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Reporting Policies and Procedures for the Division of Sport Fish

January 1992

Alaska Department of Fish and Game

Division of Sport Fish

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REPORTING POLICIES AND PROCEDURES FOR THE DIVISION OF SPORT FISH[1]

Alaska Department of Fish and Game
Division of Sport Fish
Anchorage, Alaska

January 1992

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The Special Publications series was established in 1991 for the publication of techniques and procedures manuals, informational pamphlets, special subject reports to decision-making bodies, symposia and workshop proceedings, application software documentation, in-house lectures, and other documents that do not fit in another publication series of the Division of Sport Fish. Special Publications are intended for fishery and other technical professionals and lay persons. Distribution is to state and local publication distribution centers, libraries and individuals and, on request, to other libraries, agencies, and individuals. This publication has undergone editorial and peer review.

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OEO
U.S. Department of the Interior
Washington, D.C. 20240

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FOREWORD

This manual represents the initial efforts to provide comprehensive written documentation on the reporting policies and procedures for the Division of Sport Fish. It addresses reporting policies, describes the division's report series, outlines roles and responsibilities of participants in the reporting process, and provides format and style guidelines. Its primary purpose is to clearly state the expectations of performance in reporting to ensure the continued high quality of the division's publications.

Using Edition 2 of *Reporting Policies and Procedures for the Division of Commercial Fisheries* as a foundation and with input from division staff, Mike Mills, Allen Howe, Gwyn Karcz, and Ardys Armstrong developed this manual. It will be periodically updated to keep the division current with the reporting trends in the fisheries profession and with advances in publication technologies.

Norval Netsch, Director
Division of Sport Fish

Jan 18 1992
Date

1. MISSION AND POLICIES

1.1 Mission

Reports published by the Alaska Department of Fish and Game, Division of Sport Fish, are to meet the standards set forth in this manual so that the following may be achieved:

- Timely dissemination of information significant to furthering fishery resource management and scientific knowledge.
- Production and archival of information that is technically and scientifically sound.
- Enhancement of the status and credibility of the division among other state and federal agencies, as well as the credibility of staff among their professional peers.

1.2 Policies

To accomplish the above mission the following specific policies are recognized by the division:

- Data collected at state expense will be synthesized and reported within a reasonable period following collection in one of the divisional statewide report series, in a publication outside the department, or will be included in an unpublished divisional report.
- Each project in which a parameter is estimated or a hypothesis is tested will have a written report covering every year that the project is budgeted.
- Prior to submittal for publication outside the department, the Director or his designee will approve manuscripts prepared using state resources.
- Authors will comply with the department's ethics guidelines in preparation of documents for publication outside the department.
- Peer review is required for all manuscripts entering a divisional statewide report series.
- Electronic files of all reports will be maintained.
- Electronic files of all final edited versions of originally recorded data used in preparing a report will be maintained.
- Guidelines in this manual will be followed.

2. REPORT SERIES

All reports prepared by Division of Sport Fish staff or by other division staff for publication in one of the Division of Sport Fish report series shall be published in the most appropriate of five series: Fishery Data Series (FDS), Fishery Manuscripts (FM), Fishery Management Reports (FMR), Professional Papers (PP), or Special Publications (SP).

2.1 Fishery Data Series (FDS)

Fishery Data Series (FDS) reports are technically oriented and present results for a single project or a group of closely related projects. The reports should be timely, and typically present the results of a single year's work. Electronic files containing the final edited version of all originally recorded data used to generate statistics presented in the report should be submitted with the final report to the Editor for archival.

In general, FDS reports are intended for fishery and other technically oriented professionals. Distribution will be to the State and Local Publications Distribution Center, Alaska State Library; interested departmental staff, and on request, to other libraries, agencies, and individuals.

FDS reports are to be prepared following the instructions and guidelines contained in all sections of this manual and require peer review.

2.2 Fishery Manuscripts (FM)

Fishery Manuscripts (FM) are technically oriented and present results for a single project or a group of related projects. The FM report typically presents the results of several years' work undertaken on a project to address common objectives, provides an overview of work undertaken through multiple projects to address a specific research or management goal, or documents new and/or highly technical methods. Electronic files containing the final edited version of all originally recorded data used to generate statistics presented in the report should be submitted with the final report to the Editor for archival.

In general, FM reports are intended for fishery and other technically oriented professionals. Distribution will be to the State and Local Publications Distribution Center, Alaska State Library; interested departmental staff, and on request, to other libraries, agencies, and individuals.

FM reports are to be prepared following the instructions and guidelines contained in all sections of this manual and require peer review.

2.3 Fishery Management Reports (FMR)

The final requirements for management reports have yet to be determined. Described here are the past requirements for this series, which should continue to be followed.

Fishery Management Reports (FMR) should provide an overview of management activities or management plans in a stated geographic area during a stated

time period. FMRs may present pertinent research results (e.g., harvest estimates, fish abundance estimates, catch statistics), but will not provide detailed information on how these results were produced. Any new results should be well documented or reported elsewhere and cited in the FMR. The audience for FMRs will include professionals as well as lay persons, so they should be simply written with a minimum of technical terms.

Distribution will be to the State and Local Publications Distribution Center, Alaska State Library; interested departmental staff, and on request, to other libraries, agencies, and individuals.

FMRs should adhere to the same hardware and software standards as provided for the FDS and FM reports. Where applicable FMRs should also be prepared following the guidelines for FDS and FM reports. FMRs require peer review.

2.4 Professional Papers (PP)

Professional Papers include all manuscripts that deal with issues of concern to the department and are prepared by division personnel for publication in a professional journal. The primary audience will be fishery professionals, but some papers may be of interest to other disciplines. Distribution will vary with the publication.

The author(s) should prepare professional papers following the guidelines of the intended publication. Prior to submission of the manuscript to the professional society, journal, or symposium editors, a copy should be submitted through the Regional Research Supervisor or Regional Management Supervisor to the Division of Sport Fish Editor with a copy of any guidelines for authors provided by the professional journal or symposium editors. The Editor will arrange for in-house peer review, if requested, and will submit the manuscript to the Director for approval.

Manuscripts or other documents that deal with issues of concern to the department and are prepared for publication outside the department should follow current departmental policy. The following policy statement taken from Standard Operating Procedure II-040, page 040-7, was in effect at the time this edition was prepared:

> "Employees are encouraged to prepare job-related, general interest, and technical papers on official and personal time. Employees may not, however, accept any compensation for an article, paper, or photograph produced on state time or with state equipment."
>
> "To maintain a high professional standard in published reports and papers, each division shall provide an in-house review of all such materials. The formal referee-review process required of scientific journals and symposia may substitute for a divisional review."
>
> "Policy oriented publications and nontechnical articles not subject to formal referee-review procedures must be approved prior to publication or release at the Regional Supervisor level."

2.5 Special Publications (SP)

Special Publications provide a mechanism for publication and distribution of reports that do not fit in other divisional series. Examples of such reports include fishery techniques manuals, informational pamphlets, special subject reports to the Board of Fisheries or other decision-making bodies, symposia and workshop proceedings, application software documentation, in-house course materials, and this manual. Publication of these types of documents in this series is not mandatory.

The audience for and distribution of Special Publications will vary widely depending on the specific report topic. Reports may be of interest to professionals, publication specialists, and lay persons. Distribution will be to the State and Local Publications Distribution Center, Alaska State Library; interested departmental staff; and, on request, to other libraries, agencies, and individuals.

Special Publications will undergo peer review and review by the division's Editor.

3. ROLES AND RESPONSIBILITIES

3.1 Senior or Primary Author

Senior authorship should be resolved at the onset of project activity. The primary or senior author should be that person primarily responsible for conceiving, conceptualizing, and planning the project. The senior author may not collect the data, but the data are usually collected under the provisions he or she conceptualizes or implements. The senior author is also primarily responsible for interpretation of results. The senior author may not write the manuscript, but should direct the writing and play a key role in revisions. Selection of the senior author serves to identify the contact for interested readers.

3.2 Coauthors

Coauthors should be directly and significantly involved in writing the report and in planning, conducting and implementing the data gathering, or in the data processing or analysis. Other coworkers should be identified in the acknowledgments section. The primary author must have approval of all coauthors before including their names on the title page.

3.3 Biometricians

Biometricians are to review reports from projects to which they are assigned before the report is sent to the Editor. Exceptions may be granted in special and unusual circumstances.

3.4 Publication Technicians

Publication Technicians are primarily responsible for preparing draft and final reports following divisional guidelines for each report series.

Publication Technicians make final preparation of reports (including tables and figures), review reports to ensure compliance with format standards, edit verbal and graphical content to correct grammatical errors, contact authors to obtain required information for completeness (such as for bibliographies), print and prepare final reports, and copy report files onto a microcomputer diskette for submission to the Editor.

3.5 Regional Research Supervisors

The Regional Research Supervisors will coordinate the writing and revision of draft and final Fishery Data Series and Fishery Manuscript reports by authors and the Regional Publication Technician to ensure deadlines established by the Editor for report publication are met. Regional Research Supervisors may also coordinate the writing and revision of manuscripts submitted to other divisional report series at the discretion of the Regional Supervisor.

The Regional Research Supervisor will ensure that the peer reviewer's(s') and technical editor's(s') significant comments are addressed per the guidelines established in this document.

3.6 Regional Management Supervisors

The Regional Management Supervisors will coordinate the writing and revision of draft and final Fishery Management Reports by authors and the Regional Publication Technician to ensure deadlines established by the Editor for report publication are met. Regional Management Supervisors may also coordinate the writing and revision of manuscripts submitted to other divisional report series at the discretion of the Regional Supervisor.

