effective July 1999, with Sale 174* (available on the internet at www.gomr.mms.gov/homepg/lseale/fmv).

Comments on the Proposed Program

Some industry commenters reiterated previous recommendations they made relating to fair market value procedures. The consensus of those recommendations is to set a constant minimum bid for the 5-year tenure of the program and to reinstate the procedures (3-bid rule) in effect before the 1999 revisions cited above.

The one substantive change that the MMS made to bid adequacy procedures in 1999 was elimination of a bias in Phase 1. Specifically, certain categories of tracts were formerly accepted without undergoing a full-scale evaluation in Phase 2 if they received at least three bids and their third highest bid was 50 percent or more of their highest bid. Such tracts having the smallest high bids were found to be most likely to satisfy this "50 percent rule." This is the case because of the presence of the minimum bid requirement, which provides a floor on the magnitude of the losing bids.

To eliminate this bias and simultaneously to encourage more competitive bidding, a second requirement for acceptance of high bids on 3-or-more bid tracts was added in Phase 1. This new condition requires that the high bid itself must be in the top 75 percent of all high bids on 3-or-more bid tracts within a designated water depth range. The MMS believes that this modification leveled the bid acceptance rules and has since generated a more appropriate set of tracts to be sent to Phase 2 for further evaluation.

Proposed Final Program Options

The MMS analysis of fair market value issues is an ongoing process, and no new options are included for consideration in this proposed final program. Changes in the approach for determining the minimum bid level in combination with other policy changes might be considered in subsequent sale-specific documents. Also, as in previous 5-year programs, modifications may be made to the bid adequacy procedures to incorporate knowledge gained from their use in lease sales or in the event that the basic underlying lease sale process changes.

Options

- (1) Proposal as adopted in the proposed program: Set minimum bid levels by individual lease sale based on market conditions and continue use of a two-phase postsale bid evaluation process
- (2) Other

IV. PROPOSED FINAL PROGRAM ANALYSES

A. Analysis of Energy Needs

Introduction

Section 18(a) requires the Secretary to formulate an OCS leasing program to “best meet national energy needs for the five-year period following its approval or reapproval” and requires the Secretary to consider “the location of such [OCS] regions with respect to, and the relative needs of, regional and national energy markets.” The draft proposed and proposed programs discussed national energy needs based on the Energy Information Administration’s *Annual Energy Outlook 2001 (December 2000)* and other information submitted by the Department of Energy in response to the MMS request for information that was issued in December 2000. The following analysis of energy needs for the proposed final program draws on that previous information.

Oil and Natural Gas Consumption and Production and Forecast Energy Needs

Annual Energy Outlook 2001

The previous program proposals cited *Outlook 2001* in stating that the United States currently gets about 60 percent of all its energy needs from oil and natural gas. Table 1, which presents projections from *Outlook 2001*, forecasts that oil and gas will account for 64.1 percent of the Nation’s total energy consumption by 2010 and 67.8 percent of total U.S. consumption by 2020. Total energy consumption is projected to increase from 96.1 quadrillion Btu to 127.0 quadrillion Btu between 1999 and 2020, an average annual increase of 1.3 percent.

Table 2 shows the *Outlook 2001* forecast for U.S. oil production, and table 3 shows the forecast for natural gas production.

Outlook 2001 projects that total U.S. petroleum demand is projected to grow from 19.5 million barrels per day in 1999 to 25.8 million in 2020. Advances in exploration and production technologies do not offset declining oil production in the forecast. The overall U.S. demand for natural gas is projected to grow by 2.3 percent per year on average, from 21.4 trillion cubic feet in 1999 to 34.7 trillion cubic feet in 2020, primarily as a result of rapid projected growth in demand for electricity generation

Table 1. U.S. Energy Consumption
[quadrillion Btu]

Energy Source	1999	2005	2010	2015	2020
Petroleum	38.0 (39.5%)	41.4 (38.7%)	44.4 (38.9%)	47.5 (39.3%)	50.6 (39.8%)
Natural Gas	22.0 (22.9%)	25.9 (24.2%)	28.8 (25.2%)	32.4 (26.8%)	35.6 (28.0%)
Other	36.1 (37.6%)	39.7 (37.1%)	40.9 (35.8%)	40.9 (33.9%)	40.8 (32.1%)
Total	96.1	107.0	114.1	120.8	127.0

Source: *Annual Energy Outlook 2001* (reference case forecast)
Numbers in parentheses are percentages of the total.

Table 2. U.S. Crude Oil Production
[million barrels per day]

Area	1999	2005	2010	2015	2020
Gulf of Mexico	1.4 (23.7%)	2.0 (35.1%)	1.9 (36.5%)	1.8 (35.3%)	1.7 (33.3%)
Other	4.5 (76.3%)	3.7 (64.9%)	3.3 (63.5%)	3.3 (64.7%)	3.4 (66.6%)
Total	5.9	5.7	5.2	5.1	5.1

Source: *Annual Energy Outlook 2001* (reference case forecast)
Numbers in parentheses are percentages of the total.

Table 3. U.S. Natural Gas Production
[Tcf per year]

Area	1999	2005	2010	2015	2020
Gulf of Mexico	6.4 (35.0%)	6.0 (29.6%)	6.3 (27.9%)	6.6 (25.7%)	7.2 (25.3%)
Other	11.9 (65.0%)	14.3 (70.4%)	16.3 (72.1%)	19.1 (74.3%)	21.3 (74.7%)
Total	18.3	20.3	22.6	25.7	28.5

Source: *Annual Energy Outlook 2001* (reference case forecast)
Numbers in parentheses are percentages of the total.

(excluding cogenerators), which is expected to triple between 1999 and 2020. While the Nation is moving toward ever greater reliance on oil and natural gas to meet its energy needs, it must also rely more heavily on Federal lands to supply the needed oil and gas. About 60 percent of the remaining recoverable oil resources and about 52 percent of the remaining recoverable natural gas resources are on Federal lands including the OCS.

Annual Energy Outlook 2002

Outlook 2002 validates the overall analysis of energy needs that has been based on *Outlook 2001* and presented here and in the previous program proposals. *Outlook 2002* projects similar trends with respect to long-range forecasts for energy consumption as well as natural gas and petroleum demand. While actual percentages vary slightly, the projections in *Outlook 2002* are consistent with those in *Outlook 2001*.

Meeting Energy Needs

Contribution of OCS Oil and Gas

The OCS program continues to play a very important role in meeting the Nation's energy needs. Natural gas from the OCS supplies 25 percent of domestic gas production. Offshore oil also accounts for about 25 percent of oil production. The share of petroleum demand met by net imports is projected to increase from 51 percent to 64 percent. Production of oil and gas from the OCS directly reduces the amount of oil that must be imported from abroad, much of it from politically unstable regions, thereby lessening the threat to the U.S. economy posed by supply disruptions and higher prices.

Over 60 percent of the hydrocarbons produced from the OCS are in the form of natural gas, the clean burning, environmentally preferred source of energy for electricity generation. As many coal-fired generating facilities have switched to burning gas, demand has risen significantly. This increase in demand, as well as growing residential demand, has raised concerns that the volumes of natural gas available from traditional sources will have to increase dramatically to maintain adequate supplies in the future.

Alternatives to the Contribution of OCS Oil and Gas

The MMS uses its *Market Simulation Model* to estimate the amount and percentage of alternative sources of energy the economy would have to adopt if the 5-year program were not implemented and its proposed lease sales were not held in the future. For the present 5-year program, the MMS commissioned a new study of the parameters (elasticities) that form the

basis of the *Market Simulation Model*. A detailed discussion of the model and alternative sources of energy is given in *Energy Alternatives and the Environment (MMS 2001-096)*.

The MMS ran the model for cases representing all program alternatives with both low and high price assumptions. The purpose of these runs was to demonstrate the response of oil and gas markets to a reduction in OCS production under a variety of circumstances. The low price case is based on prices of \$18 per barrel of oil and \$2.11 per thousand cubic feet (Mcf) of gas. The high price case uses prices of \$30 per barrel of oil and \$3.52 per Mcf of gas. The results for the different program alternatives are virtually identical.

In comments on the proposed program, API characterized the MMS *Market Simulation Model* as “flawed” because it deals with oil and gas markets separately instead of simultaneously. An earlier version of the model included a routine that synthesized the interaction between the oil and gas markets. In practice, that routine had little effect on the results of the analysis, while it greatly complicated the construction, operation, and exposition of the model. Because the results are meant to give an approximate answer to the question of how markets might respond to a loss of OCS oil and gas, the MMS decided that it was prudent to keep the model as simple and straightforward as possible rather than strive for academic perfection.

Alternative Sources of Oil and Gas. The percentage results from the new elasticity estimates are virtually identical to past results for oil. When high price assumptions are used, oil lost from OCS production would be substituted by 88 percent greater imports, 6 percent conservation, 3 percent increased onshore production, and 3 percent switching to gas. However, the percentage results for gas differed significantly from previous estimates. For the high price assumptions, the new results show that gas lost from OCS production would be substituted by 28 percent onshore production, 40 percent switching to oil, 16 percent conservation, and 16 percent imports.

Table 4 shows the most important results of runs comparing the proposed action with no action under low and high price assumptions. The percentage estimates, which are very similar for the low and high price cases, are the most interesting and useful numbers in the table. They imply that for each 100 barrels of OCS oil not produced:

- Onshore U.S. oil production will increase by about 3 barrels;
- U.S. oil imports will increase by about 86 to 88 barrels;
- Conservation will account for a decline in U.S. oil consumption of about 6 or 7 barrels; and
- Switching to gas will amount to the equivalent of about 4 or 5 barrels.

Table 4. Results of the No Action Alternative

Sector	% of OCS Production		Quantity Involved	
	Low	High	Low	High
<i>Oil</i>				
OCS Production (BBO)	-100%	-100%	-3.1	-9.2
Onshore Production (BBO)	3%	3%	0.1	0.2
Imports (BBO)	86%	88%	2.7	8.1
Conservation (BBOE)	7%	6%	0.2	0.5
Switch to Gas (BBOE)	5%	4%	0.2	0.4
<i>Gas</i>				
OCS Production (Tcfg)	-100%	-100%	-9.3	-17.7
Onshore Production (Tcfg)	26%	28%	2.4	4.9
Imports (Tcfg)	16%	16%	1.4	2.8
Conservation (Tcfg)	17%	16%	1.6	2.9
Switch to Oil (Tcfge/BBOE)	42%	40%	3.8/0.7	7.1/1.3
Induced Oil Imports (BBO)	NA	NA	0.6	1.1

BBO = billion barrels of oil, BBOE = the Btu equivalent of billion barrels of oil, Tcfg = trillion cubic feet of natural gas, Tcfge = the Btu equivalent of trillion cubic feet of natural gas.

