

Gulf of Mexico OCS Region

# Contract Reports Specifications

August 2003



**Gulf of Mexico OCS Region**

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# **CONTRACT REPORTS SPECIFICATIONS**

## **PURPOSE**

These specifications are provided for use as a guide for authors, editors, and word processors whose task is to produce a contract report for the Minerals Management Service (MMS), Gulf of Mexico Outer Continental Shelf Region's Environmental Studies Program (ESP). These guidelines apply only to ESP contract reports in draft, proof, and final phases. For references to digital deliverables, the contractor should refer to the contract. Digital deliverables of contract reports should also follow these report specifications for text and graphics.

Any questions regarding the report should be directed to the Contracting Officer's Technical Representative (COTR).

## **REPORT PROCESSING**

Various contract reports are due to MMS as outlined in Section C of your contract. Section C explains, in detail, how reports are to be submitted to MMS. Figure 1 depicts the contract report process to ensure compliance with MMS editorial guidelines in producing professional, uniform, user-friendly documents. Contract reports will be edited in accordance with MMS editorial guidelines. Any questions concerning editorial comments must be directed to the COTR or Project Officer (PO). Paper and digital copies of the report should *not* be submitted until an error-free copy of the final report has been accepted by the COTR.

## **EDITORIAL GUIDELINES**

The author should identify and address the appropriate audience for each volume of the report. The executive summary should be written to address the well-informed layperson while the narrative report or discussion should address the scientific audience. Authors should strive to maintain a professional tone in their work.

## **WORD PROCESSING GUIDELINES**

Each volume of a document should be submitted as four Microsoft® Word files:

- (1) front cover
- (2) title page
- (3) complete text, including all appendices, figures, and tables
- (4) back cover

To avoid excessively large files, figures may be linked rather than embedded, with the source files included on the same disk and in the same folder as the main document. If the figures are embedded, copies in the source format should be included as separate files in a folder called "Source Figures."

The submitted electronic files should be consistently formatted in Word using current best word processing practices. The following guidance should be used to create a well formatted document that can easily be converted to PDF.

- All pages of the document, except the front and back covers, should have a 1" margin on all sides; these margins must not be violated. Page numbers, headers, and footers should be positioned within the margin area. Set the header and footer distances from the paper edge to 0.8" in File > Page Setup > Layout.
- Do not use "Master Documents." This feature tends to corrupt subdocuments when they are saved back to individual files.
- The document should be formatted using paragraph styles, with each style defined to apply the appropriate formatting, such as font name and size, automatic paragraph indentation, line spacing, space before/after, "Keep lines together," "Keep with next," and "Widow/orphan control." In Word, make certain that "Automatically update document styles" is not checked in the Tools > Templates and Add-Ins dialogue box and that "Automatically update" is not checked in the Modify Styles dialogue box for each style that you use. It is also a good idea to turn off the "AutoFormat" and "AutoFormat as you type" options on the Tools > AutoCorrect Options menu and "Keep track of formatting" on the Tools > Options > Edit menu. (We find character, table, and list styles to be of limited usefulness and sometimes troublesome.)
- Main headings should be in Word's built-in Heading 1 through Heading 6 styles, defined to apply the appropriate format and used hierarchically, as in an outline.
- Most of the text should be in the default Normal style, defined to apply the appropriate format for the main text of the document.
- Table captions should be in a user-created style called Table Caption.
- Figure captions should be in a user-created style called Figure Caption.
- References and bibliography entries should be in a user-created style called Bibliography.
- A small number of additional styles may be used, but they must be employed consistently. Although styles control appearance, it is best to think of them as marking the different structural elements of the document, such as headings, main text, block quotations, bulleted lists, numbered lists, table headings, table text, and so forth. Do not use multiple styles for the same structural element, such as both Normal and Body Text for the main text of the document. Never make one style look like another by painting over text with direct formatting (from the Formatting toolbar or Format menu). Except for italicizing an occasional word or aligning text inside tables, direct formatting seldom should be needed if styles are used properly.
- To view conveniently the style assigned to each paragraph, set the style area width (View > Normal, then Tools > Options > Style area width) between 0.5 and 1". Styles can be edited by double-clicking on the style name in this area.

Remember that you must be in Normal View to see the style area. Normal View is recommended for composing and textual editing, Print Layout View for working with graphics and finalizing your layout for printing. Outline View is useful for checking the organization of your document and verifying that headings are correctly numbered and styled.

- The Table of Contents and Lists of Figures and Tables should be generated automatically based on the styles listed above (in Word XP, Insert > Reference > Index and Tables).
- Tables should be constructed using Word's tables function; avoid setting up tables in tabbed columns.
- Avoid multiple tabs—never use two together. Instead adjust the tab stops on the ruler, removing those that are not needed.
- Do not use automatic numbering of any kind within the body of the document. This feature tends to become confused when multiple numbered lists occur in the same document, costing more time than it saves. Additionally, automatic numbers used in headings drop out when distilled to Acrobat bookmarks. However, automatic page numbers are stable and should be used in the header or footer area.
- Do not use underlining to form special characters (such as  $\leq$  and  $\geq$ ); insert the correct characters using Insert > Symbol. These shortcuts sometimes cause problems when the file is printed or distilled to Acrobat PDF.
- Do not use spaces to position text or graphics and avoid using the Enter key to skip lines. Most spacing should be built into the styles; when you need to skip a line, use Ctrl-0 (zero) or Format > Paragraph > Indents and Spacing > Space Before (or Space After). The Space Before property is especially useful to skip large amounts of space on a page, since customary measurements can be entered (e.g., "4.5 in"). Using Enter to skip lines will break Word's "Keep with next" function.
- Do not use the Enter key to space to a new page; this causes problems when preceding text is added, deleted, or reformatted. To start a new page, use Ctrl + Enter or the Format > Paragraph > Line and Page Breaks property "Page break before." Do not create blank pages in the word processing file. To skip to the next odd-numbered page, insert an Odd Page Section Break (Insert > Break > Odd Page).
- Avoid unnecessary Section Breaks. Section breaks affect document page settings such as page numbering, orientation, headers, footers, and margins, and can be the source of many formatting headaches.
- Avoid using columns (which require section breaks) in places where a single-row table with two or more cells would work just as well.
- Avoid using frames or text boxes, which tend to float around when the document is edited.

- When your document is completed, save a copy as a Word template so that you can use its styles and settings in future documents. (See “Create a document template” in Word’s Help file.)

For additional information about using Word effectively, consult the Microsoft Word Most Valued Professional website at <http://www.mvps.org/word/>.

## PORTABLE DOCUMENT FORMAT (PDF) GUIDELINES

Each volume of a document should be submitted as a single Adobe® Acrobat® PDF file, with internal hyperlinks and a well-organized bookmarks panel. This file should be distilled from the original Word document files using print conversion settings so that copies printed from it suffer no loss of quality. The front cover, title page, and back cover should be distilled separately from the main text file and added into the final PDF (Document > Insert Pages).

The key to producing a high-quality, hyperlinked, and bookmarked PDF file is to begin with a clean, well-formatted, properly paginated, and correctly styled Word document. The following directions apply to Acrobat Distiller 5.0, Word XP, and Windows® 2000, but should be similar to the procedures used under other versions.

**How to Set Conversion Settings.** Open Acrobat Distiller from the Start Menu; select “Print” in the Job Options field. Click Settings > Job Options. Ensure that resolution is set to 600 dpi on the General tab; on the Fonts tab ensure that “Embed All Fonts” is selected and “Subset embedded fonts . . .” is set to 100%.

**How to Make the PDF File.** There are several methods of distilling Acrobat documents. For additional information on these, consult the Acrobat suite (not Acrobat Reader) Help file.

The preferred method of distilling Acrobat files from Word is to use the PDFMaker add-on, which should have been automatically installed with Acrobat 5.0. PDFMaker will automatically generate Acrobat bookmarks, hyperlinked Tables of Contents, List of Figures, and List of Tables—if the Word document has been properly formatted using the styles discussed above. Word’s automatically generated Table of Contents and Lists of Figures and Tables contain hyperlinks to the appropriate pages within the document, and Acrobat will pick these up when the document is distilled using PDFMaker.

When installed, PDFMaker adds an Acrobat item to Word’s menu bar. Click Acrobat > Change Conversion Settings and review all settings. On the Bookmarks tab, select the Word styles to be used in creating Acrobat bookmarks; these would generally be Heading 1 through Heading 6. On the Display Options tab, set Document Open Options to “Bookmarks and Page,” Open Magnification to “Fit Width.” You may also want to consult the Help file available from the bottom right button on the Change Conversion Settings dialog box.

Long and complex documents, especially those containing many tables and figures, can take a very long time to distill using PDFMaker. This is a resource-hungry process; be sure to close all unnecessary programs before starting and perhaps even reboot your machine to free up memory. It may even be necessary to allow the computer to work overnight.