The Regional Management Supervisor will ensure that the peer reviewer's(s') and technical editor's(s') significant comments are addressed per the guidelines established in this document.

3.7 Reviewers

The Editor may send a report to anyone in the division for peer or technical review.

Reviewers should review a report primarily for content, and secondarily for style, format, and grammar.

3.8 Editor

The Editor is responsible for determining when manuscripts are ready for peer review and publication, for coordinating and refereeing peer review, and for publication and distribution of final reports. Discretionary questions of style and usage or issues of publication unresolvable by this manual will be decided by the Editor. The Editor is the Research and Technical Services Supervisor or his designee.

4. SCHEDULE

The following schedule outlines targets for completion of federal aid reports in time to meet contractual reporting obligations.

- Regional Research Supervisors or Regional Management Supervisors will provide the Editor with two copies of each draft report no later than the last week of July.

- Reviewers will return all reports to the Editor with their comments following the schedule established by the Editor. The target for completion of the peer review process is no later than the third week of August.

- The Editor will return all reviewer's(s') comments to the Regional Research Supervisors or Regional Management Supervisors no later than the last week of August.

- Each Regional Research Supervisor or Regional Management Supervisor will provide all final reports to the Editor, as completed, but no later than the second week of September. The Editor should be immediately informed of each report that will not meet this schedule.

Non-federal-aid reports will be scheduled by mutual agreement of the Regional Research Supervisor or Regional Management Supervisor and the Editor. Reports will normally be published two weeks after receipt of the final draft by the Editor.

5. GENERAL GUIDELINES

Development and revision of the division's reporting policies and procedures is a dynamic process. Changes to any section of this manual will be made as deemed necessary. The manual will be revised and republished periodically.

Manuscripts submitted for publication as a Division of Sport Fish Fishery Data Series report, Fishery Manuscript, Fishery Management Report, or Special Publication are to be prepared following instructions and guidelines contained in this manual. Manuscripts submitted for publication outside the department are to be prepared following the guidelines in section 2.4.

Draft reports are to be submitted to the Editor through the Regional Research Supervisor or Regional Management Supervisor. The Regional Research Supervisor or Regional Management Supervisor will submit a memorandum with the draft report that outlines who has reviewed the report and, if it is a federal aid report, the federal aid project number, job number(s), and objective(s) being addressed. A specific peer reviewer may be requested. The Editor will assign the report to a reviewer with a deadline for completion of the review.

The Editor will review the peer reviewer's(s') comments and prepare a memorandum to the Regional Research Supervisor or Regional Management Supervisor. The memorandum will identify whether there are major technical problems and will be accompanied by the reviewer's(s') comments.

The Regional Research Supervisor or Regional Management Supervisor, author, and Publication Technician will follow the guidelines in this manual for addressing the reviewer's(s') comments and preparing a final draft report, and the Regional Research Supervisor or Regional Management Supervisor will route a hard copy and electronic copy of the report and an electronic copy of all final edited versions of originally recorded data used in preparation of the report (see sections 9.2 and 9.3) to the Editor. The reviewer's(s') marked-up copy(ies) of the draft report should also be returned, if it accompanied the reviewer's(s') comments.

The Editor will review the final draft report to determine if it meets division standards and to determine if the reviewer's(s') comments have been addressed in an acceptable manner.

The Editor will oversee publication and distribution of acceptable final reports. Each Regional Research Supervisor or Regional Management Supervisor will provide the Editor the number of copies of each report to prepare for the regional office, primary authors, secondary authors, and the appropriate area office.

6. HARDWARE, SOFTWARE, AND PRINTING

Hewlett Packard laserjet printers (series II, IID, III, IIID or compatible series) are the only acceptable printers. Font cartridges (or soft fonts) manufactured by Hewlett Packard are recommended.

Microsoft Word versions 4.0, 5.0, or 5.5; and WordPerfect versions 5.0 or 5.1 are the only acceptable word processing packages. Report tables and figures may be printed using other software packages.

Prestige 10 point is the standard portrait and landscape font with Math7 or Math8 10 point being used for special mathematical characters. The 7 point size of the above fonts may be used for compressed print. The PrestigeLegal font should not be used, unless a character available only in the legal character set is desired.

Use of style sheets or nonstandard printer drivers is acceptable. If used, an electronic copy of the style sheet and nonstandard printer driver must be included with the electronic copy of the final report submitted to the Editor.

7. HEADINGS, PAGINATION, AND MARGINS

7.1 Margins

In the text leave a 1-inch margin all the way around (top and bottom, and left and right). Table and figure margins should never be less than 1 inch on each side. Tables and figures may be centered on a page, if it results in a more visually pleasing layout. Photo-reduction of tables to conform to margin requirements should be avoided, if possible.

7.2 Page Numbering

Authors or Publication Technicians will assemble the final tables and figures within the report, number all pages, and add appropriate page numbers to the table of contents and lists of figures, tables, and appendices.

Use lower-case Roman numerals beginning with the first page of the table of contents and ending one page before the abstract. The first Roman numeral to appear will be "-i-" on the table of contents. The abstract will be numbered "-1-" and all following pages will be numbered sequentially, including appendices. Count and number blank pages; number the cover page of each appendix. When viewed in portrait, page numbers should appear in the horizontal center of the bottom margin 0.5-inch from the bottom paper edge.

7.3 Headings

Appendix I provides example report sections with correct heading format and required spacing between the text and the headings.

Standards for character formatting for first-, second-, third-, and fourth-order headings are listed below. No provision is made for fifth-order headings, and the use of fourth-order headings is discouraged.

- First-order headings: Capitalize each letter in all words and center the heading on the page. First-order headings should be separated from preceding text by two blank lines and followed by one blank line.

- Second-order headings: Capitalize the first letter of each word, left justify, underline. Second-order headings should be preceded and followed by one blank line.

- Third-order headings: Capitalize the first letter of each word, left justify, follow by a colon. Third-order headings should be preceded and followed by one blank line.

- Fourth-order headings: Capitalize the first letter of each word, left justify and place at the start of the text paragraph (same line as the text), and set off from text by a period followed by two spaces.

Within any given heading order, if there are to be subordinate-order headings, there must be at least two of each subordinate-order. Up to two headings may occur together without text separating them.

8. FOOTNOTES

Text footnotes should be used sparingly. Use superscript Prestige 7 point Arabic numerals for text footnotes. Text footnotes are numbered sequentially throughout the main body of the report. Use lower-case Prestige 7 point alpha superscript identifiers for table and appendix footnotes. The table footnote sequence starts with [a] for each new table. Table titles may be footnoted, but a second sentence in the title is preferable in most cases. In appendices restart the footnote sequence for each appendix exhibit. Two correctly

formatted text footnotes are shown on this page.[1] Note that a two-inch-long solid line separates the footnote from text within the document.[2]

Additional details on format and placement of footnotes are included in Appendix H.

9. CHECKLIST OF REQUIREMENTS

9.1 First Drafts

First draft manuscripts submitted to the Editor should adhere to the following rules.

- Submit two letter-quality drafts of the report printed single-sided on a laserjet printer.

- Print all text except footnotes double-spaced on 8.5-inch by 11-inch paper. The literature cited, lists of tables, figures, appendices, the table of contents, table and appendix titles, and figure captions should be single-spaced.

- Include all sections in the proper order for the report series in which you wish to publish.

- Include all cited tables, figures, and appendices in the draft. Tables, figures, and appendices (in that order) may be placed behind the text of the report or prepared as described in section 9.2 for final reports.

- Either number pages as described for final reports or number all pages (pencil is acceptable) consecutively with Arabic numerals beginning with "1" for the title page and ending with the last page of the last appendix.

- For all reports include a cover memorandum that identifies:

  1) Whether or not an enclosed report is a federal aid report.

  2) The series in which you seek to publish.

  3) All persons who have already reviewed the report.

  For federal aid reports, also state the federal aid project and job number(s) and objective(s) being addressed by the report.

- Do not send original figures or electronic files with the first draft.

---

[1] This is a sample footnote showing placement and format. Notice that text footnotes use a superscript Prestige 7 point numeric identifier, but that footnote text is in Prestige 10 point.

[2] This is the second footnote. Note that the spacing between footnotes is set to 0.5 lines.

Manuscripts not conforming to the above requirements or incompatible with the conventions of this manual may be returned at the discretion of the Editor for redraft prior to peer review.

9.2 Final Drafts

Follow the standards below for final drafts submitted to the Editor. Refer to section 9.3 for instructions concerning submission of final data files.

- Submit with the final draft all original figures and an electronic file of the report prepared following guidelines in Appendix H. The diskette(s) will be maintained in Research and Technical Services.

- Submit one clean, single-sided original of the report to the Editor; print all final drafts on a laserjet printer.

- Print all text single-spaced on 8.5- by 11-inch paper. Print final reports single-sided.

- For federal aid reports type the correct project number and job number(s) on the title page.

- For federal aid reports include the correct OEO statement.

- Include the correct report series description.

- The single-sided reports will be duplicated to produce double-sided copies. To ensure correct page numbering, submit final drafts with all necessary blank pages included to conform with the right-facing page conventions (see Appendix H). Count and number blank pages.

- Insert a page break between the abstract and the introduction. Do not insert page breaks between other main report sections (introduction through literature cited) unless required to conform with page numbering conventions, right-facing page conventions, or to prevent a break between the heading and text.

- Address all reviewer's(s') questions or suggested additions and revisions identified as "significant" by the Editor by either:

  1) making the appropriate change in the text, or

  2) providing a brief written rebuttal in a cover memorandum to the Editor that explains why the comments were not appropriate.