In absolute terms, expectations are for:

- Onshore production to make up 100 million of the 3.1 billion barrels lost through no action at the low price and 200 million of the 9.2 billion barrels of OCS production lost at the high price;
- Imports to account for 2.7 billion barrels at the low price and 8.1 billion barrels at the high price;
- Conservation to total the equivalent of 200 million barrels at the low price and 500 million at the high price; and
- Switching to gas the equivalent of 200 million barrels at the low price and 400 million at the high price. (The market simulation model deals with the oil and gas markets in isolation. In reality, if OCS production were curtailed, less OCS gas would lead to more imported oil, conservation, and domestic onshore oil and gas production than the model shows.)

In absolute terms at the low price, this amounts to:

- 2.4 Tcf of onshore gas;
- 1.4 Tcf of gas imports (mostly from Canada);
- Conservation equivalent to 1.6 Tcf of gas; and
- Switching to oil equivalent to 3.8 Tcf of gas, substituting for the 9.3 Tcf of OCS natural gas lost through no action.

In absolute terms at the high price, this amounts to:

- 4.9 Tcf of onshore gas;
- 2.8 Tcf of gas imports (mostly from Canada);
- Conservation equivalent to 2.9 Tcf of gas; and
- Switching to oil equivalent to 7.1 Tcf of gas, substituting for the 17.7 Tcf of OCS natural gas lost through no action.

Of the reduced consumption of natural gas at the low price, the equivalent of about 3.8 Tcf of gas would consist of switching to oil. This means that an additional 0.7 billion barrels of oil would clear the market. Assuming that imports constitute 86 percent of any additional oil traded in the U.S.

market, this adds another 0.6 billion barrels of oil to imports. Thus, as a result of no action, an additional 3.3 billion barrels of oil would have to be imported by the United States. The corresponding import estimate for the high price case is 14.3 billion barrels of oil.

Alternative Sources of Energy (Other Than Oil and Gas). Many alternative sources of energy probably will contribute to the U.S. energy future. However, no new anticipated energy technology is likely to make a significant contribution over the next 10 to 15 years. Even after that, the present sources of energy in our economy, especially natural gas and oil, are expected to be important contributors to our energy mix for the foreseeable future.

The Federal or State governments might use taxes, subsidies, or specific measures (like requiring non-gasoline powered vehicles) to encourage or mandate a different mix of energy alternatives than the market would choose. Such government actions would most likely be directed at vehicle or electric generating plant fuels and fuel consumption. Any of these measures favoring a particular energy alternative probably would have important environmental consequences, some of which might be negative.

Regional Energy Considerations

As discussed in the previous program proposals, the western part of the country (including Alaska) produces more hydrocarbons than it consumes, while the opposite is true for the eastern part. The West South Central Census Division (Arkansas, Louisiana, Oklahoma, and Texas) consumes more oil and gas as well as overall energy than any other region, but still produces significantly more than it consumes. Therefore, all regions depend on these areas as sources of oil and gas in addition to imports.

The previous analyses also indicated that pipeline capacity is expected to grow to accommodate increasing natural gas production and provide access to new expanding areas of production including the deepwater Gulf of Mexico OCS. *Outlook 2001* concluded that there would be enough natural gas pipeline capacity to handle the projected total U.S. gas market of 35 trillion cubic feet in 2020. *Outlook 2002* affirms that pipeline capacity in 2020 will be sufficient to accommodate projected production.

Report of the National Energy Policy Development Group (NEPDG)

The NEPDG, established by the President to develop a national energy policy, issued its report in May 2001. The report recommended that the

Secretary of the Interior continue OCS oil and gas leasing on a predictable schedule to help meet energy needs for the foreseeable future.

Conclusion

As summarized in the previous program proposals, the Nation's energy situation is one in which domestic petroleum production is continuing to decline and imports are continuing to increase. Several energy forecasts project that domestic consumption will increase substantially to the point that by 2015 the United States will need more oil and gas than it will be able to produce and import. While alternative sources of energy are expected to contribute, no new anticipated technology is likely to make a significant contribution in the next 15 years. Even after that, the current sources of energy—especially oil and natural gas—will continue to be important contributors to the Nation's energy mix. The Nation's current and projected energy situation will require continued leasing, exploration, and development of OCS lands in an environmentally sound manner.

B. Analysis of Environmental Concerns

A final EIS for the 5-year program for 2002-2007 has been prepared to accompany this decision document for the Secretary's consideration. Preparation of the EIS began with publication of a Notice of Intent to Prepare an Environmental Impact Statement in the *Federal Register* (65 *FR* 77667). That notice started the scoping process by calling for comments and information to be used to determine the scope of the planned EIS, and scoping continued through the close of the comment period on the draft proposed program. A draft EIS was prepared and issued with the proposed program. The final EIS accompanying this proposed final program analyzes the leasing schedule that was proposed in the draft proposed and proposed programs and was previously analyzed in the draft EIS along with four alternative lease sale schedules (see part III of this decision document and chapter 2 of the final EIS for descriptions of the proposed action and alternatives). The potential environmental impacts that correspond to proposed and alternative lease sale options are summarized following each set of options presented in part III.

There is additional information relating to environmental concerns in the analyses of social costs, environmental sensitivity and marine productivity, and other uses of the OCS presented in part IV.C below. Also, much pertinent information is available in other documents cited and incorporated by reference.

C. Comparative Analysis of OCS Planning Areas

The required comparative analysis of section 18 factors and considerations for the proposed final program decision is presented below. This analysis addresses the section 18 criteria that lend themselves to quantification as well as those that do not. Factors that are quantified to facilitate comparison among OCS planning areas include social benefits and environmental sensitivity and marine productivity. The other factors are addressed more qualitatively. The comparative analysis also takes into account comments received, other considerations pursuant to the OCS Lands Act and NEPA, and applicable judicial opinions.

Social Value

Introduction

The MMS performs a cost-benefit, or "net benefits" analysis of the value of all available resources in the proposed final program. The analysis examines the benefits to society associated with OCS oil and natural gas production commensurate with the accompanying costs. The results of the required comparisons of areas provide one factor in determining the location and timing of lease sales in the program. In addition to this "relative ranking" of program areas, the MMS performs a "valuation of program alternatives" analysis, which estimates net benefits of anticipated production from each of the four EIS alternatives under which lease sales are proposed. The EIS alternatives examined consist of the program proposal and three comprehensive groupings of the various program area options and do not include the "No Action" alternative.

Estimates of Hydrocarbon Resources and Anticipated Production

Resource estimates from the 2000 National Assessment form the basis for MMS's evaluation of program areas. The National Assessment projects the undiscovered, conventionally and economically recoverable oil and natural gas resources located outside of known oil and gas fields on the U.S. OCS. The assessment considers recent geophysical, geological, technological, and economic information and uses a play analysis approach to resource appraisal called the Geologic Resource Assessment Program (GRASP). A complete description of the methodology and results of resource estimation is available in the MMS report *Outer Continental Shelf Petroleum Assessment 2000*, which may be accessed on the internet at www.mms.gov/revaldiv/RedNatAssessment.htm. There is also a discussion of resource estimation in the companion paper to this document that relates to the 5-year program economic analysis (MMS Report 2001-088).

Economically recoverable resource estimates from the National Assessment are combined with other information to derive estimates of anticipated

production. This additional information includes estimates of the number of blocks expected to be leased, past statistics concerning the number of leased blocks that will be drilled, analyses regarding the number of blocks expected to be drilled that will yield discoveries, and expectations for discoveries large enough to be commercial. Ultimately, this information is combined in subjective estimates of anticipated production, which provide the basis for valuation of program alternatives and EIS analyses. Table 5 presents the relative ranking of the program areas proposed for lease sales based on the estimates of *total available resources* for each area. Table 6 shows anticipated production estimates for Alternative 1—the Proposed Action, and table 7 gives such estimates for Alternatives 2 and 4. Estimates for Alternative 3—Exclude Some Planning Areas are not provided but can be determined by referring to the estimates in table 6 for the areas that would be excluded.

Table 5. Estimated Program Area Hydrocarbon Resources Available as of July 2002

Program Area	Oil (BBO)	Gas (Tcf)
Western Gulf of Mexico	2.83	16.17
	4.55	23.65
Central Gulf of Mexico	4.16	21.19
	7.14	31.95
Eastern Gulf of Mexico	0.12	0.50
	0.29	1.16
Beaufort Sea	1.68	Uneconomic
	2.87	
Chukchi Sea	0.96	Uneconomic
	6.06	
Cook Inlet	0.42	0.56
	0.50	0.86
Hope Basin*	0.02	0.58
	0.04	1.43
Norton Basin*	0.02	1.04
	0.03	1.59

Base case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with high case estimates (\$30 per bbl and \$3.52 per Mcf) underneath. Oil estimates are expressed in billions of barrels (BBO); natural gas estimates are expressed in trillions of cubic feet (Tcf).

*Estimates for these areas are based on the results of a study that shows what would be available to a local market (processing plant) at given prices.

Economic Analysis

Economic Assumptions. The proposed final program is assumed to have a lifespan (leasing and subsequent exploration, development, and production) of approximately 40 years starting in July 2002. Given the uncertainty of future price levels, or the "price paths," for oil and gas throughout the 2002 to 2042 period, the MMS developed a range of possible prices bounded by a low price and a high price scenario. The low oil price is set at \$18 per barrel (bbl). This price is consistent with typical worldwide levels over the last 10 years or so. The high oil price of \$30 per bbl is consistent with the oil price highs that have been reached intermittently during the past 2 years. The MMS set the natural gas wellhead price at 66 percent of the oil price on a Btu-equivalent basis. The low natural gas wellhead price is \$2.11 per Mcf and the high price is \$3.52 per Mcf. In both cases, inflation-adjusted—or "real"—prices are assumed to remain constant throughout the productive life of all leases resulting from the new 5-year program. A real discount rate of 7 percent was chosen for the proposed final program analysis.

Table 6. Anticipated Production for Alternative 1—The Proposed Action

Program Area	Oil (BBO)	Gas (Tcf)
Western Gulf of Mexico	0.68	4.05
	1.31	7.20
Central Gulf of Mexico	1.38	7.95
	3.27	16.50
Eastern Gulf of Mexico	0.10	0.41
	0.17	0.68
Beaufort Sea	1.02	Uneconomic
	1.71	
Chukchi Sea	0.96	Uneconomic
	2.42	
Cook Inlet	0.28	0.38
	0.34	0.58
Hope Basin*	0.01	0.29
	0.02	0.71
Norton Basin*	0.01	0.26
	0.01	0.40

Base case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with high case estimates (\$30 per bbl and \$3.52 per Mcf) underneath. Oil estimates are expressed in billions of barrels (BBO); natural gas estimates are expressed in trillions of cubic feet (Tcf).

*Estimates for these areas are based on the results of a study that shows what would be available to a local market (processing plant) at given prices.