Should PDFMaker fail to distill the file properly, a PDF lacking bookmarks and hyperlinks can be made by clicking File > Print, selecting Acrobat Distiller as the printer, and printing to this

driver. Bookmarks and hyperlinks can be added manually in Acrobat suite (see “Bookmarks” and “Links” in the Acrobat Help file). Another approach is to break the Word file into smaller units (carefully ensuring that page numbering stays unchanged), distill the parts separately using PDFMaker, and assemble the resulting smaller PDF’s into a single Acrobat document. This will generate bookmarks, but it will break many of the internal hyperlinks in the document (especially links from the Table of Contents and Lists of Figures and Tables) and these will have to be manually adjusted or added.

**Opening Behavior.** The final Acrobat document should be set to open on the first page of the document (the front cover), displaying the bookmarks navigation panel at the left. Magnification should be set to “Fit Width” and Page Layout to “Single Page.” (In Acrobat suite, see File > Document Properties > Open Options.)

**Navigation Panel.** Acrobat bookmarks, based on Word’s built-in Heading 1 through Heading 6 styles, offer the user a handy outline of the document and allow the user to jump instantly to any heading in the document. PDFMaker generates these automatically, but they may have to be edited in Acrobat suite. (Word tabs do not convert to spaces, for instance, and special characters may be dropped. Careful formatting in Word can prevent some of these problems.) It will be necessary to manually add bookmarks for the front and back cover, title page, and perhaps for the Table of Contents, List of Figures, List of Tables, and any other items in the Table of Contents that were not automatically bookmarked by PDFMaker. All bookmarks should be carefully checked to ensure that they correctly reflect the document heading text and are set to the proper document page and position. Before saving the file the final time, collapse all bookmarks to show only first level items.

**Correcting the PDF File.** Acrobat suite allows PDF documents to be edited (although this capacity is very limited) or assembled from separate PDF files. If it is necessary to correct the document after the PDF has been generated, corrections should be made in the original Word file and those individual pages distilled and inserted in the final PDF, replacing the incorrect pages (Document > Replace Pages). However, it is important to ensure that no other part of the Word file is altered by such late corrections and that the final PDF exactly reflects the final, submitted Word file. Bookmarks and hyperlinks to the corrected pages will have to be manually adjusted.

**Blank Pages.** All blank pages are to be deleted from the final PDF (Document > Delete Pages).

**Landscape Pages.** Set all landscape tables and images to display in landscape orientation (Document > Rotate Pages).

**Acrobat Page Numbering.** Acrobat page numbers (Document > Number Pages) should be adjusted so that they agree with document page numbers, whether printed or implied. The cover and back cover should be set to “none.” Blank pages, although removed from the PDF, nevertheless have numbers; thus, the title page should be set to “i” in Acrobat even though that number does not appear on the page, and page iii would immediately follow.

# **REPORT FORMAT**

## **GENERAL**

If a report is bound as a single volume, the executive summary should appear as chapter one and should be targeted for an audience of well-informed laypersons. Succeeding chapters should reflect narrative data addressed to the scientific audience. Any appendices should appear in a back matter section. Table 1 summarizes the key elements of a single-volume report.

Any report that will exceed 2" in thickness when bound and printed double-sided should be subdivided into separate volumes. The executive summary should always be in Volume I and should be targeted for an audience of well-informed laypersons. The executive summary should condense the results and findings and be presented in a manner sufficient to convey the overall significance of those findings. Volume II should be a narrative report or discussion subdivided into appropriate subject chapters and should address the scientific audience. Selection of chapter topics and contents should be made by the contractor, unless specified in the contract. If space is available, any appendices may be presented as back matter in the volume. However, bulky appendices should be provided as Volume III. Table 2 summarizes each volume with its objectives and targeted audience.

## **PAGE NUMBERING**

The front side of all pages should have odd page numbers and the back side should have even page numbers. Thus, the term “odd page” refers to the front of a page and the term “even page” refers to the back of a page.

Placement of page numbers should be at the top of each page, justified right for odd-numbered pages and justified left for even-numbered pages. An optional suggested format is at the bottom center of a page. Front matter pages are numbered consecutively with lowercase Roman numerals. The main text should be numbered consecutively with Arabic numerals.

In some instances, there will be blank pages in a report. If separator pages (Figure 2) are used, the back is to be left blank. Page numbers are to be omitted from the front and back of separator pages and from any page left blank. Blank pages, however, are counted in the total number of pages.

## **ORDER OF ELEMENTS**

The order of elements listed below should be followed as the standard order. Elements listed should appear in each volume; those elements marked as “optional” are not required but would enhance the report.

- (1) Front and Back Covers
- (2) Title Page
- (3) Disclaimer/Report Availability/Citation/Cover Art Acknowledgment
- (4) Foreword or Preface/Acknowledgments (Optional)
- (5) Summary or Abstract (Optional)

- (6) Table of Contents
- (7) List of Figures
- (8) List of Tables
- (9) List of Abbreviations, Acronyms, and Symbols (Optional)
- (10) Main Text or Body
- (11) Back Matter

## **(1) Front and Back Covers**

The front cover (Figures 3 and 4) and back cover (Figure 5) will be prepared by MMS in accordance with standards and provided to the contractor by the COTR. Elements of the front cover that need to be provided by the contractor include the title, subtitle, and cover artwork. These elements should be provided at the draft phase of the report.

The title should be specific but brief and should include pertinent words that would be useful to indexing services and in conducting literature searches. If the report has a subtitle, it should be distinguishable from the title. Exclude unnecessary phrases such as “a study of” or “a report on.” If a report is bound in more than one volume, the subtitle should be used to identify the volume in Roman numerals, e.g., Volume I: Executive Summary. If the report is the result of a multiyear study that is being reported on an annual basis, identify the report by year, i.e., Year 2: Annual Report or Year 6: Final Report.

Artwork for the outside front cover should be carefully selected from photographs, illustrations, maps, charts, and other graphics relating to the subject matter. Photographs selected should be submitted as glossy color prints and as digital files. The selection of slides or negatives for the cover artwork should not require special manipulation if they are high quality. Line art, including drawings, charts, maps, and other graphics, should be submitted as original artwork. Protect the original photograph, slide, negative, or artwork inside a separate envelope or package that has been clearly marked with the name of the contract. Contractors should address any questions on such matters to the COTR. Use of any copyrighted material (including photographs) should be authorized in writing. A copy of each authorization must be delivered to the COTR.

When a project receives major support from another governmental agency, i.e., an Interagency Agreement, the contractor should furnish the following information to the COTR: supporting agency’s name, Department affiliation, and publication identification number.

## **(2) Title Page (first odd page, unnumbered)**

The title page is a mandatory front matter page and should be provided in draft format by the contractor with all draft versions of the report. The page (Figures 6 and 7) will be provided in final format to the contractor by the COTR and will be formatted in accordance with MMS standards. Elements of the title page include the title, subtitle (if any), authors or editors, contractor and address, and contract number. Projects that receive major support from other governmental agencies may also include the project officer on the title page.

Begin the list of authors with the program manager. Do not include professional degrees or titles. Authors or editors should be listed by author's preference as either (a) first name, middle initial, last name or (b) first initial, middle name, last name. Co-authorship should be restricted to those who contributed substantially to the preparation of the publication. There should be no more than five authors listed.

When numerous authors have contributed to a report, list only the main author and editor on the title page. The remaining authors and editors (a) can then be mentioned in the Acknowledgments or (b) their names can be added to the chapters they wrote or edited (Figure 8). Contractors should address any questions on such matters to the COTR.

**(3) Disclaimer/Report Availability/Citation/Acknowledgments (new odd page, Roman-numbered)**

This mandatory page is subdivided into headed sections: Disclaimer, Report Availability, Citation, and Acknowledgments and/or About the Cover, if applicable. All use of copyrighted materials must be clearly stated and copies of permissions provided (as part of the contract deliverable). Precise wording for this page is provided in Figures 9 and 10.

**(4) OPTIONAL: Foreword or Preface/Acknowledgments (new odd page, Roman-numbered)**

A foreword is an introductory note written as an endorsement by someone other than the author. A preface (Figure 11) is written by the author and includes information that must appear in the manuscript but is not relevant to the technical text. The preface should contain a brief description of the contents of the report, an explanation of how the material has been organized and, if appropriate, an explanation of how the report will be updated. Any stipulations regarding the use of information in the report should be addressed here. Permissions to use copyrighted materials should also be stated.

Acknowledgments (Figure 12) recognize individuals other than authors and organizations that contributed significantly to the project or report. However, if several contractors or program managers were involved in the preparation of the report, include this information here rather than on the title page. Any additional funding sources should be mentioned here.

**(5) OPTIONAL: Summary or Abstract (new odd page, Roman-numbered)**

A summary or abstract (Figure 13) outlines the main conclusions, results, and recommendations of the study. An abstract should clearly and concisely state the thesis, describe the methodology, and state the findings and conclusions.

**(6) Table of Contents (new odd page, Roman-numbered)**

All reports should include a Table of Contents (Figure 14). The listings should match verbatim the headings and subheadings of the text and the names of individual appendices. Please ensure accuracy of page numbers in the final draft submitted since revisions and repagination cause the page numbers to change. The Table of Contents should list headings at least down to the second level.