- Insert tables and figures immediately following the text page on which the table or figure is first referenced and place appendices after the literature cited.

- Number pages following these guidelines: Lower-case Roman numeral numbering will begin with the first page of the table of contents and end one page before the abstract. Therefore the first Roman numeral to appear will be "-i-" on the table of contents. The abstract will be numbered "-1-" and all following pages will be numbered sequentially, including

appendices. When viewed in portrait page numbers should appear in the horizontal center of the bottom margin 0.5-inch from the bottom paper edge. Also, put page numbers in the table of contents, list of tables, list of figures, and list of appendices. Count and number blank pages; number the cover page of each appendix.

9.3 Data Files

Submit with the final drafts of Fishery Manuscripts and Fishery Data Series reports an electronic copy of the final edited version of all originally recorded data used in preparation of the report following the guidelines provided below. The data will be added to the central archives in Research and Technical Services. Appendix H further describes the format standards for electronic files.

Include a file called DATA.DOC (or .WPF for WordPerfect) that generally describes the contents of each data file used to produce the estimates in the report. An example of two file descriptions follows:

File name	Description
Q0030CA9.DTA	Buskin River creel survey angler count data, 1989.
Q0030BA9.DTA	Buskin River immigrant coho salmon length-at-age data, 1989.

Some authors have included the above data file descriptions in the final report as a Data Files Appendix. While that does not exempt them from this requirement, it should make compliance simple.

Do not combine data files for more than one report on the data diskette(s) submitted with a final report.

Do not combine data files and report files on the same diskette.

9.3.1 Mark-Sense Data Files:

Final electronic data files in one of the standard mark-sense formats may be submitted to the Editor with no further explanation of file format.

The data type name is always ".DTA" for mark-sense data files. If several batches of mark-sense data have been combined in one data file, change the seventh character in the primary filename (batch identifier) to an underscore prior to submitting the electronic files to the Editor.

If one or more of the option fields have been used, or if one of the defined fields has been used in a nonstandard way, submit to the Editor with the electronic files a completed Field Specifications Form that describes the usage of these fields.

9.3.2 Other Data Files:

Final data files that are not in mark-sense format require that additional documentation be submitted to the Editor with the electronic data files. Include the following in a file named MYDATA.DOC (or .WPF for WordPerfect):

1) The year, project name, contact person, geographic description of the data set(s), and species involved.

2) The primary file name should be assigned following the file naming conventions used for creating mark-sense data set primary file names. If several batches of data have been combined in one data file, follow the instruction in section 9.3.1 for altering the primary file name. The data type name should be ".DBF" for Dbase format files, ".DAT" for ASCII data, or ".WK#" for Lotus spreadsheets (where # is dependent on the release of Lotus used).

3) For each field in each data set, describe the variable name, position in the record, variable type, and a brief explanation of the data represented by this variable.

10. PRELIMINARY PAGES

Examples of the title page, OEO and report description page, table of contents, list of tables, list of figures, and list of appendices are presented in the sample report sections in Appendix I.

10.1 Title Page

The report series and title should be in capitals. One blank line separates the report series from the title. Center the report series and title within a 4-inch wide by 2-inch high area the top and left edges of which are 2.375 inches from the top and binding edges of the page. The remaining items on the title page should be in mixed case. Separate "by" from the author's or last coauthor's name by one blank line. Single space the list of authors.

- At the bottom of the title page always use Anchorage as the location of publication (see Appendix I). Do not include a zip code.

- Do not start the title with a year in numeric form (i.e., 1987 Catch and...). Avoid use of scientific names of common species in the title unless a common name does not exist for a species.

- Include a footnote pertaining to the funding source(s) in the title (see Appendix I for the appropriate footnote wording). Designate the footnote with a superscript Prestige 7 point numeral [1]. For federal aid reports check to ensure the project and job numbers are correct.

- Research and Technical Services staff will alter the date to the date published prior to publication and add the appropriate report number for the series.

10.2 O.E.O. Statement and Report Description

The following are the correct O.E.O. statement and descriptions for FDS, FM, FMR, and SP reports to include on the second page of the final report. Include the O.E.O. statement in reports of federally funded projects. For all reports include only the description for the series in which the report will

published. During publication this page will be reproduced on the reverse side of the title page. Placement on the page should provide for 1-inch margins on all sides. Refer to Appendix I for a correctly formatted example.

OEO Statement:

The Alaska Department of Fish and Game receives federal funding. All of its public programs and activities are operated free from discrimination on the basis of race, religion, sex, color, national origin, age, or handicap. Any person who believes he or she has been discriminated against by this agency should write to:

OEO
U.S. Department of the Interior
Washington, D.C. 20240

Fishery Data Series:

The Fishery Data Series was established in 1987 for the publication of technically oriented results for a single project or group of closely related projects. Fishery Data Series reports are intended for fishery and other technical professionals. Distribution is to state and local publication distribution centers, libraries and individuals and, on request, to other libraries, agencies, and individuals. This publication has undergone editorial and peer review.

Fishery Manuscripts:

The Fishery Manuscripts series was established in 1987 for the publication of technically oriented results of several years' work undertaken on a project to address common objectives, provide an overview of work undertaken through multiple projects to address specific research or management goal(s), or new and/or highly technical methods. Fishery Manuscripts are intended for fishery and other technical professionals. Distribution is to state and local publication distribution centers, libraries and individuals and, on request, to other libraries, agencies, and individuals. This publication has undergone editorial and peer review.

Fishery Management Reports:

The Fishery Management Reports series was established in 1989 for the publication of an overview of Division of Sport Fish management activities or management goals in a specific geographic area. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Distribution is to state and local publication distribution centers, libraries and individuals and, on request, to other libraries, agencies, and individuals. This publication has undergone editorial and peer review.

Special Publications:

The Special Publications series was established in 1991 for the publication of techniques and procedures manuals, informational pamphlets, symposia and workshop proceedings, application software documentation, in-house lectures, special subject reports to decision-making bodies, and other documents that do

not fit in another publication series of the Division of Sport Fish. Special Publications are intended for fishery and other technical professionals and lay persons. Distribution is to state and local publication distribution centers, libraries and individuals and, on request, to other libraries, agencies, and individuals. This publication has undergone editorial and peer review.

10.3 Table of Contents and List of Tables, Figures, and Appendices

- Closely follow the format examples shown in Appendix I.
- Format continuation pages for the table of contents and lists as in the Table of Contents for this manual. Note that the first letter of "Continued" is capitalized.
- Precede each appendix by a single page on which the appendix heading will be centered horizontally in the upper third of the page. The heading may simply be "Appendix A", or it may include additional description of the contents of the appendix.
- Do not include the word "table" or "figure" when referencing an appendix; i.e., do not use "Appendix Table A3." Use instead "Appendix A3."
- Number pages for all appendices sequentially from the body of the report.

10.4 Abstract

- As a general rule, limit abstract length to one page.
- Write in past tense.
- Symbols found on a standard keyboard, abbreviations presented in the standard references listed in section 22 of these guidelines, P used as an abbreviation for probability, SE used as an abbreviation for standard error, and the symbols $\leq$ (less than or equal to), and $\geq$ (greater than or equal to) may be used in the abstract without definition. Other symbols or abbreviations should not be used in the abstract.
- Provide a brief background statement, if pertinent.
- Highlight the significant findings. Avoid stating only the types of results presented.
- Separate the abstract from the keywords with one blank line (see Appendix I).
- If a major group of species are addressed in your work, list only the generic or group name rather than all the species individually.

11. INTRODUCTION SECTION

The introduction may include a mix of tenses, as appropriate, and should serve the following:

- Provide the reader with a clear understanding of the reason for the study, its objectives, the purpose or problem addressed by the work and how results would be useful to the division.

- For federal aid reports, include a statement of contract objectives addressed.

- Orient the reader with background information that assists in understanding the context and circumstances surrounding the work.

- Include literature in the introduction if it is necessary to demonstrate the author's(s') knowledge of related findings or to orient the reader. In some cases, it may be more appropriate and acceptable to examine the literature partially or entirely within the discussion section.

12. METHODS SECTION

The methods section should clearly and thoroughly explain what the investigator did to achieve the results. Data collection and data analysis methods are required, but data reduction methods are optional. Methods should not be presented in appendices.

The following guidelines may be helpful in preparing the methods section:

- Write in past tense.

- Although previously published methods or procedures may be cited, provide the reader with enough summary information to preclude their having to go to that source to understand the study.

- Equation subscripts should be unique identifiers. Do not use "i" to designate "fish" in one formula and to designate "set" in another formula.

- Explain the significance of measurements (e.g., length was measured to the nearest 1 mm).

- Write for a reader unfamiliar with the project.

- Be precise, but thorough.

13. RESULTS SECTION

The combination of text, tables, figures, and appendices present the results achieved. Generally, tables should be used to document numeric values, while figures may be useful in depicting general trends or relationships in the data. The text is used to lead the reader through the results, to document

information that does not lend itself to tables and figures, and to highlight the major findings. The following additional guidelines may prove helpful:

- Write in past tense.

- Avoid the presentation of data that are not directly applicable to the purpose and objectives of your investigations, but do include pertinent negative results.

- Some text description of tables and figures is required so that the reader understands the major findings presented in the tables or figures. Use the tables to present most numbers and the text to describe inferences and relationships. When numbers must be used in the text that are presented in the tables, do not round the table value in the text, but have them match exactly.

- Be specific and precise. Avoid terms and phrases that can be loosely interpreted; e.g., the most recent 10-year average (use the 1975 to 1984 mean).

- Explain your findings thoroughly; do not force the reader to use tables and figures to understand and interpret the results.