The ultimate purpose of the total resource analysis for the new 5-year program is to help the Secretary select the best schedule of proposed sales. Estimates of all available program area resources are used in the relative ranking of areas, which helps the Secretary make basic decisions about size, timing, and location of sales. In addition, the MMS estimates the benefits and costs associated with the leasing proposed in each program area for each of the EIS alternatives. This "valuation of program alternatives" allows the Secretary to compare more closely the relative benefits of the specific leasing options under consideration.

Table 7. Anticipated Production for Alternatives 2 and 4

Program Area	Oil (BBO)	Gas (Tcf)
<i>Alternative 2: Slow the Pace of Leasing</i>		
Eastern Gulf of Mexico	0.07	0.27
	0.09	0.34
Beaufort Sea	0.68	Uneconomic
	1.14	
Chukchi Sea	0.96	Uneconomic
	1.21	
Cook Inlet	0.14	0.19
	0.17	0.29
Hope Basin*	0.01	0.15
	0.01	0.36
<i>Alternative 4: Accelerated Leasing</i>		
Eastern Gulf of Mexico	0.12	0.50
	0.26	1.02
Beaufort Sea	1.70	Uneconomic
	2.85	

Base case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with high case estimates (\$30 per bbl and \$3.52 per Mcf) underneath. Oil estimates are expressed in billions of barrels (BBO); natural gas estimates are expressed in trillions of cubic feet (Tcf).

*The estimate for this area is based on the results of a study that shows what would be available to a local market (processing plant) at given prices.

The basic methodology used in the valuation of program alternatives does not differ from that used for the relative ranking. However, because the valuation of program alternatives compares the values associated with specific leasing options rather than the values of all available resources in the program areas under consideration, this analysis requires additional assumptions. These include the number of sales held in each area; the location and quantity of the resources expected to be leased and discovered; and the timing of the lease sales and ensuing exploration, development, and production. Figure 2 summarizes the components of the MMS net benefit analysis. The methodology for the economic analysis and the additional assumptions required for the valuation of program alternatives are described more fully in MMS Report 2001-088.

Figure 2. Components of the Net Benefits Analysis

<p>Available Undiscovered, Economically Recoverable Resources* x Assumed Price = Gross Revenue</p> <p>Gross Revenue - Private Costs = Net Economic Value (NEV)</p> <p>NEV - Environmental and Social Costs = Net Social Value (Net Supply-Side Benefits)</p> <p>Net Social Value + Consumer Surplus Benefits (Net Demand-Side Benefits) = Net Benefits</p>
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*The estimates for the relative ranking analysis are based on all resources anticipated to be available for leasing in each program area as of July 2002. The estimates for the valuation of program alternatives are based solely on anticipated production under each EIS alternative.

Estimates of Net Economic Value. Estimates of net economic value based on the resources in each area and on anticipated production are obtained using price forecasts consistent with those employed in developing the resource estimates. The net economic value of oil and gas resources represents the net expected present (discounted) worth of oil and gas market values less the discounted real cost of exploring, developing, producing, and transporting the resources to market.

For each of the program alternatives, the net economic value estimates are based on production and infrastructure projections appropriate for the schedule of sales for the specific alternative. In addition, the numbers of

wells, platforms, etc., used in developing the net economic values are consistent with those used in the environmental cost analysis and EIS.

Estimates of Environmental Costs. The development and production of OCS oil and gas resources and the transportation of those resources to onshore facilities entail risk of damage to the environment. A serious risk of damage to the Nation's coastal environments is also posed when imported oil is used as an alternative to production of OCS oil and gas resources. The estimation of these risks and the costs associated with resulting environmental damages or the prevention of those damages is the focus of the environmental cost analysis.

Environmental costs are the costs to society not directly considered in the calculation of net economic value. More specifically, they are costs not reflected in the (private) exploration, development, production, and transportation costs associated with getting OCS oil and gas to market. Such costs are referred to as external costs because they are not factored into normal market transactions and are instead imposed, at least in part, on people other than those who produce or purchase the goods and services from which the costs arise. The environmental cost analysis includes estimates of only such costs that are judged to be readily and accurately quantifiable in monetary terms. The MMS uses the newly completed Offshore Environmental Cost Model to estimate environmental costs. This is a nine-sector model that uses data from the latest research to estimate the impact of typical activities associated with OCS production and typical OCS oil spills. Other social and environmental costs that do not lend themselves to monetary quantification, while no less important, are examined in the 5-year program final EIS.

Net Social Value. Net social value is a more or less complete estimate of net benefits on the supply side. In economic terms, net social value is a measure of net economic rent or net producer surplus from society's point of view.

Consumer Surplus Benefits. Economists refer to net demand-side benefits associated with a product, project, or program as consumer surplus. Consumer surplus is the difference between what consumers would be willing to pay for a service or product and the (lower) price actually charged. The MMS's estimates of consumer surplus are calculated using the recently updated and repopulated *MktSym2000* model, which includes simultaneous equation system models for the international oil market and the domestic natural gas market. The oil market contains four regional production sectors and four regional consumption sectors. The natural gas model contains three production sectors and one domestic consumption sector.

Total Net Benefits. The sum of supply- and demand-side net benefits constitutes the total net benefits associated with available program area resources and the program alternatives. The estimated total net benefits of available program area resources form one of the bases for developing program options.

Conclusions from Analysis of Available Resources. Table 8 presents the net social value and net benefits of the resources anticipated to be available in each program area as of July 2002. The Central and Western Gulf of Mexico have vast existing infrastructure and large amounts of available resources that contribute to high aggregate values. Those areas have the most undiscovered, economically recoverable resources and the highest net benefits available for leasing. In addition, the value of the Central and Western Gulf has been proven over decades of OCS production. From an energy and economic perspective, they should be offered most frequently in the new 5-year program.

The Eastern Gulf of Mexico program area has relatively few total net benefits, but it is a very small area, so its net benefits per unit area are quite high. As a result, the Eastern Gulf program area deserves consideration for one or more lease sales based on the economic analysis.

Considering the net benefit estimates, it would be reasonable to schedule the Beaufort Sea program area for multiple lease sales in the new 5-year program. The Cook Inlet and Chukchi Sea program areas have more modest net benefits at the lower end of the price range but still merit consideration for leasing in the 5-year program for 2002-2007. Hope Basin and Norton Basin show negative net economic values, making it inconsistent to list environmental costs and consumer surplus benefits for them. Based on the economic analysis alone, there is little support for including the Hope Basin and Norton Basin program areas in the next 5-year program. However, other considerations could support their inclusion. An area with a low or negligible estimated NEV should not be removed automatically from consideration for leasing but should be examined in light of other factors such as industry interest and unpredicted changes in costs or resource prices. Companies can have assessments that differ from those of the MMS concerning the resource potential of various areas, especially frontier areas (where any additional exploration could add significantly to a limited base of information). When deciding whether to commit investment dollars to explore unproven areas, firms may consider the possibility that an area contains much greater resources than indicated by the mean estimate.

Table 8. Estimated Net Benefits of Producing Available Program Area Resources
[All figures are in millions of 2002 dollars.]

Program Areas	Net Economic Value	Environmental and Social Costs	Net Social Value	Consumer Surplus Benefits	Net Benefits
Western Gulf of Mexico	\$4,385 \$21,935	-\$239 -\$388	\$4,146 \$21,547	\$2,852 \$4,391	\$6,998 \$25,938
Central Gulf of Mexico	\$6,424 \$30,727	-\$292 -\$488	\$6,132 \$30,239	\$3,999 \$6,507	\$10,131 \$36,746
Eastern Gulf of Mexico	\$75 \$1,210	-\$3 -\$7	\$72 \$1,203	\$107 \$254	\$179 \$1,457
Beaufort Sea	\$1,591 \$7,545	-\$47 -\$82	\$1,544 \$7,463	\$1,318 \$2,250	\$2,862 \$9,713
Chukchi Sea	\$338 \$13,641	-\$20 -\$130	\$318 \$13,511	\$634 \$4,000	\$952 \$17,511
Cook Inlet	\$543 \$1,348	-\$16 -\$23	\$527 \$1,325	\$325 \$402	\$852 \$1,727
Hope Basin	* *	* *	* *	* *	* *
Norton Basin	* *	* *	* *	* *	* *

Base case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with high case estimates (\$30 per bbl and \$3.52 per Mcf) underneath.

*Net economic value is considered negligible in the base case. Assuming no exploration or other activity, social costs would not be incurred, and there would be no net social value or consumer surplus benefits.

If a leasing schedule is based on low resource price assumptions and pessimistic exploration expectations, the resulting schedule may prove to be too restrictive if resource prices rise or other conditions change. Thus, there is a strong rationale for using expected or even optimistic economic and geologic assumptions in formulating a 5-year leasing schedule.

Valuation of Program Alternatives. Table 9 shows the estimates of net benefits for program areas under Alternative 1—The Proposed Action and under Alternatives 2 and 4. It also gives the totals for each of the categories of benefits and costs that went into calculating the net benefits. Only those program areas in Alternatives 2 and 4 that are different from the proposed action are shown. Alternative 3 is not shown because its only difference from the proposal would be the removal of the Eastern Gulf of Mexico program area, whose benefits can be discerned by an examination of Alternative 1.

Table 9. Program Area Net Benefits
[All figures are in millions of 2002 dollars.]

Program Areas	Net Economic Value	Environmental Costs	Net Social Value	Consumer Surplus Benefits	Net Benefits
<i>Alternative 1</i>					
Western Gulf of Mexico	\$1,967 \$11,410	(\$65) (\$108)	\$1,902 \$11,302	\$701 \$1,302	\$2,603 \$12,604
Central Gulf of Mexico	\$3,445 \$25,100	(\$112) (\$219)	\$3,333 \$24,881	\$1,403 \$3,140	\$4,736 \$28,021
Eastern Gulf of Mexico	\$10 \$929	(\$2) (\$3)	\$8 \$926	\$89 \$150	\$97 \$1,076
Beaufort Sea	\$170 \$4,328	(\$36) (\$69)	\$134 \$4,259	\$801 \$1,342	\$935 \$5,601
Chukchi Sea	\$257 \$5,350	(\$24) (\$63)	\$233 \$5,287	\$635 \$1,599	\$868 \$6,886
Cook Inlet	\$267 \$1,015	(\$10) (\$14)	\$259 \$1,001	\$218 \$274	\$477 \$1,275
Hope Basin	* *	* *	* *	* *	* *
Norton Basin	* *	* *	* *	* *	* *
<i>Alternative 2</i>					
Eastern Gulf of Mexico	\$7 \$255	(\$1) (\$2)	\$6 \$253	\$58 \$75	\$64 \$328
Beaufort Sea	\$15 \$2,571	(\$27) (\$46)	(\$12) \$2,525	\$631 \$1,057	\$619 \$3,582
Chukchi Sea	\$257 \$1,292	(\$28) (\$40)	\$229 \$1,252	\$754 \$950	\$983 \$2,202
Cook Inlet	\$110 \$471	(\$6) (\$8)	\$104 \$463	\$129 \$163	\$233 \$626
Hope Basin	* *	* *	* *	* *	* *
<i>Alternative 4</i>					
Eastern Gulf of Mexico	\$22 \$1,114	(\$2) (\$5)	\$20 \$1,109	\$110 \$225	\$130 \$1,334
Beaufort Sea	\$676 \$6,833	(\$52) (\$88)	\$624 \$6,745	\$1,124 \$1,883	\$1,748 \$8,628

Low range estimates are shown first, with high range estimates underneath.