### **(7) List of Figures (new odd page, Roman-numbered)**

Each volume of a report, except appendices, that contains at least two figures should include a list of figures (Figure 15). For each illustration, the figure number and caption as they appear in the report and the page number should be provided. Lists of figures and tables less than one-half page in length may be stacked on the same page.

### **(8) List of Tables (new odd page, Roman-numbered)**

Each volume of a report, except appendices, that contains at least two tables must include a list of tables (Figure 16). For each table, the number and title as they appear in the report and the page number should be provided. Again, please ensure accuracy of page numbers in the final draft submissions since revisions and repagination cause page numbers to change.

### **(9) OPTIONAL: List of Abbreviations, Acronyms, and Symbols (new odd page, Roman-numbered)**

If there are many nonstandard abbreviations or symbols within the text of a manuscript, a list of abbreviations, acronyms, and symbols should be included (Figure 17). In addition, each nonstandard menu term or symbol should be defined when first mentioned in the text, followed by its abbreviation or symbol in parentheses. The abbreviation or symbol should be used thereafter in the text, unless there is a large intervening gap in usage.

### **(10) Main Text or Body (new odd page, first Arabic-numbered)**

The main text of a report typically includes an introduction, methodology, results, discussion, conclusions, and recommendations. The first page of the main text or body should begin with Arabic numeral 1 and the remainder of the text should be consecutively numbered, including blank pages and pages with charts, maps, tables, and illustrations.

Separator pages alert the reader to a change in the subject matter. If separator pages are used, they should always be introduced as a new odd page and should be blank on the back (Figure 2).

References cited in the text should follow the name-and-year system (Harvard); e.g., the author's surname followed by the year of the publication. Do not put a comma between the surname and year. If there are two authors, list both surnames before the year; for three or more authors, list the senior author's surname followed by "et al." and the year in that order.

One author: (Smith 1996)

Two authors: (Smith and Jones 1996)

Three or more authors: (Smith et al. 1996)

### **(11) Back Matter (new odd page, Arabic-numbered)**

Literature citations, bibliographies, or references are mandatory sections that follow the main text in a separate section. They should be consistent in format (Figure 18).

For reports that include cited and uncited works in the text, whether published or unpublished, the section should be called a list of references or a bibliography. If the section lists only references cited in the text, the section should be titled "Literature Cited."

Entries should appear alphabetically by author's name with multiple listings arranged chronologically by year of publication. Should multiple entries for the same author appear for a given year, entries should be sequenced alphanumerically by year, with the most recent at the end. The author may then sequence such multiple listings by either (a) listing entries in the order in which they appear in the text or (b) alphabetizing entries by title.

When appendices are used, each appendix should begin on a new odd page with a separator page followed by the appendix on the succeeding new odd page. Identify each appendix with a capital letter in alphabetical order. The appendices should appear in the Table of Contents.

The Report Documentation Page (Standard Form 298 (Rev. 2-89)) will be the last new odd page in each volume (Figure 19). An abstract of the report describing the research goals, methodology, and results achieved by the project should be prepared by the contractor and appear in Block 13. Each abstract should contain information that describes the specific contents of that volume. Instructions for completion of the Standard Form 298 Report Documentation Page (RDP) are found in Figure 20. You can find an electronic Word version and a PDF of the RDP by going to <http://www.gomr.mms.gov/homepg/regulate/environ/studiesprogram.html>.

## **TEXT AND GRAPHICS SPECIFICATIONS**

Preparation of the draft, proof, and final report should follow the specifications described below. The contractor should make corrections to the draft, final, and proof copies as specified by the COTR. Additions or revisions affecting the contractor's interpretations, recommendations, or judgments will be changed by mutual agreement. Consistency is the key in spelling, numerals, and rules of grammar.

### **TEXT**

The report should be printed single-spaced on one side of the page only. The report must be produced on a laser-quality printer capable of handling graphics with good resolution. Black ink is to be used on high-quality white paper measuring 8 1/2" by 11".

All pages are to maintain a 1" margin on all sides; however, please remember to allow room for the page number if it is to be placed at the bottom center of the page. In such case the page number should be at least 0.5" from the bottom edge of the page.

"Widows" and "orphans" are not permitted. Do not hyphenate the last word on a page. In general, avoid using hyphens to break words across lines; if you must divide a word, use Word's "optional hyphen" (Insert > Symbol > Special Characters), which only appears when needed at the end of a line.

The main text should be set as a 10-point font, but a 12-point font is acceptable. The same font should be used throughout the report. A proportional typeface is recommended; but in any event, the text must be set in a typeface having serifs. (A sans serif typeface, such as Arial, is permissible for display type, headings, tables, figures, and captions.)

## **GRAPHICS (FIGURES AND TABLES)**

Figures (illustrations, maps, charts, and other graphics) and tables should closely follow their first reference in the text; however, figures or tables that are numerous in relation to the text may be grouped in numerical sequence at an appropriate place within the text.

Care should be taken to ensure that figures and tables are precisely and squarely aligned on each page and that all elements fit within the margins. Figures and tables should be numbered consecutively using Arabic numerals. A period, two spaces, the title, and a period should follow each number. Figure numbers and captions should be placed directly below the figure. Text for the caption should be indented after the figure number. Table numbers and titles should be centered above the table and separated by blank lines, as in Tables 1 through 5.

To avoid excessively large files, figures may be linked rather than embedded in Word files, with the source files included on the same disk and in the same folder as the main document. If the figures are embedded, copies in the source format should be included as separate files in a folder called "Source Figures." Cover and back cover graphics should not be embedded.

Graphic files, including photographs, should be in the TIFF or JPEG formats, with color images at 300 dpi and all others (black and white, grayscale) at 600 dpi. They should also be no more than 5 megabytes in file size.

Images must always fit within page margins and should never exceed 6.4" in width in portrait orientation or 8.9" in landscape.

The preferred orientation for figures and tables is portrait (Figures 21 and 23). When the orientation for a page needs to be landscape (Figures 22 and 24) be sure the justification is set to the left.

All figures and tables, including their titles, should fit inside the 1" margins established for all sides of the page. Foldouts are strongly discouraged, although they are allowed. (Foldouts are discouraged because they increase the cost of duplicating the document since they must be inserted manually.) If foldouts are necessary because a figure or table cannot be reduced to fit on a page, it is recommended they be folded and placed in a pocket at the back of the report. If reductions are necessary, all lettering inside the figure or table should appear no smaller than a 6-point font and, as mentioned earlier, all lettering within the figure or table should be the same type font. Titles, however, should always match the point size used in the text of the report.

Lengthy tables may be divided and placed on consecutive pages with the title repeated on each page. The continuing page of the table should have the word "continued," in parentheses, immediately following the title.

Line art, including drawings, charts, maps, and graphs should include only pertinent details to ensure legibility. Lettering should be a sans serif style. Do not use large areas of solid black. Avoid using any patterns that are too coarse, excessively fine, or distracting. Submit originals or, at a minimum, first-generation copies. Originals of all line art should be submitted with the final report.

## NUMERALS

Use words to express whole numbers through “nine” and numerals for numbers 10 and above except in expressing units of measurement, time, and dates. Ordinal numbers should follow the same guidelines; e.g., sixth, 23rd.

In the text proper, substitute words for part of very large numbers, such as 25 million, 8.3 million, \$3 billion, and \$26.8 million, or use scientific notation unless accuracy requires the use of a long number.

The modernized metric system is known as the International System of Units (SI) and is the preferred standard usage. It is founded on seven base units (Table 3) that are regarded as dimensionally independent. All other units are derived units formed coherently by multiplying and dividing units within the system without numerical factors. Examples of derived units, including some with special names, are listed in Table 4.

An important function of the SI is to discourage the proliferation of unnecessary units. However, it is recognized that some units outside the SI are so well established that their use is permitted. Units in use with the SI are listed in Table 5. As exceptions to the rules, the symbols °, ', and " for units of plane angle are not preceded by a space and the symbol for liter, L, is capitalized to avoid confusion between the letter l and the number 1.

Use numbers for expressions of time, such as dates, page numbers, percentages, and numeral designations:

July 3, 1996; 14 December 1996; August 1996  
page 527  
98%; 98 percent  
type 2

## MISCELLANEOUS

The preferred method to indicate the atomic number and mass number is to write them as subscript and superscript, respectively, e.g., Cobalt-60 should be written as:  ${}_{27}^{60}\text{Co}$ . To indicate isotopes use one of the following: Cobalt-60; Co-60;  $\text{Co}^{60}$ . Any of these methods are acceptable.

The preferred rate and concentration methods are reciprocal units:  $\text{cm s}^{-1}$

Individual measurements should be presented with an indication of the error of measurement. Within a class of measurements, the method of indicating error should be consistent and knowledge of the errors inherent in the measurement process should be summarized for each class of measurements. The expression of error (standard deviation, coefficient of variation, confidence limits, etc.) should be specific.

$$23.9 \pm 0.3 \text{ mg g}^{-1}$$

All significant digits should be considered. The generating number with the fewest significant digits limits the significant digits in a number:

$$1.00 \times 964.259 = 964$$

$$1.0 \times 9,643.42 = 9,600$$

Be consistent with dimensions; e.g., tubing and area dimensions or positions:

5 mm I.D. x 5 m

5 mm x 20 cm x 2 m

31°21' N. latitude, 56°05' W. longitude

Logarithms may be expressed as follows:

ln — natural base

log — base 10

The name “Celsius” is preferred to “centigrade.”