- Discussion may sometimes be included in a results and discussion section, especially when the discussion is very brief.

14. DISCUSSION SECTION

A good discussion avoids restatement of results and previously discussed literature. Instead it interprets findings; relates the findings to previous studies or other ongoing investigations; and explains how the findings should be applied, to what extent objectives were obtained, and how the work should influence further investigations.

This section is required for FM reports. PP reports should follow the guidelines for the journal in which the author wishes to publish. Brief discussions may be appropriately combined in a results and discussion section.

15. CONCLUSIONS AND RECOMMENDATIONS SECTIONS

The conclusions section is optional for all report series. Complicated reports with numerous findings may need a conclusions section. If used, the individual conclusions should be succinctly stated without discussion. Individual conclusions are usually numbered if there are more than one. Conclusions need not be limited to the current investigation but may represent a synthesis of work with other cited publications.

Sometimes a list of recommendations is broken into a separate section from the discussion, especially if they are numerous, complicated, or deserve special emphasis. This section can also be combined with conclusions.

16. LITERATURE CITED SECTION

All references mentioned in the text, tables, figures, and appendices must be listed in the literature cited section. The example literature cited section in Appendix A was assembled to cover most types of literature encountered in fisheries work. A few of the more specialized rules are mentioned below.

- Include the state or appropriate country at the end of a citation address only when needed to locate the city.

- Use agency acronyms and abbreviations in place of authorless reports, but include the full name beside it in parentheses. "Anonymous," while sometimes used, is less informative than the former and will be acceptable only when an agency cannot be identified.

- Use "*In prep*" (italicized) in place of a date if the cited document is approved for publication yet is still in the preparation and editorial review process.

- Use "*In press*" (italicized) in place of a date if the cited document is in final form, has been accepted for publication, and is in the printing process.

- If the cited document is not destined for publication use "*Unpublished*" (italicized) in place of a date, not "*In prep*" or "*In press*." Official ADF&G memoranda or other documents that have been published as departmental reports may be cited. Other correspondence should be included parenthetically as personal communications in the text. Do not include personal communications in the literature cited.

- Remember that proceedings may take two forms: periodical publications, or single meetings and symposiums. Each has a different citation format as shown in Appendix A (see group 1 versus 3).

- Do not list inclusive pages for books (except chapters by separate authors - see first example in group 3 of Appendix A), dissertations and theses, or government reports.

- When the literature cited contains more than one work by the same author(s), replace the author's(s') name(s) with six underline characters followed by a period (e.g., _____.) in all entries after the first. List multiple works by the same author(s) chronologically by year of publication.

- When there is no clearly identifiable author, but only an editor, cite the editor's(s') name(s) in place of the author followed by "editor" (e.g., Jones, D. V., editor. 1981...).

- For undated documents, use "*Undated*" (italicized) in place of the date.

17. LITERATURE CITATIONS IN TEXT

All literature listed in the literature cited section must be mentioned at least once in the text using one of the following options and examples. Rules concerning when to use several of the approaches are discussed in section 16.

- "...According to NMFS (1979)..." In a text citation use agency abbreviation or acronym without first introducing the full agency name; you will do that in the literature cited section.

- "...Jones and Bones (1984) reported higher..." Use this approach for citing documents with two or fewer coauthors.

- "...indicating a dynamic interrelationship (White 1969, 1970, 1975; Bones et al. 1973, 1975; Jones 1986)." Use et al. when there are more than *two* coauthors and cite the oldest source first within several or more citation groups.

- "...Smith (*In prep*) concluded..." Use *In prep* to cite reports or papers that have been accepted for publication, but not finalized.

- "...Johnson (*In press*) stated..." Use *In press* for reports or papers that are approved for publication, in final form, and in the printing process.

- "...Smith (*Unpublished*) described an approach..." Use *Unpublished* for reports or papers that are not destined for publication.

- "...Jessen (1978, equation 5.8, page 128) presents an approximate formula for the variance of a ratio of random variates..." If the reference is to a very specific section of a lengthy book or other document, note the pertinent page or pages.

Personal communications should be included parenthetically only within the text (not included within the literature cited section), as shown in the following example:

- "...demonstrated no support for this hypothesis (R. W. Smith, Alaska Department of Fish and Game, Anchorage, personal communication)." Personal communications should be used for information gained through conversation or through correspondence such as letters or memorandums.

18. TABLES, FIGURES, AND APPENDICES

Tables, figures, and appendices in the first draft report should be in final format. The Editor may grant exceptions if this guideline would result in significant delays in submission of the draft report for technical review. The content of the first-draft tables, figures, and appendices and their titles or captions must always be in final form. Precise formatting will be required in the final draft.

Cite or reference all tables, figures, and appendices at least once in the text. In the draft report tables and figures may be grouped together at the end of the text or inserted after the text page on which the figure or table

is first referenced. In the final draft tables and figures must be inserted within or after the text page on which the table or figure is first referenced.

18.1 Tables

Appendix I presents example table formats. Follow the table title, capitalization, and spacing format shown in the examples and described in Appendix H. In addition, note the following:

- Use table footnotes to identify source(s) for the information contained in a table. Source footnotes should precede any other table footnotes. Include all table citations in the literature cited.

- Justify table titles and footnotes. Table titles and footnotes should not extend beyond the left or right edges of the table.

- For continued tables the complete table title should appear on the first page only. The continued pages use the following type of title: "Table N. (Page X of Y).", where N is the table number, X is the continuation page number, and Y is the total number of pages for the continued table.

- Table titles and footnote text should be Prestige 10 point, even if the body of the table is in a different point size.

- The "-continued-" on continued tables should always be Prestige 10 point. Separate "-continued-" from the table by one blank line. Do not capitalize "-continued-".

- Symbols found on a standard keyboard, abbreviations presented in the standard references listed in section 22 of these guidelines, P used as an abbreviation for probability, SE used as an abbreviation for standard error, and the symbols $\leq$ (less than or equal to) and $\geq$ (greater than or equal to) may be used in tables without definition. Identify all nonstandard symbols and abbreviations used in tables via footnotes or in titles. More than one sentence in the title is acceptable to accomplish this.

- Do not put units of measurement in the title if they can be included with column or line headings.

- Present only significant digits.

- Use superscript 7 point Prestige lower-case alpha characters to identify table footnotes (^{a} through ^{z}). Start with ^{a} for each new table. Footnotes for multiple page tables should be placed on the last page of the table. Leave one blank line between the table and the first footnote.

- As a general rule, use only single, solid, horizontal dividing lines in tables; do not use vertical lines, boxes, or shading.

- In special or unusual circumstances (e.g., information cannot be presented in an understandable manner in a table without vertical lines, boxes, and shading; the software used to print tables does not allow the user to

prevent the incorporation of vertical lines, boxes, and shading), the Editor will allow exceptions to the general rule concerning vertical lines, boxes, and shading in tables.

- If the value for the cell is zero use "0." If there are no data for a cell, leave it blank.

18.2 Figures

- The source(s) of information presented in figures should be identified. Use "From...", if the figure was taken unchanged from the source; "Redrawn...", if the figure was modified from that presented in the sources; or "Data from...", if data in the figure were taken from the source. Include in the literature cited complete citations for all sources noted in figure captions or text.

- Justify figure captions, within margin requirements, and start on the left margin of the figure and extend to the right edge of the figure. More than one sentence in the caption is acceptable. Continued figures should follow the same caption format and page layout as used for continued tables (see Appendix H).

- Make figures clean and with high resolution. Figures output on a Hewlett Packard laserjet must be at 300 dots per inch.

- Symbols found on a standard keyboard, abbreviations presented in the standard references listed in section 22 of these guidelines, P used as an abbreviation for probability, SE used as an abbreviation for standard error, and the symbols $\leq$ (less than or equal to) and $\geq$ (greater than or equal to) may be used in figures without definition. Identify in legends or captions the axes, the elements of the data and any nonstandard abbreviations so that the figure is easily interpreted.

- Site maps should include a map inset to show location relative to the State of Alaska, a symbol indicating north, and a metric scale. An English unit scale is optional.

18.3 Appendices

Data or information contained in appendices should not be central to the discussion or analysis of findings.

- Appendices follow the same rules as those for tables and figures, but are identified in the title as an appendix rather than either of the former (see Appendix I).

- The first appendix should be titled "Appendix A." Do not refer to an appendix exhibit as "Appendix Table" or "Appendix Figure"; instead use "Appendix A1."

19. SECTIONS REQUIRED

The required and optional section headings and order for FDS and FM reports are:

Title page
Report series description and OEO statement
Table of Contents
List of Tables (if any tables are included)
List of Figures (if any figures are included)
List of Appendices (if there are any appendices)
Abstract
Introduction
Methods
Results
Discussion (required for FM reports, may be combined with Results)
Conclusions (optional)
Recommendations (optional, may be combined with Conclusions)
Acknowledgment (optional)
Literature Cited (if any references are cited)
Data Files Appendix (optional).

The required (and some optional) sections headings and order for FMR and SP reports are:

Title page
Report series description and OEO statement
Table of Contents
List of Tables (if any tables are included)
List of Figures (if any figures are included)
Acknowledgment (optional)
Literature Cited (if any references are cited).

PP report sections should follow the guidelines provided for the journals in which the author wishes to publish.

20. CLERICAL PREPARATION - STANDARDS AND CONVENTIONS

20.1 Nomenclature

- Use common species names throughout, but include scientific names after the first common name usage in both the text and the abstract. The scientific name should not be enclosed in parentheses, but should be italicized (e.g., "...sockeye salmon *Oncorhynchus nerka* were sampled..."). Following a genus do not use "sp." or "spp." (plural) unless the species name is unknown; include the species nomenclature instead, or only the generic name if referring to the entire genera or several or more unspecified species (e.g., "three species of *Oncorhynchus*...").