*Net economic value is considered negligible. Assuming no exploration or other activity, social costs would not be incurred, and there would be no net social value or consumer surplus benefits.

Table 9 includes an anomaly in the results shown for the Chukchi Sea area under the lower price case. The higher estimate of net benefits in Alternative 2 compared to Alternative 1 (as well as the estimate of benefits for total available resources in table 8) is the result of greater consumer surplus benefits for this area under Alternative 2 versus Alternative 1. This stems from exploration and development scenarios estimating similar quantities of oil being produced under either alternative, while assuming that production under Alternative 2 would occur in 5 fewer years than under Alternative 1. When discounted to the present, this more rapid production increases the consumer surplus measure. Therefore, in comparing these alternatives for the Chukchi Sea, the lower case estimates should be weighed in light of the more consistent higher case estimates as well as other considerations.

Table 10 shows the estimates of total net benefits for each of the program alternatives as well as the totals for each of the categories of benefits and costs that went into calculating the net benefits. Alternative 5 (No Action) has no benefits or costs and therefore is not shown.

Table 10. Valuation (Net Benefits) of Program Alternatives
[All figures are in millions of 2002 dollars.]

Program Areas	Net Economic Value	Environmental Costs	Net Social Value	Consumer Surplus Benefits	Net Benefits
<i>Alternative 1</i> (Proposed Action)	\$6,118 \$48,132	(\$249) (\$476)	\$5,869 \$47,656	\$3,847 \$7,807	\$9,716 \$55,463
<i>Alternative 2</i> (Slow the Pace of Leasing)	\$5,801 \$41,099	(\$239) (\$423)	\$5,562 \$40,676	\$3,677 \$6,689	\$9,239 \$47,365
<i>Alternative 3</i> (Exclude Some Planning Areas)	\$6,108 \$47,203	(\$247) (\$473)	\$5,861 \$46,730	\$3,759 \$7,659	\$9,620 \$54,389
<i>Alternative 4</i> (Accelerated Leasing)	\$6,636 \$50,822	(\$328) (\$497)	\$6,308 \$50,325	\$4,191 \$8,423	\$10,499 \$58,748

Low range estimates are shown first, with high range estimates underneath.

Environmental Sensitivity and Marine Productivity

Introduction

Under Section 18(a)(2)(G) of the OCS Lands Act, the Secretary of the Interior must consider the relative environmental sensitivity and marine productivity of the different areas of the OCS as one factor in determining the timing and location of potential oil and natural gas lease sales. This analysis ranks the planning areas of the OCS where lease sales are proposed in terms of their relative environmental sensitivity and marine productivity. These rankings are not an assessment of the potential effects of OCS oil and gas leasing and production activities on the environment. Such effects are discussed in detail in the 5-year program final EIS and are summarized above in part III.

Relative Environmental Sensitivity

As described in the analysis of this factor in the previous program proposals, spilled oil presents the primary environmental risk from offshore oil and gas activities. The natural resources of coastal ecosystems face the most significant environmental consequences from contact with spilled oil. The Environmental Sensitivity Index (ESI), developed by the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce, provides a systematic method for compiling data in standardized formats to map shoreline sensitivity to spilled oil. Coastal States and other Federal agencies such as the MMS assist in ESI development efforts and use ESI products. The ESI ranking approach has a strong scientific basis, and it has proven to be effective as a planning and response tool for over two decades. Information on the ESI ranking system is available at www.response.restoration.noaa.gov/esi/esiintro.html. For the Norton Basin Planning Area, where digital ESI data are not available, the MMS used data in the Natural Resource Damage Assessment Model for Coastal and Marine Environments to provide a general characterization of the coastline for this analysis.

Analysis of all the available data produced rankings for the eight planning areas in which oil and gas leasing is proposed for 2002-2007. The rankings are presented in table 11. These environmental sensitivity rankings are based on a scale of 1 to 10, with 1 representing rocky shorelines that are least susceptible to damage by oiling and 10 representing wetlands shorelines that are most susceptible. In Table 11, the range of environmental sensitivity is from 9.6 for the Central Gulf of Mexico to 5.8 for Cook Inlet.

In comments on the proposed program the ADGC disagreed with the results of the MMS analysis of environmental sensitivity based on ESI and NRDAM/CME data and requested that the ranking table be adjusted to better characterize Alaska planning areas. The environmental sensitivity analysis does rely heavily on the ESI, which offers the best data available for comparing coastal areas as required by section 18. The analysis does not use NRDAM/CME to predict impacts but to fill in gaps in ESI data with similar information on shoreline characteristics for the required comparison. The ranking table (table 11 below) has been generated based on these data and cannot be revised in the absence of improved, more detailed, and more complete data. As such newer data do become available to the MMS, they will be applied to future environmental impact and environmental sensitivity analyses.

Table 11. Ranking of OCS Planning Areas in Proposed Final 5-Year Leasing Program by Relative Environmental Sensitivity

Central Gulf of Mexico
Eastern Gulf of Mexico
Western Gulf of Mexico
Beaufort Sea
Chukchi Sea
Hope Basin
Norton Basin
Cook Inlet

Marine Productivity

Productivity is defined as the amount of plant or animal biomass that is produced over a period of time. Primary production is the assimilation of organic carbon through photosynthesis. The most common example is simply a plant using energy from the sun to make organic matter. Secondary production may be measured by the amount and availability of fish for harvest. Figure 1 of the draft proposed program depicted marine primary production for U.S. coastal waters including all OCS areas available for leasing consideration, and table 8 presented primary and secondary productivity data for all of those areas. The analysis for the proposed program concentrated on the eight OCS planning areas in which oil and gas lease sales are proposed, and this analysis for the proposed final program takes the same approach.

Secondary productivity, as indicated by commercial fish landings, tends to correspond to primary productivity. Areas of high primary productivity—especially marine areas characterized by fronts, convergence, and upwelling—generally produce higher fish catches. Fish catch is a useful indicator of marine productivity, so this analysis examines 1999 landings data prepared by the National Marine Fisheries Service (NMFS) and by coastal States. Fish landing data by both recreational and commercial fisheries are collected and analyzed on an annual basis by the NMFS. The Fisheries Statistics and Economics Division of the NMFS has automated data summarizing the U.S. commercial fisheries landings. In addition to metric tons by State, data are also available by major port where fish were landed, species, finfish and shellfish groups, fishing gears, and price per pound. The web sites for commercial fisheries landings that provide these data, as well as the landings data in table 12, may be accessed directly from www.st.nmfs.gov/st1/commercial/landings/annual_landings.html, and State of Alaska 1999 permit and fishing activity by year, State, census area, or city may be accessed at http://www.cfec.state.ak.us/MENUS/MNUS_FS.HTM.

The MMS obtained coastal and OCS primary production data and 1999 commercial fisheries landings data by planning area. Table 12 shows coastal and OCS primary production and secondary production (as indicated by commercial fisheries landings in metric tons) for the eight OCS areas under consideration for leasing in the 5-year program for 2002-2007. The web sites for commercial fisheries landings reported in table 12 may be accessed at www.st.nmfs.gov/st1/commercial/landings/annual_landings.html, and State of Alaska 1999 permit and fishing activity by year, state, census area, or city is available at www.cfec.state.ak.us/MENUS/MNUS_FS.HTM. The web site for State of Alaska commercial fisheries that lists selected cities having no landings attributed to them during 1999 is www.cfec.state.ak.us/cenge/1999CNNO.HTM.

The data indicate that the Alaska Region has high coastal primary production in the western area and medium productivity in the northern area including the Beaufort, Chukchi, and Bering Sea Planning Areas. Throughout the Alaska OCS, primary production is in the medium range. Combined commercial fisheries catch for the five planning areas under consideration in Alaska was 36,982.90 MT, a small fraction of the total Alaska tonnage, most of which was landed from the North Aleutian Basin Planning Area that is excluded from the program. The Beaufort Sea Planning Area listed no commercial landings during 1999 at the two ports identified by the State of Alaska, Deadhorse, and Prudhoe Bay. Some ports in the other four planning areas discussed either had no commercial landings or there were three or fewer fishermen fishing in the planning area so the data are kept confidential by NMFS. While the Cook Inlet Planning Area had the highest tonnage of the five Alaska areas in which leasing is

proposed, much of the activity was in ports in the southern part of the planning area that is not under consideration for leasing.

The Gulf of Mexico Region has a wide range of rates of coastal primary production. The nutrient rich Mississippi River feeds the high levels of production in the Central Planning Area. The Eastern Planning Area has a medium range of coastal primary production, and the Western Planning Area has low coastal primary production. The OCS in the entire Gulf of Mexico Region exhibits low primary productivity. Overall, primary productivity is lower in the Gulf of Mexico planning areas as compared to the five Alaska planning areas under consideration. However, secondary marine productivity is much greater in the Gulf of Mexico planning areas, with 884,997.5 MT of commercially landed fish in 1999.

Table 12. Primary and Secondary Marine Productivity of OCS Planning Areas

Planning Area	Primary Productivity (Coastal) gC/m ² /yr	Primary Productivity (OCS) gC/m ² /yr	Secondary Productivity (1999 Commercial Fish Landings in MT)
<i>Alaska</i>			36,982.90^a
Beaufort Sea	100-150	100-150	*
Chukchi Sea	100-150	100-150	31.28
Hope Basin	100-150	100-150	440.93 ^b
Norton Basin	100-150	100-150	1,191.69 ^b
Cook Inlet	>150	100-150	35,319.00 ^b
<i>Gulf of Mexico</i>			884,997.5^a
Western Gulf	40-100	40-100	42,150.2
Central Gulf	>150	40-100	789,504.1
Eastern Gulf	100-150	40-100	53,343.2

*No cities with commercial harvest in 1999 or less than 3 people fishing so tonnage not revealed.

^aFigures in bold are production totals for the region.

^bThese figures indicate commercial landings data for ports.

The State of Alabama is adjacent to the Central and Eastern Gulf of Mexico Planning Areas. For the purpose of comparing areas in which OCS leasing is proposed, this analysis attributes Alabama's entire commercial fish catch to the Eastern Gulf Planning Area, considering it along with the catch for Western Florida. However, it should be noted that only 12,428.2 of the 53,343.2 MT reported for the Eastern GOM Planning Area were landed in Alabama, with the remainder landed at Western Florida ports. Also the Eastern Gulf program area proposed for leasing is located much closer to the Central Gulf Planning Area and the ports in Alabama and Louisiana than to Western Florida ports such as Tampa.