Organize a series of topics that is lacking a meaningful sequence in either alphabetical or numerical order. For example:

- a. Al, Ca, C, Fe, Ni, Pb, and Zn
- b. Barium, chromium, lead, and nickel
- c. I, II, III, IV, and V
- d. hydrocarbons and trace metals

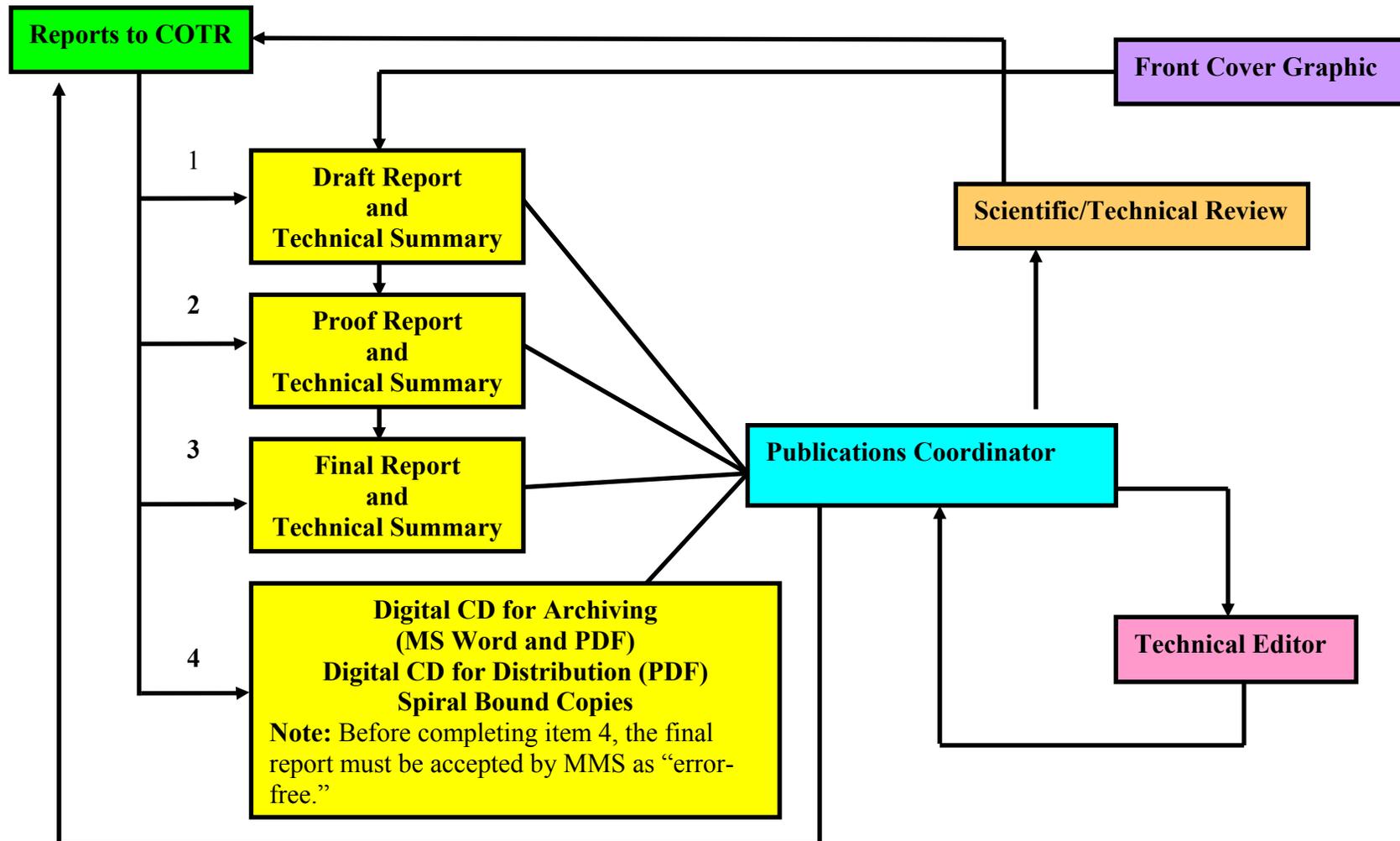


Figure 1. Report processing flowchart.

## **MARINE ECOSYSTEMS**

The Marine Ecosystem Studies Series includes major field efforts addressing multidisciplinary data gathering, analysis, and interpretation. The objectives of these studies were to gather data characterizing the physical environment and biological communities prior to the onset of oil and gas activities in so-called "frontier" areas, so that changes in these characteristics following oil and gas exploration and development could be ascertained and perhaps mitigated. The baseline studies were brought to an abrupt halt in late 1978 following criticism by various individuals and agencies that the studies did not provide information in a timely manner for lease-management decisions. That is, information describing the physical environment, biological habitats and communities, and naturally occurring regional hazards is needed to make management decisions regarding advisability of leasing in particular areas. Information is also needed for stipulations to mitigate both the hazards to the offshore operations and the hazards to the environment caused by the offshore operations. Similarly, information is needed to define the terms of the lease stipulations or other mitigating measures to ensure their effectiveness.

Figure 2. Sample separator page.

# **Boating Uses, Economic Significance, and Information Inventory for North Carolina's Offshore Area, "The Point"**

**Volume I: Characterization of Recreational  
and Commercial Fisheries**



Figure 3. Organization of the front cover.



OCS Study  
MMS 2002-009

Coastal Marine Institute

# Effects of Simultaneous Exposure to Petroleum Hydrocarbons, Hypoxia, and Prior Exposure on the Tolerance and Sublethal Responses of Marine Animals: Blue Crabs and Killifish

Final Report



**MMS** U.S. Department of the Interior  
Minerals Management Service  
Gulf of Mexico OCS Region



Cooperative Agreement  
Coastal Marine Institute  
Louisiana State University

Figure 4. Organization of the front cover for a cooperative agreement.



#### 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.

Figure 5. Organization of the outside back cover.

OCS Study  
MMS 2000-009

# **Observation of the Atmospheric Boundary Layer in the Western and Central Gulf of Mexico**

## **Second Annual Report**

Preparers

Radian International LLC  
and  
Sonoma Technology, Inc.

Prepared under MMS Contract  
1435-01-97-CT-30854  
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Petaluma, California 94954

Published by

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Gulf of Mexico OCS Region**

**New Orleans  
March 2000**

Figure 6. Title page format.

OCS Study  
MMS 2000-014

**Coastal Marine Institute**

**Air Quality and Dispersion Meteorology  
over the Northeastern Gulf of Mexico:  
Measurements, Analyses, and Syntheses**

Authors

S. A. Hsu  
and  
B. W. Blanchard

March 2000

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Coastal Marine Institute  
Louisiana State University**

Figure 7. Title page format for cooperative agreement.

Chapter 2  
Editorial Analysis

Project Personnel:  
Michael Dorner, Deborah Miller, Donna Bourg, and Patrick Adkins

Minerals Management Service

2.1 Introduction Text for the chapter can begin.

Text for the chapter can begin.

Figure 8. Sample acknowledgment of author by chapter.

### **DISCLAIMER**

This report was prepared under contract between the Minerals Management Service (MMS), the Texas Institute of Oceanography, and the National Marine Fisheries Service. This report has been technically reviewed by the MMS, and it has been approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the MMS, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. It is, however, exempt from review and compliance with the MMS editorial standards.

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Gulf of Mexico OCS Region  
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1201 Elmwood Park Boulevard  
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### **ABOUT THE COVER**

The cover art depicts a clymene dolphin and is the work of Mark Grace, an employee of the National Marine Fisheries Service Laboratory at Pascagoula, Mississippi.

Figure 9. Sample disclaimer/report availability/citation/cover art acknowledgment page.

### **DISCLAIMER**

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### **ACKNOWLEDGMENT**

Thanks are extended to Paul Blankenship whose knowledge of Papyrus was essential to integrating the many different electronic search formats.

Figure 10. Sample disclaimer/report availability/citation/acknowledgment page.

## **PREFACE**

The following GOOMEX Interim Report summarizes progress made to date in the “Gulf of Mexico Offshore Monitoring Experiment Phase I, Sublethal Responses to Contaminant Exposure” program. As an important and purposeful part of the study design, the methodologies, interpretations, and study approach have continued to evolve during the course of the program. It should be noted that the preliminary interpretations presented in this volume are based on partial data sets collected during Cruises 1 and 2 and are subject to revision as the data and additional sampling are completed. In many instances the trends alluded to in the data need further verification and testing and should not be construed as the final product or conclusions ultimately to be produced by the GOOMEX Phase I Program.

Figure 11. Sample preface.