- Use "salmon" after the common name when used as a noun (e.g., coho salmon were caught), but you may drop "salmon" when used as an adjective (e.g.,

coho catches), except in the title. This applies to other finfish and shellfish as well where it is natural to use the shortened form.

20.2 Abbreviations

- The abbreviation for the Alaska Department of Fish and Game is ADF&G.

- For your reference a list of standard abbreviations and symbols is provided as Appendix B. It is not necessary to define on first usage symbols found on a standard keyboard, abbreviations presented in the standard references listed in section 22 of these guidelines, P used as an abbreviation for probability, SE used as an abbreviation for standard error, and the symbols ≤ (less than or equal to) and ≥ (greater than or equal to). Otherwise define each abbreviation or symbol on first usage in the report. Abbreviations may be used for tables or figures following the above guidelines.

- In the abstract, symbols found on a standard keyboard, abbreviations presented in the standard references listed in section 22 of these guidelines, P used as an abbreviation for probability, SE used as an abbreviation for standard error, and the symbols ≤ (less than or equal to) and ≥ (greater than or equal to) may be used without definition. Other symbols or abbreviations should not be used in the abstract.

- Agency abbreviations and acronyms may be used in the text but must be defined upon the first usage. However, use the abbreviation and acronym without first defining it if citing literature in the text.

20.3 Italics

- Italicize only: scientific names, text mention of books or other publications; variables and lettered constants or statistical expressions; "*in*," "*In press*," "*In prep*," "*Unpublished*," "*Undated*;" and wherever occasional emphasis is appropriate.

20.4 Dates, Time, and Units of Measurement

- Dates: use the European (25 June 1983) or non-European (June 25, 1983), but use only one form consistently throughout your report.

- Clock: use the 24-hour or military clock (e.g., 0530 to 1730 hours, not 5:30 am to 5:30 pm). The word "hours" should not be abbreviated when using the 24-hour clock.

- Measurements: metric units should be used throughout the report. Metric units may be followed by English equivalents in parentheses.

20.5 Numbers and Formulas

- Include formulas used, except for those that are commonly encountered and are not ambiguous (e.g., chi-square, Student's t, standard deviation and variance for simple random sampling). Number formulas sequentially by placing a number in parentheses to the right of the formula and aligned with the right margin.

- Report only significant digits.

- The basic rule is to spell out all numbers used to start a sentence and numbers less than ten not enumerating a standard unit of measurement (e.g., 9 ft but nine fish; 5%). Otherwise, do not spell out (e.g., 12 fish).

- In general spell out all ordinal numbers that can be expressed in one or two words (e.g., twenty-first century, but 101st birthday). In dates use ordinal words when the day precedes the month (e.g., third of June), but cardinal figures when the day follows the month (e.g., June 3).

- In both the text and tables and figures use commas to subdivide whole numbers greater than three digits. Try to avoid using text strings of individual numbers that are separated by commas or semicolons as it can create confusion.

- Place a zero (0) in front of all decimals less than one (1.0) used in text or tables and figures (e.g., 0.5).

- Consult the standard references listed in section 22 for number rules applicable to other situations.

20.6 Age Reporting Standards

- Report salmon ages in European notation (e.g., an age-1.3 sockeye salmon). The first digit is the freshwater age not including the year spent in the gravel; the second digit is the ocean age.

- Report smolt ages in Roman numerals or with the European system (e.g., age I sockeye salmon smolts or age-1. sockeye salmon smolts), but use only one form in a given report.

- Follow the methods presented in Narvar and Withler (1977) for steelhead age reporting[3].

- Use Arabic numerals for other finfish and shellfish age reporting (e.g., age-4 herring).

- See Appendix F for more detail on reporting of fish ages.

20.7 Statistical Findings

- Include reference to the statistical method used and the significance level for all relationships explained and validated in the results section through a statistical process. When reporting the results of statistical tests state the test statistic and associated probability [e.g., "...fish were significantly larger later in the season (Student's $t = 2.50$, $P < 0.05$, $df = 17$)"].

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[3] Narvar, R.A. and F.C. Withler. 1977. Age and size of steelhead trout, *Salmo gairdneri*, in angler catches from Vancouver Island, British Columbia, streams. Fisheries Research Board of Canada. Circular 91:1-26.

Be consistent in presentation of significance levels. Do not present probabilities (such as $P = 0.0248$), which may sometimes be output by statistical software packages, along with inequalities (such as $P < 0.025$) commonly published levels in Critical Value tables (e.g., 0.25, 0.10, 0.05, 0.025, 0.01) in the same report.

20.8 Copyright Permission

- Permission of authors other than U.S. Government and ADF&G staff is necessary before reprinting copyrighted tables or figures in your report. Most reports, other than U.S. Government publications, are copyrighted to authors (authors technically may be the agency the author works for). If you are uncertain how to proceed contact the Editor for instructions. Letters of permission should be sent to the Editor with the final copy of your report.

20.9 Using Terms Developed by Others

- Special terms or names for special mathematical expressions as used or coined by an author should be cited, and the terminology used should be the same as the term originally used by the author, unless variations are clearly defined and explained. For example:

  "We estimated potential fish production using Ryder's (1965) morphoedaphic index of yield where..."

20.10 Specialized Word Usage Standards

A series of appendices have been prepared to assist authors with difficult word forms and combinations, most being unique to fisheries reports. The appendices were developed from the references mentioned in the Standard References section below. These appendices include:

- Appendix B - lists standard abbreviations.
- Appendix C - examines special compound words commonly encountered in fisheries work.
- Appendix D - provides guidance on special terms that should be capitalized and situations when they should not.
- Appendix E - lists singular and plural forms of words that sometimes are troublesome for fishery workers.
- Appendix F - examines number-word combinations that are often confusing.
- Appendix G - provides word usage examples that frequently cause problems in reporting.

Sections 1 through 11 in the *Gregg Reference Manual* provide additional examples that authors may find helpful.

21. CLERICAL INSTRUCTIONS

Appendix I provides example report sections. Other clerical instructions have been summarized in Appendix H.

22. STANDARD REFERENCES

- Standard references for word definition and spelling are *Webster's Third New International Dictionary* and *The American Heritage Dictionary of the English Language*.

- The *Gregg Reference Manual*, *Sixth Edition* (McGraw-Hill Book Co.), edited by William Sabin, is the standard for style, usage, and grammar (the most current edition should always be used).

- *A List of Common and Scientific Names of Fishes from the United States and Canada*, Special Publication No. 12 of the American Fisheries Society, will be followed for both scientific and vernacular names of fishes. Taxonomic changes, as presented in the Transactions of the American Fisheries Society (e.g., Volume 117, No. 4, July 1988 concerning taxonomic changes in North American Trout Names), will be followed.

- The *Council of Biological Editors Style Manual* (CBE Manual) contains useful manuscript preparation information.

23. ACKNOWLEDGMENTS

Much of this manual was taken verbatim from the document entitled *Reporting Policies and Procedures for the Division of Commercial Fisheries, Edition 2*. Some sections were modified to conform to the Division of Sport Fish report series, report format standards, and word processing software and hardware.

APPENDIX A
LITERATURE CITED EXAMPLES

Appendix A. Literature cited examples.

Example Group 1 - Journals, Periodicals (any routine publications)

Burger, C. V., R. L. Wilmont, and D. B. Wangaard. 1985. Comparison of spawning areas and times for two runs of chinook salmon (*Oncorhynchus tshawytscha*) in the Kenai River, Alaska. Canadian Journal of Fisheries and Aquatic Sciences 42:693-700.

Duttweiler, M. W. 1976. Use of questionnaire surveys in forming fishery management policy. Transactions of the American Fisheries Society 105:232-239.

Von Geldern, C. E. and P. K. Tomlinson. 1973. On the analysis of angler catch rate data from warmwater reservoirs. California Fish and Game 59:281-292.

Example Group 2 - Books

Draper, N. R. and H. Smith. 1981. Applied regression analysis, second edition. John Wiley and Sons, New York.

Scheaffer, R. L., W. Mendenhall, and L. Ott. 1979. Elementary survey sampling. Duxbury Press, North Scituate, Massachusetts.

Zar, J. 1984. Biostatistical analysis. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Example Group 3 - Articles within Books or Symposium Proceedings

Anas, R. E. 1963. Red salmon scale studies. Pages 114-116 *in* Annual Report of the International North Pacific Fisheries Commission, 1961. Vancouver, British Columbia, Canada.

Geiger, H. J. *In press*. Parametric bootstrap confidence intervals for estimates of fisheries contribution in salmon marking studies. *In* R. L. Kendall, editor. Proceedings of the International Marking Symposium. American Fisheries Society, Bethesda, Maryland.

Koo, T. S. Y. 1962. Age designation in salmon. Pages 37-48 *in* Studies of Alaska red salmon. University of Washington Publications in Fisheries, New Series Volume 1. Seattle.

Tennant, D. L. 1976. Instream flow regimes for fish, wildlife, recreation, and related environmental resources. Pages 359-373 *in* J. F. Orsborn and C. H. Allman, editors. Instream flow needs, volume II. American Fisheries Society, Bethesda, Maryland.

-continued-

Example Group 4 - Government Reports

ADNR (Alaska Department of Natural Resources). 1985. State of Alaska instream flow handbook. Alaska Department of Natural Resources, Anchorage.