Conclusion

The Alaska Region currently produces the highest tonnage of commercially landed fish. However, with the exclusion of several of the Alaska planning areas having high marine productivity (such as the North Aleutian Basin, where over half of the Alaska fish are landed), the remaining metric tonnage places the Alaska Region below the Gulf of Mexico Region (comprising three planning areas) in commercial fisheries production. Thriving commercial fisheries exist in Cook Inlet for the generally healthy stocks of Pacific salmon, groundfish, Pacific halibut, crab, and herring. Much of the ocean off northern Alaska is iced over most of the year and cannot be fished (however, subsistence activities are an important aspect of life in those areas). This supports NMFS and State of Alaska data that indicate no significant commercial harvest in the northern part of Alaska. Heavy ice cover also has an effect on primary production. Reduced penetration of sunlight results in lower primary productivity numbers for northern coastal Alaska as compared with its western coast.

Commercial fisheries production in the Gulf of Mexico includes coastal and pelagic sharks, tunas and billfish as well as economically important groundfish such as croaker, red snapper, and menhaden used in the commercial fertilizer industry. This region is known for vast expanses of coastal wetlands that act as nursery grounds for many recreational and commercial fish species. Offshore areas of the Gulf of Mexico consist predominantly of mud bottom with very little natural substrate for fish habitat. For many years, commercial and charter boat captains have created their own artificial reefs to provide fish habitat and increase fish populations. Many fishermen also target offshore oil and gas rigs because they can provide substrate for sedentary species such as barnacles and oysters that attract higher trophic levels within the marine food web. Although offshore primary production is fairly low in the Gulf of Mexico, these artificial structures may be a useful supplement to the limited natural habitat for adult fish species and sessile organisms.

Industry Interest

Throughout preparation of this 5-year program for 2002-2007, industry commenters have expressed highest interest in the Gulf of Mexico Planning Areas. Next in interest are the Beaufort Sea and Cook Inlet Planning Areas off Alaska. Other areas off Alaska are of little to moderate interest. The discussions of options in part III include pertinent summaries of industry comments, and all comments that the MMS received on the proposed program are summarized in the appendix.

Equitable Sharing of Developmental Benefits and Environmental Risks

Introduction

Section 18(a)(2)(B) of the OCS Lands Act requires that the Secretary base the timing and location of OCS exploration, production, and development on a consideration of, among other things, “an equitable sharing of developmental benefits and environmental risks among the various regions.” Because developmental benefits and many environmental risks often accrue outside the OCS regions, which are portions of land lying under the ocean, analysis of this factor usually goes beyond the strict requirements of the OCS Lands Act and considers the sharing of benefits and risks to people within onshore areas near the OCS.

Section 18 does not require that the leasing program achieve an equitable sharing of developmental benefits and environmental risks, nor have the courts set a specific standard of equitable sharing that the Secretary is to achieve. As the court recognized in *California I* and *California II*, the degree to which a proposed 5-year schedule of lease sales might achieve an equitable sharing of benefits and risks must be considered in light of a number of other factors, many of which are not under the control of the Department of the Interior and some of which greatly affect the options available.

Benefits and Risks

Some benefits and risks of OCS leasing are shared widely, whereas others are concentrated in regions adjacent to areas of OCS oil and gas activity. The nature of developmental benefits and environmental risks associated with the OCS oil and gas program has been well documented in previous 5-year program analyses. Those analyses concluded that the 5-year program has a certain innate equity in that the geographic areas bearing the greatest risks also receive a higher share of the benefits but that certain financial aspects of both benefits and risks are shared somewhat widely. The previous equitable sharing analyses also have noted that there are

actions that may be taken independently of the 5-year program to influence the equitable sharing of developmental benefits, environmental risks, or both. Two such influential developments that have occurred since the approval of the 5-year program for 1997-2002 are the long-term executive withdrawal of certain areas of the OCS from disposition by leasing and the enactment of an amendment to the OCS Lands Act providing for distribution of additional Federal revenues as impact assistance to States and localities affected by OCS activity. Funds for impact assistance were appropriated for fiscal year 2001.

Possible Effects of Different 5-Year Program Decisions

Decisions determining the size, timing, and location of OCS leasing in the 5-year program for 2002-2007 can affect the distribution of associated developmental benefits and environmental risks among the coastal regions of the United States. Environmental risks are discussed in great detail in the 5-year program final EIS, and environmental impacts associated with specific decision options are summarized in part III.A, which also describes the relationship of EIS alternatives and program decision options. Developmental benefits—as measured by effects of the program on employment, personal income, total value added, and total economic output—are discussed below.

As in previous 5-year programs, this analysis examines the distribution of developmental benefits among coastal regions near planning areas proposed for OCS lease sales. Due to the long-term withdrawal of the east and west coasts from leasing, Regions III (Florida), IV (Alabama, Mississippi, Louisiana, and Texas) and VII (Alaska) are the only coastal regions examined. All other States, coastal and inland, are part of a grouping characterized as the rest of the United States that is included for comparative purposes. The MMS used its recently developed regional economic impact models to estimate the relative economic effects on each of these regions that might result under the alternatives analyzed in the final EIS. These models are essentially the same as those now used to estimate employment effects for EIS's prepared by the MMS, and they have introduced a common approach to such modeling across the OCS regions.

The analysis has determined that the proposed final program would have its greatest economic effect in Region IV, which comprises the States adjacent to the Central and Western Gulf of Mexico OCS Planning Areas. In both the lower price and higher price scenarios, Region IV would receive 69-70 percent of the employment, income, value added, and total economic output generated by the proposed final program. Region VII (Alaska) would receive 2-3 percent, Region III (Florida) would receive less than 1 percent, and the rest of the United States would receive 27-28 percent.

These results are consistent with the existence of current infrastructure and the expected location of most of the offshore activity likely to result from the proposed final program. Not coincidentally, it is the vicinity of Region IV that is expected to face the most environmental risk as well. It should be noted that the *per capita* share of these developmental benefits is greater for Alaska than for the States in Region IV. Also, to the extent that Alaska continues to develop the means to supply the goods and services needed for offshore oil and gas activities, Region VII would be expected to increase its share of the developmental benefits flowing from the 5-year program for 2002-2007. Because no nearshore areas directly off the coast of Florida are proposed for leasing, little economic activity would result in Region III, and the associated environmental risks would be minimal as well. However, there are opportunities for Florida industries to benefit from supplying goods and services to the OCS industry operating in the Eastern Gulf and adjacent portions of the Central Gulf. Many such opportunities would require investments in related infrastructure.

An analysis of the groups of program options labeled Alternatives 2-4 in the draft EIS shows similar patterns of sharing of economic activities. Predictably, Alternative 2, which would exclude only 1 of the 12 sales recommended for the Gulf of Mexico but 3 or 4 of the 8 sales recommended for the Alaska OCS, would cut the Alaska proportion of expected economic activity in half. Likewise, the extent to which the share of economic activity is likely to increase or decrease in Regions IV and VII under Alternatives 3 and 4 changes with the relative amount of activity proposed for the Gulf of Mexico and for the Alaska OCS.

Conclusion

This analysis affirms the findings and conclusions of previous equitable sharing analyses. Since the distribution of benefits associated with factors of production is linked significantly to the location of OCS oil and gas support industries—which exist primarily along the Gulf of Mexico, Southern California, and Alaska coasts—the Secretary’s decision on an OCS leasing schedule for the period 2002-2007 would not be expected to alter substantially the distribution of benefits and risks achieved under previous 5-year programs. Also, while the differences among the decisions could have a noticeable effect on parts of Alaska and on certain sectors of its economy, due to the smaller population and economic base, no decision is likely to make large changes in the relative share of developmental benefits. As in the two previous programs (1992-1997 and 1997-2002), the exception among the three coastal areas mentioned above is Southern California, whose exclusion precludes it from sharing any direct benefits or risks resulting from the new program. The revenues that traditionally have accrued to adjacent onshore areas as a result of OCS oil and gas activities—

such as related sales and income taxes and payments distributed to states under section 8(g) of the OCS Lands Act—may be used to mitigate associated impacts. It is possible that such revenues would be augmented by funds appropriated under the Coastal Impact Assistance program that was enacted in 2000 (to date only \$150 million for fiscal year 2001 has been appropriated). Also, measures such as the implementation of new lease stipulations and operating regulations remain available to reduce the risks borne by the affected areas and foster more equitable sharing, as appropriate.

Due to the long-term executive withdrawal, the availability of OCS planning areas for leasing consideration in the next 5-year program is severely limited. As concluded previously, the best attempt at achieving an equitable sharing of benefits and risks under these circumstances would be to continue to focus on the Central and Western Gulf of Mexico, while also including sales in the available portion of the Eastern Gulf of Mexico as well as in promising areas of the Alaska OCS—especially the Beaufort Sea Planning Area—where the first production from a Federal OCS discovery began in November 2001. While many commenters have contended that a program providing for equitable sharing of leasing would not exclude the Atlantic, Pacific, and most of the Eastern Gulf OCS, the MMS is prohibited from including those areas as explained above.

Other Uses of the OCS

Section 18(a)(2)(C) requires the Secretary to examine the location of areas considered for leasing with respect to other uses of the resources and space within those areas. Other uses of the OCS that could affect or be affected by oil and gas leasing and ensuing activities are listed below.

- Subsistence (hunting and fishing activities by Alaska Natives);
- Commercial Fishing;
- Essential Fish Habitat and Habitat Areas of Particular Concern [pursuant to section 303(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act, as amended, and implementing regulations];
- Other Areas of Special Concern (onshore and offshore areas designated for special uses and protections, such as parks and sanctuaries);
- Tourism and Recreation;

- Military and NASA (operating areas in the Gulf of Mexico and Atlantic Regions); and
- Nonenergy Marine Mineral.

The information presented below summarizes detailed regional descriptions of the environment that are included in chapters 3 and 4 of the 5-year program final EIS.

The ADGC and others commented that the discussions of areas of special concern should include State designated coastal areas. Such areas have not been added to the discussions below because they are intended to be a representative, not exhaustive, presentation of information for each OCS region. More comprehensive descriptions of areas of special concern—including those designated by States—will be presented in the NEPA documentation that subsequently is prepared for individual lease sales.