## ACKNOWLEDGMENTS

This report would not have been possible without the contributions of a large number of people from Texas A&M University, Louisiana State University, Evans-Hamilton, Inc., Maine Maritime Academy, and the University of Southern Mississippi. We thank the principal investigators who contributed text to this volume: Ann Jochens (Program Management, Task A-8), Deni Wiesenbarg (Task A-3), Doug Biggs (Task A-4), and S.A. Hsu (Task A-6).

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We thank Roger Fay for his work in coordinating logistics and onshore support for the current meter cruises. No data could have been collected without outstanding work by the crews of the vessels; thus, our thanks to Captain Mike Field of the R/V *Gyre*, Captains Dana Dyre and Pat Sherrard of the R/V *J.W. Powell*, and to their crews. Captain Dean Letzring and Sandra Green of Marine Operations, Department of Oceanography, TAMU, offered assistance with main aspects of the LATEX cruises. Their unfailing cooperation is greatly appreciated.

Thanks also to the project administration staff of the Texas A&M Research Foundation. At the RF, our greatest debt of gratitude is owed to Phyllis Bonifazi and Charlene Miller.

Mattreen F. Reap  
Ann E. Jochens  
Worth D. Nowlin, Jr.

Figure 12. Sample acknowledgments.

## ABSTRACT

Major oil and gas companies are shifting exploration and production (E&P) investment from the United States to foreign countries. As they do so, smaller companies, "independents," are expected to play a more prominent role in domestic E&P. Within both industry and government circles the apprehension is widespread that such a shift from the majors to the independents will cause domestic oil and gas resources to be developed less aggressively and less efficiently.

This project addresses such concerns by attempting to discern and quantify differences in behavior and success among firms of different sizes (majors, large, and small independents) operating in the Gulf of Mexico OCS region. Descriptive analysis of data on drilling effort and outcomes on the Gulf of Mexico indicates independents have been both more aggressive and successful than the majors in exploration, while the majors have been only moderately more successful than independents in development drilling. Overall, independents appear to have been at least as successful as the majors.

To investigate these differences more carefully, we developed a hydrocarbon model describing the process of adding to reserves through incremental drilling. The model was estimated using data from the Gulf of Mexico OCS region. The model is a combination of an econometric specification of the firm's drilling behavior with the firm's drilling productivity function. The model is used to analyze the effects of taxation, depletion and economic incentives on drilling and drilling productivity. Empirical estimates of the hydrocarbon model of reserve additions confirm the inferences drawn from descriptive analysis. Our measurements indicate that independents respond to market and industry conditions in the same way as do the majors. Thus, we do not believe OCS petroleum resources would be developed less aggressively or less efficiently if the independents were to do relatively more of the search for and development of hydrocarbons in the region.

Figure 13. Sample abstract.

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Figure 16. Sample list of tables.

## ABBREVIATIONS, ACRONYMS, AND SYMBOLS

~	approximately	BRD	Biological Resources Division (USGS)
°	degree		
\$	dollar		
>	greater than	C	Celsius
≥	greater than or equal to	CAA	Clean Air Act of 1970
<	less than	CAAA	Clean Air Act Amendments of 1990
≤	less than or equal to	Call	Call for Information and Nominations
μg	microgram	CBRA	Coastal Barrier Resources Act
'	minute	CBRS	Coastal Barrier Resource System
%	percent	CCA	Coastal Coordination Act (Texas)
§	section	CCMP	Comprehensive Conservation and Management Plan
dB re <sup>-1</sup> μPa-m	standard unit for source levels of underwater sound	CD	Consistency Determination
		CDP	common-depth-point (seismic survey)
2D	two-dimensional		
3D	three-dimensional	CEI	Coastal Environments, Inc.
4C	multicomponent (data)	CEQ	Council on Environmental Quality
4D	four-dimensional	CER	categorical exclusion review
5-Year Program	<i>Outer Continental Shelf Oil and Gas Leasing Program: 2002-2007</i>	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
ac	acre	cf.	compare, see
ACAA	Alabama Coastal Area Act	CFDL	Coastal Facilities Designation Line (Texas)
ACAMP	Alabama Coastal Area Management Program	CFR	Code of Federal Regulations
ACP	Area Contingency Plans	Chouest	Edison Chouest Offshore (also ECO)
ADCP	Acoustic Doppler Current Profiler	CIAP	Coastal Impact Assistance Program
ADCNR	Alabama Department of Conservation and Natural Resources	CIS	corrosion inhibiting substance
ADEM	Alabama Department of Environmental Management	cm	centimeter
AHTS	anchor-handling tug supply vessels	CNG	compressed natural gas
AIRS	Aerometric Information Retrieval System	CNRA	Coastal Natural Resources Area
APD	Application for Permit to Drill	CO	carbon monoxide
API	American Petroleum Institute	COE	Corps of Engineers (U.S. Army) (also USCOE)
Area ID	Area Identification	COF	covered offshore facility
ASLM	Assistant Secretary of the Interior for Land and Minerals	CPA	Central Planning Area
atm	atmosphere	CSA	Continental Shelf Associates
AVHRR	Advanced Very High Resolution Radiometer	CWA	Clean Water Act
		CWPPRA	Coastal Wetlands Protection, Planning & Restoration Act
BAST	best available and safest technology	CZARA	Coastal Zone Act Reauthorization Amendments of 1990
bbbl	barrel	CZM	Coastal Zone Management
BBO	billion barrels of oil	CZMA	Coastal Zone Management Act
BOE	barrels of oil equivalent	CZPA	Coastal Zone Protection Act of 1996
Bcf	billion cubic feet	DEP	Department of Environmental Protection (State of Florida)
BLM	Bureau of Land Management	DOC	Department of Commerce (U.S.) (also USDOC)
BO	Biological Opinion	DOCD	Development Operations Coordination Document
BOD	biochemical oxygen demand		
BOP	blowout preventer		
B.P.	before present		

Figure 17. Examples of list of abbreviations, acronyms, and symbols.

DOD	Department of Defense (U.S.) (also USDOD)	FPSO	floating production, storage, and offloading system
DOI	Department of the Interior (U.S.) (also USDO)	FR	<i>Federal Register</i>
DOT	Department of Transportation (U.S.) (also USDOT)	ft	foot
DOTD	Department of Transportation and Development (Louisiana)	FWS	Fish and Wildlife Service (U.S.)
DP	dynamically positioned	G&G	geological and geophysical
DPV	dynamically positioned vessel	gal	gallon
DWOP	Deepwater Operations Plan	GEMS	Gulf Ecological Management Site
dwt	dead weight tonnage	GERG	Geochemical and Environmental Research Group
E&D	exploration and development	GINS	Gulf Islands National Seashore
E&P	exploration and production	GIS	geographical information system
EA	environmental assessment	GIWW	Gulf Intracoastal Waterway
ECO	Edison Chouest Offshore (also Chouest)	GLPC	Greater Lafourche Port Commission
EEZ	Exclusive Economic Zone	GMAQS	Gulf of Mexico Air Quality Study
EFH	Essential Fish Habitat	GMFMC	Gulf of Mexico Fishery Management Council
e.g.	for example	GMP	Gulf of Mexico Program
Eh	oxidation reduction potential	GOM	Gulf of Mexico
EIA	Energy Information Administration (USDOE)	GPS	global positioning system
EIS	environmental impact statement	GS	Geological Survey (also USGS)
EMAP-E	Environmental Monitoring and Assessment Program for Estuaries (USEPA)	GSA	Geological Survey of Alabama
EP	Exploration Plan	GTFP	green turtle fibropapillomatosis
EPA	Eastern Planning Area	GulfCet	Gulf Cetaceans
Era	Era Aviation	H <sub>2</sub> S	hydrogen sulfide
ESA	Endangered Species Act of 1973	ha	hectare
ESI	Environmental Sensitivity Indices	HAPC	Habitat Areas of Particular Concern
ESP	Environmental Studies Program	HCl	hydrochloric acid
ESPIS	Environmental Studies Program Information System	HLV	heavy lifting vessel
et al.	and others	HMS	highly migratory species
et seq.	and the following	hr	hour
EWTA	Eglin Water Test Area	Hz	hertz
FAA	Federal Aviation Administration	IADC	International Association of Drilling Contractors
FAD	fish attracting devices	i.e.	that is
FCF	Fishermen's Contingency Fund	INTERMAR	International Activities and Marine Minerals Division (MMS)
FCMP	Florida Coastal Management Program	IPF	impact-producing factors
FDEP	Florida Department of Environmental Protection	IT	incidental take
FDR	floating drilling rig	ITM	Information Transfer Meetings
FERC	Federal Energy Regulatory Commission	kJ	kilojoule
FGBNMS	Flower Garden Banks National Marine Sanctuary	kg	kilogram
FMC	Fishery Management Council	km	kilometer
FMG	Florida Middle Ground	kn	knots
FMP	Fishery Management Plan	l	liter
FONNSI	finding of no new significant impact	LA	Louisiana
FPS	floating production system	LADNR	Louisiana Department of Natural Resources (also LDNR)
		LA Hwy 1	Louisiana Highway 1
		LATEX	Texas-Louisiana Shelf Circulation and Transport Process Program (MMS-funded study)

Figure 17. Examples of list of abbreviations, acronyms, and symbols (continued).