Clark, R. A. 1986. Arctic grayling stock status and population dynamics in the Tanana drainage. Pages 35-64 *in* Arctic-Yukon-Kuskokwim reports to the Board of Fisheries, Anchorage, Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Fairbanks.

McBride, D. N. 1980. Homing of Arctic char, *Salvelinus alpinus* (*Linnaeus*), to feeding and spawning sites in the Wood River Lake system, Alaska. Alaska Department of Fish and Game, Informational Leaflet No. 184, Juneau.

Mills, M. J. 1979. Alaska statewide sport fish harvest studies. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1978-1979, Project F-9-11, 20 (SW-I-A), Juneau.

_____. 1990. Harvest and participation in Alaska sport fisheries during 1989. Alaska Department of Fish and Game, Fishery Data Series No. 90-44, Anchorage.

Neuhold, J. M. and K. H. Lu. 1957. Creel census method. Utah State Department of Fish and Game Publication No. 8, Salt Lake City, Utah.

Pahlke, K. A., R. D. Mecum, and R. P. Marshall. *In press*. Migratory patterns and fishery distribution of Chilkat River chinook salmon. Alaska Department of Fish and Game, Fishery Data Series, Juneau.

Sumida, V. A. 1988. Land and resource use patterns in Stevens Village, Alaska. Alaska Department of Fish and Game, Technical Paper No. 129, Juneau.

Example Group 5 - Dissertations, Theses, Unpublished Documents

ADF&G (Alaska Department of Fish and Game). *In prep*. Application for reservation of water, Talkeetna River. Located at: Alaska Department of Fish and Game, Division of Sport Fish, Research and Technical Services, No. I.700.300.3900, Anchorage.

Buckland, S. T. *Unpublished*. Quantifying precision of mark-recapture estimates using the bootstrap. Located at: Inter American Tropical Tuna Commission, 8604 La Jolla Shores Drive, La Jolla, California.

DiCostanzo, C. J. 1956. Creel census techniques and harvest of fishes in Clear Lake, Iowa. Doctoral dissertation, Iowa State College, Ames.

Mattson, R. W. 1975. The Juneau area chinook salmon fisheries, with particular emphasis on the sport fishery, 1960-1973. Master's thesis, University of Washington, Seattle.

APPENDIX B
STANDARD ABBREVIATIONS AND SYMBOLS

Appendix B. Standard abbreviations and symbols.

Weights and Measures (Metric)

millimeter	mm
centimeter	cm
gram	g
kilogram	kg
kilometer	km
liter	L
meter	m

Weights and Measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
ounce	oz
pound	lb
quart	qt
yard	yd

Spell out acre, hectare, ton.

Time and Temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
hour	h (spell out for 24-hour clock)
minute	min
second	s

In text spell out year, months of the year, and days of the week.

-continued-

General (Some are Restricted)

compass directions:	
east	E
north	N
south	S
west	W
et alii (and other people)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.,
id est (that is)	i.e.,
latitude or longitude	lat. or long.
months (tables, figures --- otherwise spell out)	first three letters, e.g., Feb, Jun,
parts per million	ppm
parts per thousand	ppt

Mathematics, Statistics, Fisheries

all standard mathematical signs, symbols, and abbreviations

base of natural logarithm	e
catch per unit effort	CPUE
common test statistics	F, t, χ^2
confidence interval	C.I.
correlation coefficient	R (multiple)
correlation coefficient	r (simple)
degree (angular or temp.)	°
degrees of freedom	df
fork length	FL
harvest per unit effort	HPUE
less than or equal to	≤
greater than or equal to	≥
less than or greater than	< >
logarithm (specify base)	log
minute (angular)	'
not significant	NS
percent	%
probability	P
second(angular)	"
standard deviation	SD
standard error	SE

APPENDIX C
COMPOUND-WORD HELP

Appendix C. Compound-word help. Terms, parts of speech, and example usage for specialized fishery-related terms.

Word	Parts of Speech[a]	Example Usage
angler-days	(adj/n)	always hyphenated
angler-hours	(adj/n)	always hyphenated
baseline	(adj)	always one word
brood stock	(adj/n)	always two words
catch-and-release	(adj/n)	always hyphenated
catch per unit effort	(adj/n)	always without hyphens
chi-square	(adj/n)	always hyphenated
coded wire tag	(adj/n)	always without hyphen
database	(adj/n)	always one word
downriver (downstream)	(adj)	...the downriver camp was...
early-run	(adj)	...the early-run fish...
<u>or</u> early run	(n)	...the early run was over...
eastside,	(adj)	...eastside fishermen took...
<u>or</u> east side	(n)	...fishermen on the east side...
even-year,	(adj)	...even-year returns were...
finclip	(adj/v)	always one word
fly fishing	(adj/n)	always two words
fork length	(adj/n)	always two words
fork-of-tail	(adj/n)	always hyphenated
freshwater,	(adj)	...most freshwater species...
<u>or</u> fresh water	(n)	...most live in fresh water...
full time,	(n)	...worked the full time allowed...
<u>or</u> full-time	(adj/adv)	...all worked full-time...
harvest per unit effort	(adj/n)	always without hyphens
gill net,	(n)	...the set gill net was ripped...
	(adj)	...the drift gill net catch was...
<u>or</u> gillnet	(v)	...having gillnetted 2000 lbs...
headwater	(n)	...the headwaters originate...
inriver	(adj)	always one word
inseason	(adj)	always one word
instream	(adj)	always one word
lakeshore	(adj/n)	always one word

-continued-

Appendix C. (Page 2 of 2).

Word	Parts of Speech[a]	Example Usage
legal-size	(adj)	...legal-size crab were...
<u>or</u> legal size	(n)	...crab of legal size were...
length-weight	(adj/n)	always hyphenated
long-term	(adj)	...long-term impacts are...
man-hour	(n)	always hyphenated
man-month	(n)	always hyphenated
mark-recapture	(adj/n)	always hyphenated
mark-sense	(adj)	...the mark-sense forms...
or mark sensing	(n)	...mark sensing is the process...
mid-eye	(adj/n)	always hyphenated
odd-year,	(adj)	...the odd-year returns were...
outmigrate	(v)	...salmon outmigrate when...
outmigrating	(adj)	...the outmigrating fry were...
outmigrant	(n)	...the outmigrants passing...
<u>or</u> outmigration	(n)	...during the outmigration...
overfish, overwinter, overharvest, etc.	(v)	always one word
personal use	(adj/n)	always two words
post or preseason	(adj/n)	always one word
pre or postrecruit	(adj/n)	always one word
regionwide	(adj)	always one word
river mouth	(n)	...fish at the river mouth were...
<u>or</u> river-mouth	(adj)	...river-mouth fisheries...
salt water	(n)	...always live in salt water...
<u>or</u> saltwater	(adj)	...saltwater species may...
set nets	(n)	...use of set nets is not...
shoreline	(n)	always one word
short-term	(adj)	always hyphenated
sport fishing	(adj/n)	always two words
statewide	(adj)	always one word
subarea	(adj/n)	always one word
upriver	(adj)	always one word as adj.
year class	(adj/n)	always two words

[a] adj = adjective, adv = adverb, n = noun, v = verb.

APPENDIX D
CAPITALIZATION HELP

Appendix D. Capitalization help. Terms and example usage for commonly used ADF&G words.

Word	Capitalization Examples
Arctic char/grayling	always; proper name
board[a]	The board (council) listened to testimony
commissioner[b]	...Commissioner John Smith spoke... John Smith, commissioner of... The commissioner will not attend.
council	same as board; see above
department[a]	The Department of Fish and Game... The department recommended... The Department closed the fishery...
director	same as commissioner; see above
division	same as department; see above
Dolly Varden	always; proper name
Dungeness crab	always; proper name
emergency order	...Emergency Order 1-Y-10-87 was... ...the emergency order closed the...
federal	...so the federal government... ...the Federal Reserve Board...
Governor	...John Wilson, the governor of... Governor Wilson was... ...the governor signed the law...
legislature	same as department; see above
North Slope[c]	The North Slope terrain is...
Southeast Alaska[d]	The Southeast Alaska catch was...
Southcentral Alaska[d]	The Southcentral Alaska anglers were...
Arctic-Yukon-Kuskokwim[d]	The Arctic-Yukon-Kuskokwim streams...

-continued-

Appendix D. (Page 2 of 2).

Word	Capitalization Examples
southern, western northern, eastern[e]	...temperatures in western Alaska...
river(s) (sound, bay, etc.)	...the Chilkat River flow was... ...the flow in the river was... ...Yukon and Kuskokwim rivers...
Relative Stock Density	always
state	...the state of Alaska was... ...however, New York State was...
Tanner crab	always; proper name

[a] Only capitalize the short form when full agency force or official responsibility of the agency is being conferred in your usage.

[b] Do not capitalize titles of state officials (e.g., commissioners, senators, attorney general) except the Governor and Lieutenant Governor. However, these titles may be capitalized when there is limited readership that would consider the title to convey authority or high rank or in correspondence to/from the official's office. Also capitalize when the title is part of the individual's name (e.g., Director John Jones). Do capitalize most high ranking federal titles.

[c] Capitalize north, south, east, west when they designate definite regions or are an integral part of a proper name.

[d] Use Southeast Alaska, Southcentral Alaska, and Arctic-Yukon-Kuskokwim as place names.

[e] Do not capitalize western, central, eastern, etc., when used as an adjective describing a place name, a general geographic portion of a place name (e.g., Alaska), or its weather.

APPENDIX E
SINGULAR PLURAL HELP

Appendix E. Singular and plural help. Current dictionary spelling for fishery-related words.