Alaska Region

Subsistence. Subsistence activities have value in the context of culture, lifestyle, society, and community. Subsistence activities in the Beaufort Sea marine and coastal area focus on the bowhead whale as well as caribou, freshwater and ocean fish, ducks and geese, bearded seals, and Dall sheep. Species subject to subsistence activities in the Chukchi Sea area include bowhead whale, beluga whale, caribou, seal, walrus, polar bear, fish, duck, and goose. Bowhead whaling is the single most valued activity in the North Slope subsistence economy today. In the vicinity of the Hope Basin area, subsistence activities are oriented toward sea mammals, including the bowhead whale, beluga, walrus, and seal. Other Hope Basin subsistence resources include caribou, migratory birds, eggs, berries, and other vegetation. Norton Basin subsistence activities focus on fish (salmon and herring), marine mammals (seals and walrus), waterfowl, and shellfish offshore, and caribou and moose onshore. Widely varying subsistence patterns in the vicinity of Cook Inlet reflect the area's diverse population. Generally, the inhabitants of small traditional villages harvest saltwater and freshwater fish and small sea mammals in the summer and fall, moose in the fall, and invertebrates and some sea mammals year round. In the larger industrial communities, the people generally fish in the summer and hunt in the fall, and more households do not partake in subsistence activities. Due to recent declines in the population of beluga whales in Cook Inlet, their harvest is now subject to comanagement by NMFS and the Cook Inlet Marine Mammal Council, which represents Native subsistence hunters. The current comanagement agreement allows for the harvest of one beluga by the Tyonek Native community located on the upper northwest shore of Cook Inlet.

Commercial Fishing. In the Beaufort Sea area there is one family operating a commercial fishery focused primarily on cisco and whitefish in the Colville River Delta during summer and fall. The port of Barrow also documented a small amount of commercially landed salmon in 1999. There are currently no commercial fisheries in the Chukchi Sea, and there is one relatively small chum salmon fishery in the Kotzebue Sound adjacent to the Hope Basin Planning Area. In the Norton Basin area, there are relatively small salmon, herring, and red king crab fisheries. Commercial fishing is an important segment of the local economy of the Cook Inlet region, focusing mainly on salmon and to a lesser degree on crab, shrimp, and halibut. Additional information about commercial fishing in the Alaska Region is presented in the discussion of environmental sensitivity and marine productivity.

Essential Fish Habitat and Habitat Areas of Particular Concern.

Essential Fish Habitat has been designated in all of the areas off Alaska that are proposed for leasing. In the Beaufort Sea, Chukchi Sea/Hope Basin, and Norton Basin areas, essential habitat has been established for five salmon species. In Norton Basin, habitat has also been identified for three species of crab and five species of groundfish. In Cook Inlet, the habitat designations cover 42 species. The Stefansson Sound Boulder Patch in the Beaufort Sea Planning Area is the only Habitat Area of Particular Concern located within an Alaska area proposed for leasing.

Other Areas of Special Concern. With the exception of the Norton Basin Planning Area, all of the areas proposed for leasing off Alaska are adjacent to coastal portions of National Parks or Wildlife Refuges. The Beaufort Sea program area is adjacent to the Arctic National Wildlife Refuge (ANWR) and north of the Gates of the Arctic National Park and Preserve. The Chukchi Sea/Hope Basin program area is located off Cape Krusenstern National Monument and the Alaska Maritime National Wildlife Refuge, Chukchi Sea Unit. The Bering Land Bridge National Preserve is located on the Seward Peninsula and the shore of Kotzebue Sound south of the Hope Basin portion of the program area. The Cook Inlet program area is near Lake Clark National Park and Preserve, and the Katmai National Park and Preserve is located on the eastern shore of the Shelikof Strait, which is south of the program area.

Tourism and Recreation. In the Beaufort Sea and Chukchi Sea/Hope Basin areas, recreation activities take place mainly in the summer and include fishing, boating, hunting, hiking, sightseeing, camping, and picnicking. Most nonresident activity is by tour groups that visit Barrow and Deadhorse, both of which have lodging available. Hikers and river rafters also visit ANWR and other areas such as Gates of the Arctic National Park, usually lodging in Kaktovik. Activities in the Chukchi Sea

area south of Point Hope are similar to those in the Beaufort Sea area, consisting mainly of tour group visits to Kotzebue, which has a tourism sector similar to Barrow. In the Norton Basin area, there is very little developed tourism or recreation, but the area has significant potential due to its scenic coastline, the historic attractions of Nome, and the role of Nome as the finish line for the annual Iditarod sled dog race. The Cook Inlet area offers abundant high quality tourist and recreation resources that attract numerous State, national, and international visitors. Additional information relating to tourism and recreation in Alaska is available in the final EIS description of areas of special concern.

Military. Although there are military use areas within the Alaska Region, OCS oil and gas leasing and related activities are not expected to interfere with military operations.

Nonenergy Marine Mineral Activities. There is no current development of offshore nonenergy minerals in any of the Alaska OCS program areas under consideration for oil and gas leasing. There are sand and gravel deposits in the Beaufort Sea, but their value as a construction material is not known.

Gulf of Mexico Region

Commercial Fishing. The Gulf of Mexico produces more fish than any other region of the United States, and the Gulf fisheries are very important to the economies of the adjacent coastal States. The Gulf of Mexico commercial fisheries include nearly 100 species from 33 families. Menhaden is the most important finfish harvested, followed by nine other species of significant value. Shrimp is the most important shellfish, along with various oyster, lobster, and crab species. Louisiana ranked first among Gulf States in total commercial fisheries landed in 1999, followed in descending order by Mississippi, Texas, Florida (west coast), and Alabama. Additional information about commercial fish landings in the Gulf Region is presented in the discussion of environmental sensitivity and marine productivity.

Essential Fish Habitat and Habitat Areas of Particular Concern.

Approximately 33 percent of the species managed by the Gulf of Mexico Fisheries Management Council has been selected for Essential Fish Habitat designation. All of those species are listed in tables 3-8, 3-9, and 3-10 in the final EIS. They include invertebrate and reefish species, red drum and other coastal pelagic species, and highly migratory species such as swordfish, tunas, and sharks. The Management Council has designated nine Habitat Areas of Particular Concern in the Gulf. Only the Flower Garden

Banks National Marine Sanctuary, in the Western Gulf Planning Area, is located in an area proposed for leasing.

Other Areas of Special Concern. Special areas in the Gulf of Mexico include a National Marine Sanctuary, National Park System units, National Wildlife Refuges, a National Estuarine Research Reserve, and National Estuary Program areas. The Flower Garden Banks National Marine Sanctuary covers a 124-square kilometer area located 177 miles offshore within the Western Gulf of Mexico Planning Area (including the addition of Stetson Bank in 1996). National Park System units along the Gulf coast that are adjacent to areas considered for leasing include Jean Lafitte National Historic Park and Preserve in Louisiana, Padre Island National Seashore off Texas, and Gulf Islands National Seashore off Mississippi and Alabama. There are 28 National Wildlife Refuges located along the coast from Texas to Alabama. The Weeks Bay National Estuarine Research Reserve encompasses a small estuary in the vicinity of Mobile Bay adjacent to the Central Gulf of Mexico Planning Area. National Estuary Program areas include the Galveston Bay and Corpus Christi Bay systems in Texas and the Barataria-Terrebonne Estuarine Complex and Lake Pontchartrain Basin Program in Louisiana.

Tourism and Recreation. The northern Gulf of Mexico coastal zone is one of the major recreational regions of the United States, particularly in connection with marine fishing and beach-related activities. The shorefronts along the Gulf States offer a diversity of natural and developed landscapes and seascapes. The coastal beaches, barrier islands, estuarine bays and sounds, river deltas, and tidal marshes are extensively and intensively used for recreational activity by residents of the Gulf States and tourists from throughout the Nation, as well as from foreign countries. Publicly owned and administered areas, such as national seashores, parks, beaches, and wildlife lands, as well as specially designated preservation areas (such as historic and natural sites and landmarks, wilderness areas, wildlife sanctuaries, and scenic rivers) attract residents and visitors throughout the year. Commercial and private recreational facilities and establishments, such as resorts, marinas, amusement parks, and ornamental gardens, also serve as primary interest areas and support services for people who seek enjoyment from the recreational resources associated with the Gulf of Mexico.

Military. The Gulf of Mexico is the most important overwater testing and training area in the United States, with areas designated for air to surface and air to missile testing; surface vessel testing; and training for air, surface, mine, and submarine operations. Areas used by the military include the Corpus Christi Operating Area off Texas (mine warfare and aircraft carrier landing training), the New Orleans Operating Area off Louisiana

(naval live firing maneuvers), and the Pensacola Operating Area off Alabama and Florida (aircraft carrier landing training, naval vessel shake-down testing, and live firing exercises). The Department of the Interior and the Department of Defense coordinate activities and reduce use conflicts according to procedures established in a longstanding Memorandum of Agreement.

Nonenergy Marine Minerals. Several minerals in the north-central Gulf of Mexico have the potential to be developed. There are two sulphur-producing operations on the OCS off Louisiana. Sand resources located in Federal waters in the Ship Shoal area off Louisiana are being considered for use in restoring barrier islands to protect the State's coastal wetlands. Sands in Federal and State waters off Mississippi and Alabama have the potential to be developed for glass production and for coastal restoration uses including beach replenishment.

Balancing Considerations

Introduction

Section 18(a)(3) of the OCS Lands Act requires the Secretary to “select the timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone.” Striking this balance based on a consideration of the criteria enumerated in section 18(a) is essentially a matter of judgment for which no ready formula exists. Section 18 requires the consideration of a broad range of criteria rather than imposing an inflexible formula for decisionmaking. Thus, previous 5-year programs have scheduled as many as 37 lease sales in 22 planning areas (1987 program) and as few as 16 sales in 8 planning areas (1997 program).

Some of the factors that section 18 specifies for consideration are embodied in the benefit-cost analysis (i.e., resource potential and certain environmental values). Others are not as readily quantifiable and are therefore described qualitatively. For example, environmental considerations such as aesthetics or concerns for certain species are extremely difficult to translate into accurate economic estimates. In order to provide the Secretary full and appropriate information for the proposed final program decision, this decision document is supplemented by relevant NEPA documents and other analyses that present information relating to such environmental factors and other unquantified considerations. This supplemental information, which is identified in part II.A, is incorporated by reference.

Judicial Guidance

The U.S. Court of Appeals for the D.C. Circuit has elaborated in great detail on the statutory criteria for the balancing decision required by section 18(a)(3). Pertinent excerpts from the Court's opinions on litigation concerning previous 5-year programs are presented below.

The Court has stated the following concerning the weight to be accorded the three elements of section 18(a)(3):

That the Act has an objective—the expeditious development of OCS resources—persuades us to reject petitioners' view that the three elements in section 18(a)(3) are “equally important” and that no factor is “inherently more important than another.” The environmental and coastal zone considerations are undoubtedly important, but the Act does not require they receive a weight equal to that of potential oil and gas discovery. A balancing of factors is not the same as treating all factors equally. The obligation instead is to look at all factors and then balance the results. The Act does not mandate any particular balance, but vests the Secretary with discretion to weigh the elements so as to “best meet national energy needs.” The weight of these elements may well shift with changes in technology, in environment, and in the Nation's energy needs, meaning that the proper balance for 1980-1985 may differ from the proper balance for some subsequent five-year period. (*California I*, 668 F.2d, p. 1317)

The following three statements of the Court pertain to the analysis of the section 18 factors and the Secretary's discretion in weighing the results of that analysis:

- (1) The Act recognized the difficult burden the Secretary must shoulder by stating that the selection of timing and location of leasing must strike the proper balance “to the maximum extent practicable.” The Secretary must evaluate oil and gas potential, which can be quantified in monetary terms, in conjunction with environmental and social costs, which do not always lend themselves to direct measurement. Because of this, they must be considered in qualitative as well as quantitative terms.