LC <sub>50</sub>		NGL	natural-gas liquids
LCE	Loop Current Eddy	NGVD	National Geodetic Vertical Depth
LCRP	Louisiana Coastal Resources Program	NHPA	National Historic Preservation Act
LDNR	Louisiana Department of Natural Resources (also LADNR)	NHS	National Highway System
LNG	liquefied natural gas	NMFS	National Marine Fisheries Service (also known as NOAA Fisheries)
LOOP	Louisiana Offshore Oil Port	nmi	nautical mile
LPG	liquefied petroleum gas	No.	number
LSU	Louisiana State University	NO <sub>2</sub>	nitrogen dioxide
m	meter	NO <sub>x</sub>	nitrogen oxide
MA	Mississippi Alabama	NOA	Notice of Availability
MAFLA	Mississippi, Alabama, and Florida	NOAA	National Oceanic and Atmospheric Administration
MARPOL	International Convention for the Prevention of Pollution from Ships	NOAA Fisheries	the DOC agency also known as NMFS
Mcf	thousand cubic feet	NOI	Notice of Intent to Prepare an EIS
MCP	Mississippi Coastal Program	NORM	naturally occurring radioactive material
MFCMA	Magnuson Fishery Conservation and Management Act of 1976	NOS	National Ocean Service
mg	milligrams	NOSAC	National Offshore Safety Advisory Committee
mi	statute mile	NOW	nonhazardous oil-field waste
MRGO	Mississippi River Gulf Outlet	NPDES	National Pollution and Discharge Elimination System
Mbbl	thousand barrels	NPFC	National Pollution Funds Center
mm	millimeter	NPS	National Park Service
MMbbl	million barrels	NRC	National Research Council
MMC	Marine Mammal Commission	NRDA	Natural Resource Damage Assessment
MMcf	million cubic feet	n.sp.	new specie
MMPA	Marine Mammal Protection Act of 1972	NTL	Notice to Lessees and Operators
MMS	Minerals Management Service	NUT	new or unusual technology
MPA	Marine Protected Area	NWR	National Wildlife Refuge
mph	miles per hour	NWRC	National Wetlands Research Center
MSA	Metropolitan Statistical Area	O <sub>2</sub>	oxygen
MSD	marine sanitation device	O <sub>3</sub>	ozone
MSRC	Marine Spill Response Corporation	OBC	ocean bottom cables
MSL	mean sea level	OBF	oil-based drilling fluids
MSW	municipal solid waste	OCB	Offshore and Coastal Dispersion
Mta	million metric tons annually	OCRM	Office of Ocean and Coastal Resource Management
MODU	mobile offshore drilling unit	OCS	Outer Continental Shelf
MOU	Memorandum of Understanding	OCSLA	Outer Continental Shelf Lands Act
MPPRCA	Marine Plastic Pollution Research and Control Act of 1987	ODD	Ocean Disposal Database
MPRS	Marine Protection, Research, and Sanctuaries Act of 1972	OPA	Oil Pollution Act of 1990
MTBE	methyl tertiary butyl ether	OPA 90	Oil Pollution Act of 1990
Mya	Million years ago	OPEC	Organization for Petroleum Exporting Countries
N.	North	OPEIU	Office of Professional Employees International Union
NAAQS	National Ambient Air Quality Standards	OSCP	Oil Spill Contingency Plan
NACE	National Association of Corrosion Engineers	OSFR	oil-spill financial responsibility
NEP	National Estuary Program	OSLTF	Oil Spill Liability Trust Fund
NEPA	National Environmental Policy Act	OSM	Office of Safety Management
NFEA	National Fishing Enhancement Act	OSRA	Oil Spill Risk Analysis

Figure 17. Examples of list of abbreviations, acronyms, and symbols (continued).

OSRO	Oil Spill Removal Organization	SO <sub>2</sub>	sulphur dioxide
OSRP	oil-spill response plan	SO <sub>x</sub>	sulphur oxide
OSV	offshore supply vessels	SOLAS	Safety of Life at Sea
P	compressional (wave)	sp.	species
P.L.	Public Law	spp.	multiple species
PAH	polynuclear aromatic hydrocarbon	Stat.	Statute
PCB	polychlorinated biphenyl	TA&R	Technical Assessment & Research Program (MMS)
pCi	picocuries	TAMU	Texas A&M University
PEMEX	Petroleos Mexicanos	Tcf	trillion cubic feet
pH	potential of hydrogen	TCMP	Texas Coastal Management Plan
PHI	Petroleum Helicopters, Inc.	TED	turtle excluder device
PINC	Potential Incident of Noncompliance	TIMS	Technical Information Management System (MMS)
PM <sub>10</sub>	particulate matter smaller than 10 microns	TLP	tension leg platform
POE	Plan of Exploration	TRW	topographic Rossby wave
ppb	parts per billion	TSS	traffic separation scheme
ppm	parts per million	TWC	treatment, workover, and completion
PSD	Prevention of Significant Deterioration	TX	Texas
psi	pounds per square inch	U.S.	United States
PSV	platform supply vessel	U.S.C.	United States Code
R&D	research and development	USCG	U.S. Coast Guard
RCRA	Resource Conservation and Recovery Act	USCOE	U.S. Army Corps of Engineers (also COE)
RD	Regional Director	USDOC	U.S. Department of Commerce (also DOC)
RFG	reformulated motor gasoline	USDOD	U.S. Department of Defense (also DOD)
ROTAC	Regional Operations Technology Assessment Committee	USDOJ	U.S. Department of the Interior (also DOI)
ROV	remotely operated vehicle	USDOT	U.S. Department of Transportation (also DOT)
RP	Recommended Practice	USEPA	U.S. Environmental Protection Agency
RS-FO	Regional Supervisor for Field Operations	USGS	United States Geological Survey (also GS)
S.	South	VK	Viosca Knoll
SAFMC	South Atlantic Fishery Management Councils	VOC	volatile organic compounds
SARA	Superfund Amendments and Reauthorization Act	vs.	versus
SBF	synthetic-based drilling fluid	W.	West
SEAMAP	Southeastern Area Monitoring and Assessment Program	WBF	water-based drilling fluids
sec	second	WPA	Western Planning Area
Secretary	Secretary of the Interior	yr	year
SEIS	supplemental environmental impact statement		
semi	semisubmersible		
SIC	Standard Industrial Classification		
SIP	State implementation program		

Figure 17. Examples of list of abbreviations, acronyms, and symbols (continued).

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Figure 18a. Sample literature cited/references: samples for book.

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Figure 18b. Sample literature cited/references: sample for chapter in a book or MMS study.

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Figure 18c. Sample literature cited/references: sample for journal.

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Figure 18d. Sample literature cited/references: sample for internet.

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Figure 18e. Sample literature cited/references: sample for MMS document.

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Figure 18f. Sample literature cited/references: sample for thesis.

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Figure 18g. Sample literature cited/references: sample for in preparation, in press, unpublished, and submitted.

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
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13. ABSTRACT (Maximum 200 words)  The primary purposes of the ITM are (1) to provide a forum for interchange on topics of current interest relative to environmental assessments in support of offshore oil and gas activities in the Gulf of Mexico OCS Region; (2) to present the accomplishments of the MMS Environmental Studies Program for the Gulf of Mexico and of other research programs or study projects; and (3) to foster an exchange of information of regional interest among scientists, staff members, and decision-makers from MMS, other Federal or State governmental agencies, regionally important industries, and academia and to encourage opportunities for these attendees to meet and nurture professional acquaintances and peer contacts.  Support funding is provided through the MMS Environmental Studies Program. Logistical support for the ITM is provided by a contractor and subcontractors selected through the Federal procurement process. A proceedings volume is prepared for each ITM based on summaries of brief technical papers submitted by each speaker and on each session chair's added comments.				
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Figure 19. Sample report documentation page.

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**1. REPORT DATE.** Full publication date, including day, month, if available. Must cite at least the year and be Year 2000 compliant, e.g. 30-06-1998; xx-06-1998; xx-xx-1998.

**2. REPORT TYPE.** State the type of report, such as final, technical, interim, memorandum, master's thesis, progress, quarterly, research, special, group study, etc.

**3. DATES COVERED.** Indicate the time during which the work was performed and the report was written, e.g., Jun 1997 - Jun 1998; 1-10 Jun 1996; May - Nov 1998; Nov 1998.

**4. TITLE.** Enter title and subtitle with volume number and part number, if applicable. On classified documents, enter the title classification in parentheses.

**5a. CONTRACT NUMBER.** Enter all contract numbers as they appear in the report, e.g. F33615-86-C-5169.

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**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES).** Self-explanatory.

**8. PERFORMING ORGANIZATION REPORT NUMBER.**

Enter all unique alphanumeric report numbers assigned by the performing organization, e.g. BRL-1234; AFWL-TR-85-4017-Vol-21-PT-2.

**9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES).** Enter the name and address of the organization(s) financially responsible for and monitoring the work.