Singular	Plural
alevin	alevins
alga	algae
char	char/chars[a]
crab	crabs
data; datum	data
fingerling	fingerlings
fish	fish/fishes[a]
formula	formulas or formulae
fungus	funguses/fungi
genus	genera
hypothesis	hypotheses
parr	parr/parrs[a]
plankter	plankton/plankters[b]
salmon	salmon/salmons[a]
smolt	smolt/smolts[a]
species	species
stratum	strata
symposium	symposiums; symposia
trout	trout/trouts[a]

[a] Add the "s/es" when referring to plural form of more than one species, but not always necessary or incorrect not to.

[b] "Plankters" may be used when referring to a collection of individuals, generally of the same species, as opposed to the more generalized form, "plankton."

APPENDIX F
NUMBER WORD HELP

Appendix F. Number-word help.

Before the Noun	Elsewhere in the Sentence
Fish Ages (use only as follows):	
...a 3-year-old fish	...a fish 3 years old
...age-I and -II smolts	...smolts aged I and II or: smolts classified as ages I and II
...age-0.3 sockeye salmon had or: 0.3-age sockeye salmon had	...sockeye salmon aged 0.3 had or: sockeye salmon age 0.3 had
...age-1. coho salmon had or: freshwater-age-1. coho salmon[a]	...coho salmon aged 1. had or: coho salmon of freshwater age 1[a]
...prerecruit-II crab were	...males were mostly prerecruit IIs
...age-.1 coho salmon or: saltwater-age-.1 coho salmon	...coho salmon aged .1 or: coho salmon of saltwater age 1
Other Number-Word Combinations:	
...a 16-meter (or 16-m) base	...a base of 16 meters (or 16 m)
...a 2-week extension[b]	...an extension of 2 weeks[b]
...the 6-hour opening	...the opening of 6 hours
...a 2.5:1 ratio	...a ratio of 2.5 to 1
...a 3-million-fish harvest	...a harvest of 3 million fish
Exceptions:	
...a 25 percent (or 25%) decrease	...a decrease of 25 percent (or 25%)
...a $20 thousand increase in	...an increase of $20 thousand
Other Correct Use:	*Incorrect/Avoid*:
...value of 0.043 was[c]	...a value of .043 was[c]
...the 1981-85 average was	...the 1981 to 1985 average or: the recent 5-year average[d]
...a 15- to 18-thousand reduction or: a reduction of 15 to 18 thousand	...a 15 to 18,000 reduction or: a 15 to 18-thousand reduction or: a 15 to 18 thousand reduction

[a] The inclusion of the "freshwater" (or "saltwater") qualifier is acceptable; whichever option you use, do so consistently throughout the report, do not mix.

[b] But not "...a 2-week's extension." However, "...a 2 week's extension," while acceptable, would rarely be appropriate for scientific writing.

[c] Always include the zero before the decimal in the text or tables/figures.

[d] Not explicit enough for scientific writing.

APPENDIX G
MISCELLANEOUS HELP

Appendix G. Miscellaneous help.

Correct Usage	Incorrect Usage/Avoid
...this will affect a fishery ...this will affect all fishers who...	do not use effect (see below)
...these were different from...	do not use different than
...the effect of this will be a restructuring... ...the regulation takes effect on... ...increased efficiency has had a major effect...	do not use affect (see above)
...farther[a] along the substrate ...farther[a] from the coast	do not use further; nor further out[a]
...this finding furthers... ...further up the chain of command ...should be further analyzed	do not use farther[a]
...regardless, there will be	do not use irregardless
...coho salmon are found[b]	coho are found

[a] Farther now is used only when referencing distance in a literal sense. Use further in all other situations.

[b] Same for other salmon, trout, crab, shrimp, etc. Except in the title, "salmon" may be dropped when used as an adjective (e.g., coho catches).

APPENDIX H
PRINTING AND CLERICAL INSTRUCTIONS

Appendix H. Printing and clerical instructions.

Word Processing Software & Submission of Diskettes

Draft and Final:

- Use Microsoft Word 4.0, 5.0, or 5.5; and WordPerfect 5.0 or 5.1
- Run through a spell check before printing.
- Note that report tables and figures may be printed using other software packages.

Final:

- Include an electronic copy of the report in Microsoft Word versions 4.0, 5.0, 5.5, or WordPerfect 5.0 or 5.1. IBM format diskette(s) may be either 3-1/2 inch (1.44 Mbyte) or 5-1/4 inch (360 kbyte).
- Use the secondary name DOC for Word files; WPF for WordPerfect files. Note that report tables and figures may be printed using other software packages. Include other files required to reprint the entire report (e.g., style sheet, page numbering file, spreadsheets, graphics files).
- Do not use the DOS "BACKUP" command; use the DOS "COPY" command when preparing the diskette(s) for Research and Technical Services. Any archive or library utilities used for report files or data sets must be fully compatible with the file archive package ARC, version 5.0.
- Include a file named README.DOC (or .WPF) that presents special instructions necessary to prepare an original final report complete with page numbers. Include the version of the software used and the name(s) of the printer drivers used. If the printer driver is one not normally distributed with the word processing software used, include an electronic copy on the document diskette.
- If the report has been broken into multiple files use intuitive file names (e.g., TABLE01.DOC for table 1) or include a list of the contents of each file in README.DOC (or .WPF).

Printers

Draft and Final:

- All draft and final copies should be printed on a series II, IID, III, IIID or compatible series Hewlett Packard LaserJet Printer.

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Symbol Sets

Avoid using the legal symbol set, unless that symbol set is necessary to print a particular character. There are several important differences between the ASCII and the Legal character sets. Use of the Legal character set could result in printing errors, especially in formulas, that could be easily overlooked.

Fonts for Reports

Draft and Final:

- Prestige 10 point is the standard portrait and landscape font (with Math8 or Math7 10 point being used for special mathematical characters). The 7 point size of the above fonts may be used for compressed print.

Spacing and Margins

Draft:

- Double-space all text, except the text footnotes, table of contents, lists of tables, figures, and appendices, and the literature cited section; prepare these per the Appendix I example.

- Use 1-inch margins all around with no gutter margins.

- Use full justification (align text on both right and left margins) throughout the main report text.

Final:

- Use single-space (6 lines per inch) or auto line spacing; otherwise follow all the draft requirements above.

- Use 1-inch margins all around with no gutter margins.

- Use full justification (align text on both right and left margins) throughout the main report text.

Headings and Footnotes

Draft and Final:

- Example manuscript sections are presented in Appendix I. Format, heading, line-spacing, footnotes, organization, and the general layout should be closely followed. Heading formats are described below.

-continued-

- First-order headings: Capitalize each letter of all words and center on the page. First-order headings should be separated from preceding text by two blank lines and followed by one blank line.

- Second-order headings: Capitalize the first letter of each word, left justify, underline. Second-order headings should be followed by one blank line.

- Third-order headings: Capitalize the first letter of each word, left justify, follow by a colon. Third-order heading should be followed by one blank line.

- Fourth-order headings: Capitalize the first letter of each word, left justify and place at the start of the text paragraph (same line as the text), and set off from text by a period followed by two spaces.

- Use superscript Arabic Prestige 7 point numeric identifiers for text footnotes. Separate text and footnotes with a 2.0-inch solid line. Text footnotes should be sequential throughout the text. Do not footnote text headings or the abstract. Use 0.5 line spacing between footnotes and justify footnote text.

- Use lower-case alpha superscript Prestige 7 point identifiers for table and appendix footnotes. The table footnote sequence starts with [a] for each new table (see Appendix I). Place all table footnotes after each table; leave one blank line between the table and the first footnote; use 0.5 line spacing between footnotes; justify text. Footnotes for multiple page tables should be placed on the last page of the table. Table titles may be footnoted, but it is better to make a second sentence in the title in most cases. Figures are not normally footnoted.

<u>Page Numbering</u>

Draft:

- Either number pages as described for final reports below, or number all pages consecutively with Arabic numbers beginning with "1" for the title page (pencil or print).

- Do not put page numbers in the table of contents or lists of tables, figures, and appendices.

Final:

- Lower-case Roman numeral numbering will begin with the first page of the table of contents and end one page before the abstract. Therefore the first Roman numeral to actually appear will be "-i-" on the table of contents. Count and number blank pages; number the cover page of each appendix.

-continued-

- The abstract will be numbered "-1-" and all other pages will be numbered sequentially, including appendices.

- Page numbers will appear in the horizontal center of the bottom margin 0.5-inch from the bottom paper edge.

- Prestige 10 point will be used for page numbering.

Tables and Figures

Draft and Final:

- Table and figure margins should never be less than 1 inch on each side. Tables and figures may be centered on a page, if it results in a more visually pleasing layout. Reduction of tables and figures to conform to margin requirements should be avoided, if possible.

- Table titles and figure captions should be within margin requirements and start on the left margin of the table or figure and extend to the right edge of the table or figure.

- Figure captions should be a minimum of one blank line below the figure.

- Table and appendix titles should be followed by a blank line. Normal line spacing (6 lines per inch) or auto line spacing may be used for the remainder of the table, with blank lines inserted as needed for emphasis within the body of the table.

- As a general rule, use only single, solid, horizontal dividing lines in tables; do not use vertical lines, boxes, or shading.

- In special or unusual circumstances (e.g., information cannot be presented in an understandable manner in a table without vertical lines, boxes, and shading; the software used to print tables does not allow the user to prevent the incorporation of vertical lines, boxes, and shading), the Editor will allow exceptions to the general rule concerning vertical lines, boxes, and shading in tables.