Although the secretarial discretion we have described is broad, as a result of both the general wording of the statute and the nature of the task the Secretary is asked to perform,

the Secretary's discretion is not unreviewable. The policies and purposes of the Act provide standards by which we may determine whether the Secretary's decision was arbitrary, irrational, or contrary to the requirements of the Act. To do so, we consider "whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." (*California I*, 668 F.2d, p. 1317)

- (2) In deciding whether to include an area, the Secretary weighed qualitative factors as well as quantitative factors. The Secretary listed among qualitative factors "national security, industry interest, and equitable sharing of development costs and benefits." OCSLA specifically directs the Secretary to weigh such qualitative factors in his balance.

Taking qualitative factors into account implies that the inclusion of areas with a calculated net social value of zero may nonetheless be compatible with section 18(a)(3). (*NRDC*, 865 F.2d, p. 307)

- (3) The Secretary must make a good-faith effort to balance environmental and economic interests. So long as he proceeds reasonably, however, his decisions warrant our respect. (*NRDC*, 865 F.2d, pp. 308-309)

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Programmatic balancing decisions must also take into account that development of a 5-year program represents a very early stage of planning in the overall process governing OCS oil and gas activity, which entails preparing the leasing schedule, implementing that schedule with individual lease sales, and permitting of exploration and development and production. The proposed final program is followed by one more step in the 5-year program preparation process—approval of the new program by the Secretary.

In the formulation of the first several 5-year programs, the tendency was to include more areas for consideration early in the process and then reduce the scope of the program later in the process or even following its approval. The rationale for such an approach was that it would be better to defer decisions to exclude areas until later, because the information on which to base such decisions becomes more reliable and geographically focused as the OCS process progresses. Further, this rationale held that as program

activities proceed, there are numerous occasions to refine areas under consideration when the program is implemented and as projections of hydrocarbon potential, levels of OCS activities, and possible environmental effects become more specific and more real. A different approach has been taken in the development of the program for 1997-2002 and for this program in that decisions focusing issues and areas were made early in the process and have been affirmed in subsequent steps.

Other Considerations

Other relevant considerations that have implications for balancing environmental and socioeconomic issues and concerns with potential benefits of OCS activity are discussed in this decision document, the decision document and EIS prepared for the 5-year program for 1997-2002, and in other referenced documents. Such considerations are summarized below.

Findings and Purposes of the OCS Lands Act. Title I of the OCS Lands Act Amendments of 1978 sets forth a number of findings and purposes with respect to managing OCS resources. Those principles generally pertain to recognizing national energy needs and related circumstances and addressing them by developing OCS oil and gas resources in a safe and efficient manner that provides for environmental protection, fair and equitable returns to the public, State and local participation in policy and planning decisions, and resolution of conflicts related to other ocean and coastal resources and uses.

Industry Interest. Interest in the areas proposed for leasing is summarized in the presentation of options in part III.A and above in this part's comparative analysis. All comments submitted by industry in response to the October 26, 2001, request for comments on the proposed program are summarized in the appendix. Industry interest is a key criterion for deciding whether to propose an area for a lease sale. However, it is not the sole and absolute indicator of the potential of an area to contribute oil and gas resources for regional and national use. Therefore, as with all of the balancing information discussed in this part, industry interest generally should be weighed with other considerations in deciding where and when to propose OCS leasing. The presentation of size, timing, and location options in part III includes discussions of industry interest along with other significant considerations.

Information Incorporated by Reference. Documents pertaining to geographical, geological, and ecological characteristics, to local and national energy markets and needs, and to environmental and predictive information, as cited in part II, are incorporated by reference.

Laws, Goals, and Policies of Affected States. Relevant laws, goals, and policies identified by affected States are summarized in the options part of this decision document and in the appendix.

Issues Raised in Comments. All comments received in response to the October 26, 2001, request are summarized in the appendix, and those that correspond more specifically to program options are described in part III.

D. Assurance of Fair Market Value

The 5-year program includes general provisions for the receipt of fair market value in accordance with section 18(a)(4) of the OCSLA. To assure receipt of fair market value, the MMS developed and uses a process for reviewing the adequacy of bids received for OCS oil and gas leases. In addition to the bid adequacy process, the MMS establishes the minimum bid requirement as well as other lease terms and conditions to assure the receipt of fair market value. The minimum bid requirement and lease terms and conditions are designed based on reviews and evaluations that are independent of the 5-year program preparation process.

Minimum Bid Requirement

The draft proposed program and proposed program provided for setting minimum bid levels individually for each planning area and lease sale as market conditions warrant. This approach allows the MMS to propose minimum bid levels that vary significantly among planning areas as well as between subareas within a planning area. From a public policy perspective, selecting minimum bid levels for each sale based on its own merits allows the MMS to address unique sale-specific situations. Thus, under this approach minimum bid levels could remain the same as those used in previous sales or vary significantly, based on market conditions. However, merely setting the minimum bid level does not mean that any bids submitted in a sale will be accepted. Bid adequacy criteria are applied at each sale to assure that fair market value is received for all leases issued.

Bid Adequacy Process

The current postsale bid adequacy process was instituted in 1983 with implementation of the areawide leasing policy. The process consists of two phases for determining those bids that reflect the presence of competitive market forces, which assure receipt of fair market value, and those that require further analysis using detailed tract evaluations. Phase 1 includes market-oriented evaluation criteria for accepting some tracts having competitively determined acceptable bids and identifying other tracts that will receive further evaluation in Phase 2. Phase 2 applies criteria designed to assess bid adequacy on a tract-specific basis, using independent

Government evaluations in addition to observed bid data to determine whether high bids are acceptable. Over the years, the bid adequacy procedures have been revised to improve their performance and ensure that the Government will continue to receive fair market value for all leases awarded.

The most recent modifications to the bid adequacy procedures were effective July 1, 1999. A full description of the current version of the bid adequacy procedures was published in the *Federal Register* on July 12, 1999 (64 *FR* 37560). The MMS continues to study the effectiveness of the bid adequacy procedures. If any changes in methodology are identified that would improve the bid adequacy procedures, revisions will be made, as appropriate. Interested parties will be notified of any modifications to the bid adequacy procedures through notice in the *Federal Register*.

E. Appropriations and Staffing Estimates

Section 18(b) of the OCS Lands Act requires that the leasing program include estimates of the appropriations and staff needed to obtain information for preparing the program, to analyze and interpret data and information, to conduct environmental studies and prepare EIS's, and to supervise operations pursuant to the leases that will be issued.

Table 13 presents the appropriations and staffing estimates associated with the proposed 5-year program for 2002-2007.

Table 13. Appropriations and Staffing Estimates (by Fiscal Year)

[Funding estimates are in thousands of dollars; staffing estimates are in full-time equivalent positions.]

Activities	2002		2003		2004		2005		2006		2007	
	Funds	Staff	Funds	Staff	Funds	Staff	Funds	Staff	Funds	Staff	Funds	Staff
1	4,003.1	45.7	8,787.0	104.7	9,135.4	109.5	9,645.4	118.2	10,062.5	124.1	8,274.9	23.2
2	4,844.2	36.0	5,195.2	38.0	5,296.4	39.0	5,416.4	40.0	5,506.4	40.8	5,179.4	39.0
3	31,381.0	253.5	29,565.0	277.4	30,569.2	338.2	32,100.5	537.0	32,281.5	483.0	31,856.5	432.0
4	2,613.4	12.0	2,703.4	13.0	5,225.8	24.0	7,333.8	31.0	7,333.8	31.0	9,440.8	38.0

1. Resource Information [section 18(b)(1)]
2. Exploration Data and Other Information [section 18(b)(2)]
3. Environmental Studies and EIS Preparation [section 18(b)(3)]
4. Supervise Operations [section 18(b)(4)]

APPENDIX

Summary of Comments

Summary of Comments Responding to the October 26, 2001, *Federal Register* Notice on the Proposed 5-year OCS Oil and Gas Leasing Program for 2002-2007

Introduction

On October 26, 2001, the MMS announced the proposed program for 2002-2007 in the *Federal Register* (66 FR 54279) and requested comments from interested and affected parties. This appendix is a summary of all comments received by the MMS, including both written correspondence and testimony presented at public hearings on the 5-year program draft EIS. Only those comments pertaining to the proposed program (*i.e.*, the proposed size, timing, and location of leasing and measures for assuring receipt of fair market value) are summarized. Comments pertaining to the draft EIS are addressed in that document.

Number of Written Comments by Category

State and Local Governments and Native Groups	13
Federal Government	3
Environmental and Other Interest Organizations	4
Oil and Gas Companies and Organizations	6
Private Citizens	4,559
Total	4,585

Summary of Comments

State and Local Governments and Native Organizations

State of Alaska (and Local Governments and Native Organizations): The Alaska Division of Governmental Coordination submitted comments expressing appreciation for the exclusion of the entire North Aleutian Basin Planning Area, the Shelikof Strait portion of the Cook Inlet Planning Area, and the area deferral within the Chukchi Sea Planning Area encompassing the Chukchi polyna. The State also noted that in a recent call for information on the Norton Basin Planning Area, the MMS excluded the area within 12 miles of the Yukon Delta. The State will provide more specific comments on these areas during review of individual lease sales.

The State reiterated its request that the MMS require mitigation of spill risk during seasonal ice periods. Further lease sale planning decisions should be based on these response limitations, and lease sale mitigation measures should require appropriate spill prevention measures.

For the proposed lease sales in the Cook Inlet, the State recommended that the MMS consider the December 2001 resolution by the Kenai Peninsula Borough supporting the Tri-Borough Position Paper for OCS lease sales. The Position Paper addresses five issues: 1) offshore loading of tankers, 2) fishing gear conflicts, 3) oil-spill response capability, 4) critical habitat area, and 5) local government revenue sharing.

Finally, the State disagreed with the approach to consistency determinations that was proposed in a September 19, 2001, *Federal Register* notice, which indicated that determinations for subsequent lease sales “will focus primarily on new issues or changes in a State’s federally-approved coastal management plan.” The State recommended that MMS take a fresh look at issues for each lease sale when more current environmental and technical data will be available.

The Mayor of the North Slope Borough submitted an extensive package of remarks and recommended changes that the MMS should consider (he made similar comments at the Barrow hearing on the draft EIS and at the 2001 meetings of the OCS Policy Committee of the Minerals Management Advisory Board). The comments indicated that the Borough is very concerned and that the Borough’s general opposition and specific concerns regarding offshore oil and gas development should be well known. The mayor also stated that much of the substance of previously submitted comments had yet to be addressed in the planning documents and cited those comments for reconsideration. The mayor expressed concern about cumulative impacts and generally recommended that no additional leasing be proposed in the arctic OCS while recommending the following specific exclusions: the extreme eastern Beaufort Sea, the area around Cross Island, and the blocks in the Barrow spring lead system. The mayor also expressed opposition to the multisale EIS approach for the proposed Beaufort Sea lease sales.