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**13. SUPPLEMENTARY NOTES.** Enter information not included elsewhere such as: prepared in cooperation with; translation of; report supersedes; old edition number, etc.

**14. ABSTRACT.** A brief (approximately 200 words) factual summary of the most significant information.

**15. SUBJECT TERMS.** Key words or phrases identifying major concepts in the report.

**16. SECURITY CLASSIFICATION.** Enter security classification in accordance with security classification regulations, e.g. U, C, S, etc. If this form contains classified information, stamp classification level on the top and bottom of this page.

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Figure 20. Instruction sheet for report documentation page.

Table 4-52

Recommended Mitigation Techniques Used to Avoid or Reduce Adverse Impact to Wetlands  
by Pipelines, Canals, Dredging, and Dredged Material Placement

Technique	Decision Process	Factors To Consider
<b>Pipeline Construction</b>		
Avoidance	Route Selection and Location Evaluation of potential routes that avoid wetlands entirely Shared ROW and Pipelines Using all or part of an existing ROW would avoid new impacts to wetlands	Length of route Difficulty of the land for pipeline installation, i.e., access points, sediment characteristics Presence of other pipelines Presence of transportation corridors Density of surrounding developments Number of different land owners
Minimization	Necessity of pipeline contents	Environment function Timing of the project Previous pipeline installations Availability of equipment
Location/Route Selection	Early planning Considering wetland type Use of aerial photography as well as digital and topo maps combined with field surveys to identify route of minimal impact	Most routes are predetermined by the beginning and end points Flexibility within general route to locate sections of pipelines to one side or another to take advantage of upland areas, existing ROW, etc.
Existing ROW/Corridors	Plan routes paralleling existing pipelines (safety issues) Timing right to share section of pipeline between or among users	Group pipelines in corridors where impacts are limited to smaller areas of coastal wetlands
Construction/Installation	Methods depend on environment pipeline is constructed Flotation canals Push-pull method Single versus double ditching techniques Directional drilling*	Choice of method has implications for Type of impact Access impact Impact from specific equipment
<b>Dredging</b>		
Dredge and Other Material Disposal	Features associated with pipeline canals and navigation channels Avoid levees by spray dredging, levee manipulation/spoil bank removal, and canal backfilling	Navigation channels and some canals must be left open for access Impacts associated with spoil banks include soil compaction, impoundment, and creation of upland vegetation
Dredge Material Bank Removal	Identify areas to place dredge Navigation channels Canals that cannot be backfilled Potential use for filling nearby old canal or abandoned navigation channels Offsite mitigation	Due to expense and difficulty in many coastal areas only used in sensitive areas
Levee Manipulation	Dredge material should allow water to pass through openings in the line of dredge placement	Levees used as walkways and built from material placed in a long line paralleling the length of the project is detrimental to marsh and should be built discontinuous instead Must maintain natural hydrologic pattern Technique is post construction technique where sections of dredge banks are removed in order to restore hydrologic flow

Figure 21. Example of a table in portrait orientation.

Table 4-52. Recommended Mitigation Techniques Used to Avoid or Reduce Adverse Impact to Wetlands by Pipelines, Canals, Dredging, and Dredged Material Placement (continued).

Technique	Decision Process	Factors To Consider
Spray Dredge	Suggested and used to avoid completely the creation of dredge banks Spray dredging places material over a large area of marsh surface at a depth that avoids destroying vegetation or altering hydrology	Normally dredge is deposited discontinuously and unevenly, enabling the avoidance of sensitive habitats or minimize spoil over small creeks More costly than more traditional use of the bucket dredge; most contractors along the coast of GOM have not invested in spray dredge technology
Canals and Channels		
Backfill	Suggested as a way to minimize impacts from canals and to restore impacted habitats Based on OCS permit information, this is the most common required mitigation in recent years In Texas and Louisiana, a typical backfilled pipeline canal results in 75% reduction in direct impacts to the marsh as compared to non-backfilled canals (Baumann and Turner, 1990)	Involves returning soil into the canal so that the elevation is restored as close as possible to pre-construction elevation May occur on site for canal restoration, as well as offsite as mitigation for other dredging operations Intended benefits of backfilling are reestablishment of marsh vegetation in the canal and on the re-graded spoil bank, and restoration of marsh soils on bottom of the canal
Wood Chipping	A new technique unique to forested wetlands Regulatory personnel believe the use of windrows should be avoided. Requirement for chipping on-site started approximately 1992/93	Prior to 1996, trees removed for ROW being pushed to the side created <i>windrows</i> with the potential to act as hydrologic barriers Success of wood chipping remains undetermined. Problems encountered: Equipment not adapted to the function of marshes Equipment is expensive Process is time-consuming
Erosion Stabilization	Many impacts are from pipeline canals and navigation channels Stabilization of banks is critical Lack of stabilization can result in slumping of canal sides and blockage of natural creeks/drainage streams	Erosion control measures are required through the use of Best Management Practices Requirement is usually erosion control./siltation fences
Revegetation	Often required by permits Extremely valuable to the acceleration of marsh recover over first growing season Most extensive data exist for the re-vegetation of dunes, but through the use of directional drilling, is not the concern as in past cases	Stabilizes shorelines, shore banks, and areas surrounding stream crossings where erosion is most likely to occur Helps to reduce sedimentation and erosion
Plugs/Dams	Structures have been used frequently in order to mitigate adverse hydrodynamic impacts and accelerated erosion (structures include dams, weirs, bulkheads, rip-rapshell/gravel mats, and biodegradable mats)	Reduces erosion and provides barriers to saltwater intrusion Plugs maintain elevated marsh water levels Prevent salt water intrusion into low-salinity marshes Reduces tidal exchange thereby reducing bank erosion
Erosion Control During Project	Construction of pipelines and navigation Channels are governed by the Best Management Practices and erosion control during the construction phase is a requirement	Natural features of each construction site should be identified for the necessary erosion control

Figure 21. Example of a table in portrait orientation (continued).

Table 3-11

Gulf of Mexico Essential Fish Habitat Assessment  
 (species under Gulf of Mexico Fishery Management Plans in proposed lease sale area)

Species	Presence in Destin Dome Unit	Bay and Estuary Relationships	Adult Prey Species
<b>Invertebrates</b>			
Brown Shrimp	Adult present year-round	Major nursery area	Omnivorous
White Shrimp	Occurs; only most northern part	Nursery area	Omnivorous
Pink Shrimp	Not present	Nursery area	Carnivorous
Stone Crab	Uncommon; only most northern part	Nursery area	Opportunistic carnivore
Spiny Lobster	Occurs	None noted	Mollusks and arthropods
<b>Fish in Taxonomic Order</b>			
Gag Grouper	Occurs	Seagrass beds, nursery nearshore	Primarily fish
Red Grouper	Adult present year-round	None noted	Primarily fish
Scamp Grouper	Occurs	None noted	Primarily fish
Tilefish	Rare; only in deepest waters	None noted	Primarily crustaceans
Cobia	Adult present during summer	Nursery nearshore	Primarily crustaceans and some fish
Lesser Amberjack	Occurs	None noted	Cephalopods
Greater Amberjack	Occurs	None noted	Variety fish, crustaceans, and cephalopods
Dolphin Fish	Adult present year-round	None noted	Pelagic fish
Lane Snapper	Occurs	Nursery nearshore	Fish, crustaceans, mollusks, algae
Gray Snapper	Adult present year-round	Nursery nearshore	Fish, shrimp, and crabs
Red Snapper	Adult present year-round	Nursery nearshore	Fish, shrimp
Red Drum	Uncommon; only most northern part	Nursery nearshore	Crustaceans
Yellowtail Snapper	Occurs	None noted	Benthic fish and crustaceans
King Mackerel	Adult present year-round; spawning	None noted	Mostly fish, anchovies, and herrings
Spanish Mackerel	Uncommon; northern part only	Nursery nearshore	Mostly fish, anchovies, and herrings
Gray Triggerfish	Occurs	None noted	Mostly bivalves and barnacles; also polychaetes and echinoderms

Figure 22. Example of a table in landscape orientation.

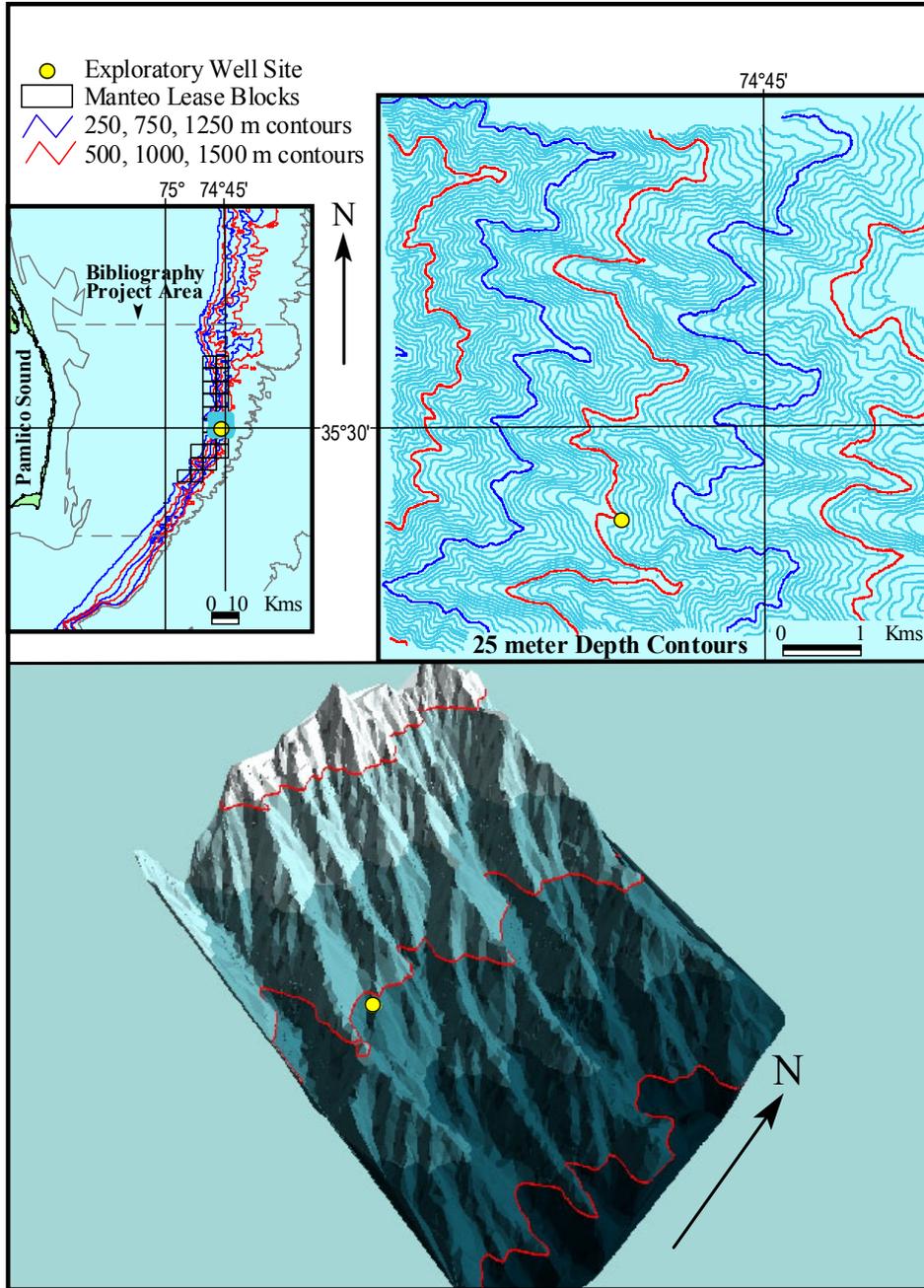


Figure 17. SeaBeam Bathymetry Data (see Ross, S., unpub. c).

Figure 23. Example of a figure using portrait orientation.

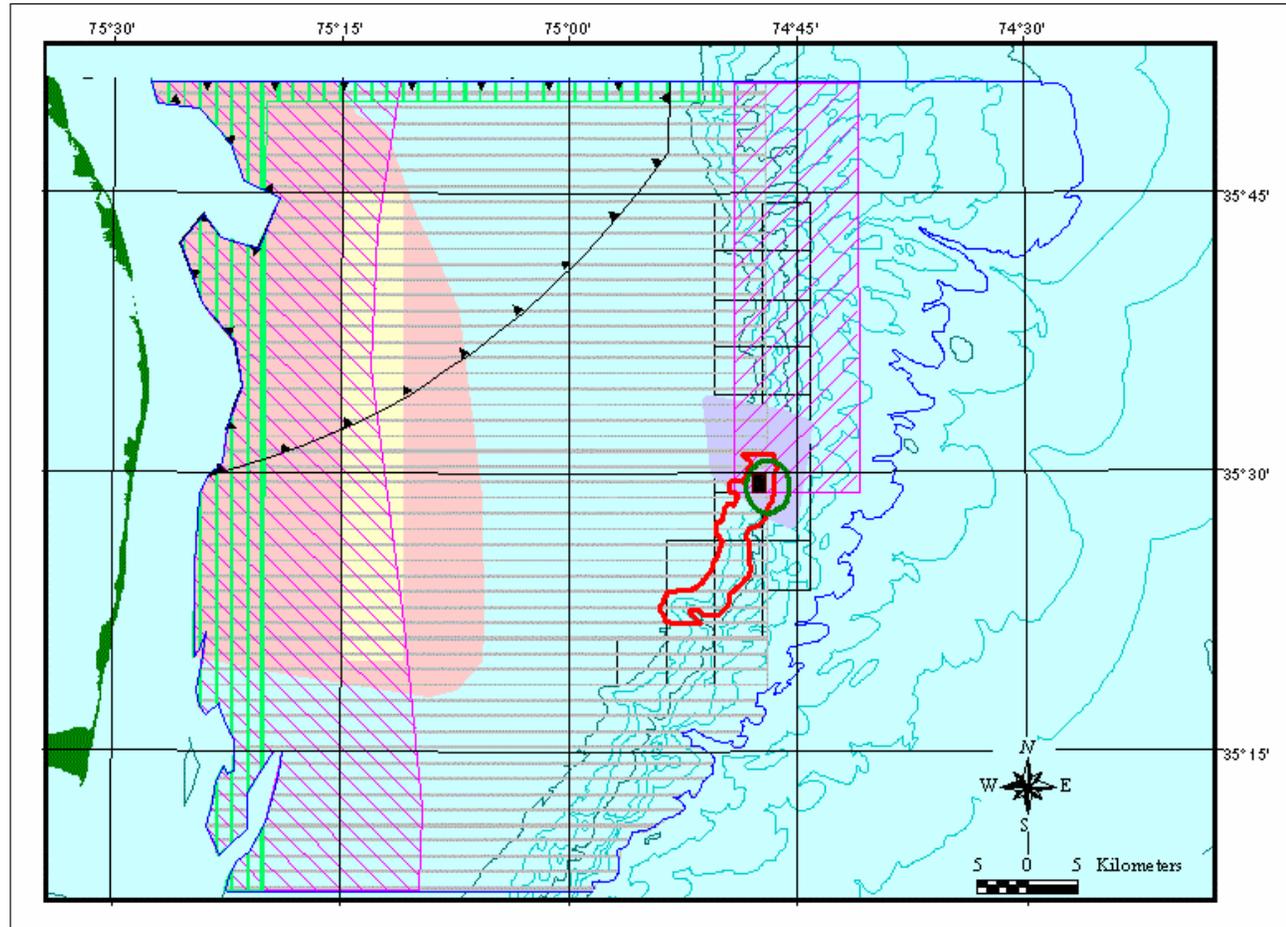


Figure 4. Fisheries Citations (Study Area).

Figure 24. Example of a figure using landscape orientation.

Table 1

## Summary of a Single-volume Report

	Chapter One	Other Chapters	Appendices
Name:	Executive Summary	Titles as appropriate Detailed discussions	Appendix A, etc. Data documentation
Objective:	Summarize findings, results, and significance		
Targeted Audience:	Well-informed laypersons Scientific community		Scientific community

Table 2

## Summary of a Multi-volume Report

	Volume I	Volume II	Volume III (Optional)
Name:	Executive Summary	Narrative Report; Technical Report	Appendices
Objective:	Summarize findings, results, and significance	Detailed discussions	Reduce bulk of Volume I and Volume II
Targeted Audience:	Knowledgeable laypersons Scientific audience	Scientific audience	

Table 3

## International System of Units—Base Units

Quantity	Unit	
	<i>Name</i>	<i>Symbol</i>
length	meter	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K
amount of substance	mole	mol
luminous intensity	candela	cd

Table 4

## International System of Units—Derived Units

Quantity	Unit		<i>Equivalent</i>
	<i>Special Name</i>	<i>Symbol</i>	
plane angle	radian	rad	
solid angle	steradian	sr	
speed, velocity			m/s
acceleration			m/s <sup>2</sup>
angular velocity			rad/s
angular acceleration			rad/s <sup>2</sup>
frequency	hertz	Hz	
force	newton	N	
pressure, stress	pascal	Pa	
work, energy, heat	joule	J	
impulse, momentum			N·s, kg·m/s
power	watt	W	
electric charge	coulomb	C	
electric potential	volt	V	
resistance	ohm	Ω	
conductance	siemens	S	
magnetic flux	weber	Wb	
inductance	henry	H	
capacitance	farad	F	
electric field strength			V/m, N/C
magnetic flux density	tesla	T	
electric displacement			C/m <sup>2</sup>
magnetic field strength			A/m
Celsius temperature	degree Celsius	°C	
luminous flux	lumen	lm	
illuminance	lux	lx	
radioactivity	becquerel	Bq	

Table 5

## International System of Units—Units in Use

Quantity	Unit	
	<i>Name</i>	<i>Symbol</i>
time	minute	min
	hour	h
	day	d
plane angle	degree	°
		'
		"
volume	liter	L
mass	metric ton	t
land area	hectare	ha



### 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.