The Mayor and City Council of the City of Nuiqsut commented that they are not in favor of the proposed Beaufort Sea lease sales. They also provided information describing the arctic environment and subsistence activities.

The Inupiat Community of the Arctic Slope submitted the testimony of the Alaska Eskimo Whaling Commission to the Alaska Department of Environmental Conservation on January 10, 2002. The comments pertain to the application of BP Exploration Alaska for renewal of its oil discharge prevention and contingency plan.

Sitnasuak Native Corporation expressed support for leasing in the Norton Basin Planning Area and stated that the MMS could work with native organizations to identify appropriate mitigation measures.

State of Louisiana: The Department of Natural Resources requested that the MMS submit a consistency determination for the proposed program. It stated it is pleased to see that the Proposed Action (Alternative 1) includes two proposed lease sales in the westernmost portion of the Eastern Gulf of Mexico in addition to the normal 10 lease sales in the Central and Western Gulf of Mexico planning areas. It also commented that Alternatives 2 and 3 would adversely impact the employment and economy of Louisiana and that the state would not oppose Alternative 4.

Louisiana commented that it believes that the Federal agency responsible for promoting and benefiting from oil and gas development should be responsible for wetland impacts. It also stated that the MMS should take a leadership role in finding methods to adequately compensate Louisiana, which has borne the brunt of OCS development impacts, and that some of the financial responsibility for maintaining the vast and complex infrastructure for OCS development should come from the proceeds of the U.S. government deepwater OCS lease sales. The MMS also should provide monitoring data that supports either its methodology or conclusions regarding predicted environmental impacts presented in previous 5-year programs. Further, the MMS should initiate studies and provide assistance to impacted communities to help plan and implement procedures to diversify their local economies and to develop efficient growth measures that minimize disruption from the social and environmental impacts of OCS activity. The state also expressed support for the Coastal Impact Assistance Program enacted for fiscal year 2001.

State of Alabama: The Governor reiterated opposition to the offering for lease of blocks south and within 15 miles of the Baldwin County coast in order to minimize the visual impact of any natural gas structures within the area. The State appreciates the information from the draft EIS concerning the impacts on onshore air quality in Mobile County and will seek additional information from the MMS on this issue.

State of Florida (and Pinellas County): The Department of Environmental Protection cited its previous comments on the draft proposed program. It also encouraged the MMS to develop sound environmental and technical information for accurately assessing the environmental impact of OCS activities, especially in the deepwater environment of the eastern Gulf and indicated that the state does want to review all draft NEPA documents prepared for subsequent sales.

The State enclosed comments submitted by the Pinellas County Board of Commissioners, which expressed strong opposition to leasing any portion of the Eastern Gulf and specifically objected to including Sales 189 and 197 in the proposed program.

State of California: The Governor indicated that the State remains firmly opposed to any additional leasing for offshore oil and gas development off the California coast.

The California Coastal Commission submitted separate comments strongly supporting the continued prohibition of any new leasing off the coast of California and expressing concern that leasing and developing Alaska OCS planning areas might have an adverse impact on California's coastal resources.

State of Connecticut: The Department of Environmental Protection recommended that the Federal Government take a proactive role in promoting energy conservation and alternative energy sources and expressed support for sharing OCS revenues among all coastal states.

State of Georgia: The Department of Natural Resources, Coastal Resources Division, stated that the proposed program would comply with the Georgia Coastal Management Program.

Federal Government

Department of the Navy: The Assistant Secretary (Installations and Environment) commented that the Navy does not have any objection to the proposed 5-year program and will continue to coordinate activities with the MMS under an existing Memorandum of Agreement.

U.S. Geological Survey: The Director stated that it does not have any comments or recommendations on the program.

Jeff Miller, Member of Congress (1st District of Florida): Representative Miller expressed opposition to exploration less than 20 miles from the coastline and stated that an overwhelming majority of people in Florida have expressed their strong opposition to OCS drilling.

Environmental and Other Interest Organizations

National Parks Conservation Association: The NPCA expressed opposition to additional oil and gas leasing off Alaska, citing potential environmental impacts on seven national parks, preserves, and monuments in Alaska.

Alaska Marine Conservation Commission: The AMCC expressed concerns about potential environmental impacts related to oil spills and recommended that all proposed Alaska OCS lease sales be removed from the 5-year program.

Environmental Defense: Environmental defense identified a number of concerns pertaining to the draft EIS and forwarded thousands of comments submitted by private citizens in form letters.

Ocean Conservancy and Others: The Ocean Conservancy, Sierra Club, Greenpeace, Arctic Connections, Trustees for Alaska, Alaska Wilderness League, Natural Resources Defense Council, Wilderness Society, Earthjustice Legal Defense Fund, National Environmental Trust, Northern Alaska Environmental Center, Alaska Community Action on Toxics, and Alaska Center for the Environment submitted a letter expressing concerns about oil spills and their effects. Based on those concerns, they recommended that the area off ANWR be excluded and stated their preference for no sale in the Beaufort Sea Planning Area. They endorsed the proposed Chukchi Polynya and Barrow exclusions but stated that they do not offer enough protection for sensitive arctic coastal resources.

They expressed opposition to the proposed Norton Basin sale, particularly because the MMS views the approach to that sale as a possible precedent for other frontier areas. While recognizing the exclusion of Shelikof Strait from leasing in Cook Inlet, they recommended that it be totally removed from consideration as an OCS planning area.

Oil and Gas Industry

Alaska Oil and Gas Association: The AOGA expressed support, in order of priority, for Alternative 4, Alternative 1, Alternative 2, Alternative 3 of the draft EIS and stated that it does not support Alternative 5. It also stated that the only way to attract interest in the Alaska OCS is to hold frequent and predictable lease sales. The AOGA also recommended that the MMS adopt multi-year planning and leasing initiatives to increase the effectiveness of the Alaska OCS program along with a reformed lease stipulation and permit planning process.

ExxonMobil Exploration: ExxonMobil cited its previous comments on the draft proposed program, which expressed concern that more areas are not proposed for OCS leasing in the 5-year program for 2002-2007.

Shell Exploration and Production Company: Shell encouraged the MMS to move expeditiously to complete required environmental studies and to pursue aggressively resolution of conflicts in OCS areas under moratorium and in other areas excluded from leasing. It expressed support for focused leasing in selected moratorium areas with resource potential outside the Gulf of Mexico. Shell also stated that the MMS should clearly communicate lease terms and any applicable restrictions to industry.

National Ocean Industries Association: The NOIA expressed deep concern about the limited amount of area proposed to be available for leasing and asserted that the proposed program is inconsistent with the President's National Energy Policy Report. It stated that the 75-percent reduction in the size of the area scheduled for leasing in the Eastern Gulf of Mexico Planning Area will have a far reaching negative impact on our energy supply and strongly encouraged the MMS to include the rest of the acreage from the original Sale 181 area. The NOIA endorsed Option 1 for the Western and Central Gulf of Mexico, Option 4 for the Eastern Gulf of Mexico, Option 4 for the Beaufort Sea Planning Area, Option 1 for the Chukchi Sea/Hope Basin Planning Area, Option 1 for the Cook Inlet Planning Area, and Option 1 for the Norton Basin Planning Area.

Domestic Petroleum Council: The DPC stated that it is highly unlikely that the proposed program would allow decisions and activities that would enable its member companies to achieve the natural gas supply that will be needed by the Nation. It recommended that the 5-year program for 2002-2007 include consideration of additional acreage in areas of the Eastern Gulf of Mexico and selected priority areas off the Atlantic and Pacific coasts.

American Petroleum Institute: The API stated that the proposed program will do little to reduce U.S. reliance on imported oil and does not provide industry with enough acreage nor enough lease sales to meet the Nation's energy demands. The API expressed support for 5 sales in the Beaufort Sea, 2 each in Chukchi Sea/Hope Basin and Cook Inlet and 1 in Norton Basin in the Alaska OCS region and endorsed the proposal for 5 sales each in the Central and Western Gulf of Mexico. It recommended that 3 sales be scheduled in the Eastern Gulf in the *original* Sale 181 area. Regarding fair market value procedures, API commented in favor of the proposed program's minimum bid requirement (Option 1) and recommended that the MMS return to bid adequacy procedures that were in effect before February 1999.

Citizens

The MMS received directly from citizens 29 letters expressing opposition to any OCS oil and gas leasing off Alaska (all but one was a form letter). Another 4,530 citizen comments were submitted to Environmental Defense and forwarded to the MMS (4,517 were a form letter opposing additional OCS activity in "sensitive Alaskan waters," and 13 were a form letter supporting such activity).

Summary of Program Comments Given at Public Hearings on the Draft EIS

The MMS held hearings on the 5-year program draft EIS during the comment period. Details on the dates and locations of all the hearings, as well as attendance and testimony delivered, are provided in the final EIS. A brief summary of comments pertaining to the proposed program that were offered at those hearings is presented below.

Gulf of Mexico Region

New Orleans (December 10, 2001) – Representatives of the Sierra Club and U.S. Public Interest Research Group expressed opposition to the proposed program based on concerns about impacts to water and air quality. The NOIA testified in favor of including the area in the original Sale 181 area. The Louisiana One Coalition and State Representative Loulan Pitre expressed concerns about effects on local infrastructure and the need for impact assistance.

Houston (December 10, 2001) - Representatives from the City of Corpus Christi, NOIA, and the Independent Petroleum Association testified in favor of the proposed program.

Alaska Region

Anchorage (December 3, 2001) - Representatives of Trustees for Alaska, Alaska Center of the Environment, Greenpeace, Alaska Marine Conservation Council, Sierra Club, Cook Inlet Keeper, and several private citizens expressed opposition to the proposed program and endorsed Alternative 5 in the draft EIS.

Homer (December 5, 2001)- One citizen spoke out against any oil and gas development in Cook Inlet and The President of the Kachemak Bay Conservation Society and one private citizen expressed opposition to leasing off the southern Kenai Peninsula.

Kodiak (December 5, 2001) - A representative of the Kodiak Island Borough stated that the Borough does not oppose the proposed Cook Inlet sales and strongly supports the Tri-Borough Position Paper. A private citizen voiced support for zero discharge drilling platforms and for the Tri-Borough Position Paper.

Nome (December 5, 2001) - The Mayor of Nome, a representative of the Sitnasuak Native Corporation and a private citizen commented in favor of the proposed Norton Basin OCS lease sale.

Barrow (December 7, 2001) – Representatives of the North Slope Borough and Alaska Eskimo Whaling Commission and five private citizens expressed opposition to the program.



The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.