- There are several ways to produce solid horizontal lines for tables (e.g., underline character, tabs using an underline leader character, underlined control spaces, ASCII 102 formatted as PiFont 10 point). The ASCII 102 (f) formatted as PiFont 10 point was used in this document and the sample report sections in Appendix I in Microsoft Word 5.0, as it produced solid lines that did not crowd the title or following text.

-continued-

- If a table or appendix exceeds one page, put "-continued-" in Prestige 10 point at the bottom center of the table of each page except the last. Separate "-continued-" from the table by one blank line. Do not type the title on any pages but the first. On all continued pages use the following type of title: "Table 15. (Page 2 of 5)." See Appendix I.

- If a figure exceeds one page, put "-continued-" in Prestige 10 point at the bottom center of the figure of each page, except the last. Separate "-continued-" from the figure caption by a minimum of one blank line. Do not type the caption on any pages but the first. On all continued pages use the following type of caption: "Figure 1. (Page 2 of 5)."

- Table and appendix titles, figure captions, and footnote text should always be Prestige 10 point. The body of the table and figure, however, may be in compressed print to fit within the margin requirements.

Miscellaneous:

Draft and Final:

- In the draft report tables and figures may be grouped together at the end of the text or inserted after the text page on which the figure or table is first referenced. In the final draft tables and figures must be inserted within or after the text page on which the table or figure is first referenced.

- The single-sided reports will be duplicated to produce double-sided copies. Final reports submitted should include any blank pages necessary to ensure that single-to-double-sided copying will result in the following being right-facing pages: title page, the first page of the table of contents, the abstract, and the cover page for each appendix (e.g., Appendix A). Count and number blank pages; number the cover page for each appendix.

APPENDIX I
SAMPLE REPORT SECTIONS

Appendix I. Sample report sections.

FISHERY DATA SERIES NO. 90-1

STOCK ASSESSMENT OF ARCTIC GRAYLING IN FIELDING LAKE[1]

By

Robert A. Clark

Alaska Department of Fish and Game
Division of Sport Fish
Anchorage, Alaska

April 1990

[1] This investigation was partially financed by the Federal Aid in Sport Fish Restoration Act (16 U.S.C. 777-777K) under Project F-10-5, Job No. G-8-1b.

The Fishery Data Series was established in 1987 for the publication of technically oriented results for a single project or group of closely related projects. Fishery Data Series reports are intended for fishery and other technical professionals. Distribution is to state and local publication distribution centers, libraries and individuals and, on request, to other libraries, agencies, and individuals. This publication has undergone editorial and peer review.

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A1. Counts of anglers fishing the Chignik River for chinook salmon, 1988.....

A2. Daily summary statistics for sport anglers fishing the Chignik River for chinook salmon, 1988.....

(Note: If the lists of Tables, Figures, and Appendices will not fit on a single page, then put each on a separate page or pages.)

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ABSTRACT

Studies were conducted to determine the effects of pulsed direct current electrofishing on all species of fish for which electrofishing was being used as a method of sampling by the Alaska Department of Fish and Game. Species studied were rainbow trout *Oncorhynchus mykiss*, Arctic grayling *Thymallus arcticus*, northern pike *Esox lucius*, humpback whitefish *Coregonus pidschian*, and least cisco *Coregonus sardinella*. Rainbow trout sustained high rates of mortality (13.9%) and injury (40.9%) and electrofishing has been discontinued as a method of sampling for this species. Northern pike sustained a moderate rate of injury (12.5%) which was significantly higher than that sustained by a control sample. Additional research is being conducted to determine the effects of these injuries. Several experiments were conducted with Arctic grayling and injury rates varied from 0% to 18.3%. Although variable, virtually all of these injuries were minor and it was concluded that electrofishing does not have a substantial detrimental effect on grayling populations. Neither species of whitefish sustained injury due to electrofishing. Because of the problems of objectively assessing the degree and impact of injury, it was recommended that the most useful method of assessing the effects of electrofishing is at the population level, by testing for differential survival and growth over time between test and control groups of fish.

KEY WORDS: electrofishing, pulsed direct current, rainbow trout, *Oncorhynchus mykiss*, Arctic grayling, *Thymallus arcticus*, northern pike, *Esox lucius*, humpback whitefish, *Coregonus pidschian*, least cisco, *Coregonus sardinella*, injury, mortality.

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INTRODUCTION

The Chignik River is remotely located on the Alaska Peninsula near Chignik, Alaska (Figure 1)...Escapement of chinook salmon from 1963 through 1988 has averaged 2,018 fish (Table 1)...The Board of Fisheries addressed such concerns in March 1988 by reducing the sport bag limit from five to three chinook salmon ...The findings of this first year study are summarized in this report.[1,2]

METHODS

Creel Survey

The chinook salmon immigration...710 mm (ADF&G 1988). Sport fishing was not permitted within 100 m of the weir by regulation.

Study Design:

A roving creel survey...normally distributed random variables.

Data Collection:

During a selected sample period...angler characteristics and demographics.

Data Analyses:

Angler effort was calculated...over all periods as:

$$\hat{E} = \sum_{k=1}^{P} N_k \bar{Y}_k, \qquad (1)$$

and

$$V(\hat{E}) = \sum_{k=1}^{P} [N_k^2 (s_k^2/m_k)], \qquad (2)$$

where...Notations used in the above equations...are described in Table 2...exception that only fish harvested by interviewed anglers were used.

Biological Data

A portion of the chinook salmon...standard normal procedures.

---

[1] This is the first example of a text footnote. Footnotes should be numbered sequentially throughout the text using 7 point Prestige Arabic numerals.

[2] This is the second footnote on the same page. Use 1.0 line spacing in the footnote, but 0.5 line spacing between footnotes.

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Table 1. Return statistics for chinook salmon to the Chignik River, 1963-1988.

Year	Escapement[a]	Sport Harvest[b]	Personal Use Harvest[b]	Subsistence Harvest[c]	Commercial Harvest	Total Return
1963	690	50	100	32	1,744	2,616
1964	1,149	50	100	32	1,099	2,430
1965	1,186	50	100	32	1,592	2,960
1966	979	100	100	32	636	1,847
1967	1,868	100	100	32	882	2,982
1968	1,212	100	100	32	674	2,118
1969	687	100	100	32	3,448	4,367
1970	3,181	100	100	32	1,225	4,638
1971	2,475	150	100	32	2,010	4,767
1972	1,818	150	100	32	464	2,564
1973	929	150	100	32	525	1,736
1974	732	150	100	32	255	1,269
1975	1,001	150	100	32	549	1,832
1976	719	200	100	100	763	1,882
1977	847	200	100	50	711	1,908
1978	1,371	200	100	50	1,603	3,324
1979	1,178	200	100	9	1,266	2,753
1980	950	200	100	6	2,325	3,581
1981	1,804	300	100	100	2,694	4,898
1982	2,865	300	100	2	5,236	8,503
1983	2,250	300	100	0	5,488	8,138
1984	7,319	300	100	26	4,318	12,063
1985	3,826	300	100	1	1,919	6,146
1986	4,340	400	100	6	3,037	7,893
1987	2,224	400			2,651	5,275
Mean	1,904	188	100	32	1,885	4,103
1988[d]	4,868	233		3	7,300	12,404

[a] Expanded to include age 1.1 and age 1.2 chinook which are not counted as they pass through the weir gates.

[b] These components of the fishery were not quantified. These data are guesses by the commercial fishery manager.

[c] Average harvest during the years 1976 to 1986 (32 fish) was used as the estimate for the years 1963 to 1975.

[d] 1988 data are preliminary, with exception of the sport harvest.

-continued-

Table 2. Definitions for the notation used in the equations for calculating angler effort, rates of catch and harvest, and catch and harvest in the roving creel survey.

Notation	Definition
<u>Angler effort equations</u>	
$\hat{E}$	the estimate of effort in angler-hours.
N_k	the total number of hours of possible fishing time during period k.
$\bar{Y}_k$	the mean angler count for period k.
P	the number of daily periods.
m_k	the number of angler counts conducted during period k.
W	the number of weeks in the fishing period.
d_i	the number of days randomly selected for conducting an angler count during a specific weekly component i.
$\bar{Y}_k$	the mean angler count for period k over all weeks.
y_{ijk}	an angler count made during week i, day j, and period k.
<u>Catch and harvest equations</u>	
$\hat{C}$	the estimate of catch[a] during a specific weekly component.
$\bar{c}$	the mean catch[a] per angler by all anglers interviewed during a specific weekly component.
$\bar{c}_i$	the mean catch[a] per angler by all anglers interviewed on day i during a specific weekly component.
c_{ik}	the catch[a] by angler k interviewed on day i during a specific weekly component.
D	the number of days the fishery was open during a specific weekly component.

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-continued-

Table 2. (Page 2 of 2).

Notation	Definition
d	the number of days on which angler interviews were conducted during a specific weekly component.
$\bar{f}$	the mean number of hours fished by all anglers interviewed during a specific weekly component.
f_{ik}	the number of hours spent fishing by angler k interviewed on day i during a specific weekly component.
m_i	the number of anglers interviewed on day i during a specific weekly component.
r	the correlation between the c_{ik} and f_{ik} for anglers interviewed during a specific weekly component.
s^2	the sample variance for the mean angler count during a specific weekly component ($\bar{x}$).
s_c^2	the two-stage estimate of variance for the mean catch by anglers interviewed during a specific weekly component ($\bar{c}$).
s_f^2	the two-stage estimate of variance for the mean effort by anglers interviewed during a specific weekly component ($\bar{f}$).
s_i^2	the sample variance for the mean catch by anglers interviewed on day i of a specific weekly component ($\bar{c}_i$).

[a] Catch or harvest.

-continued-

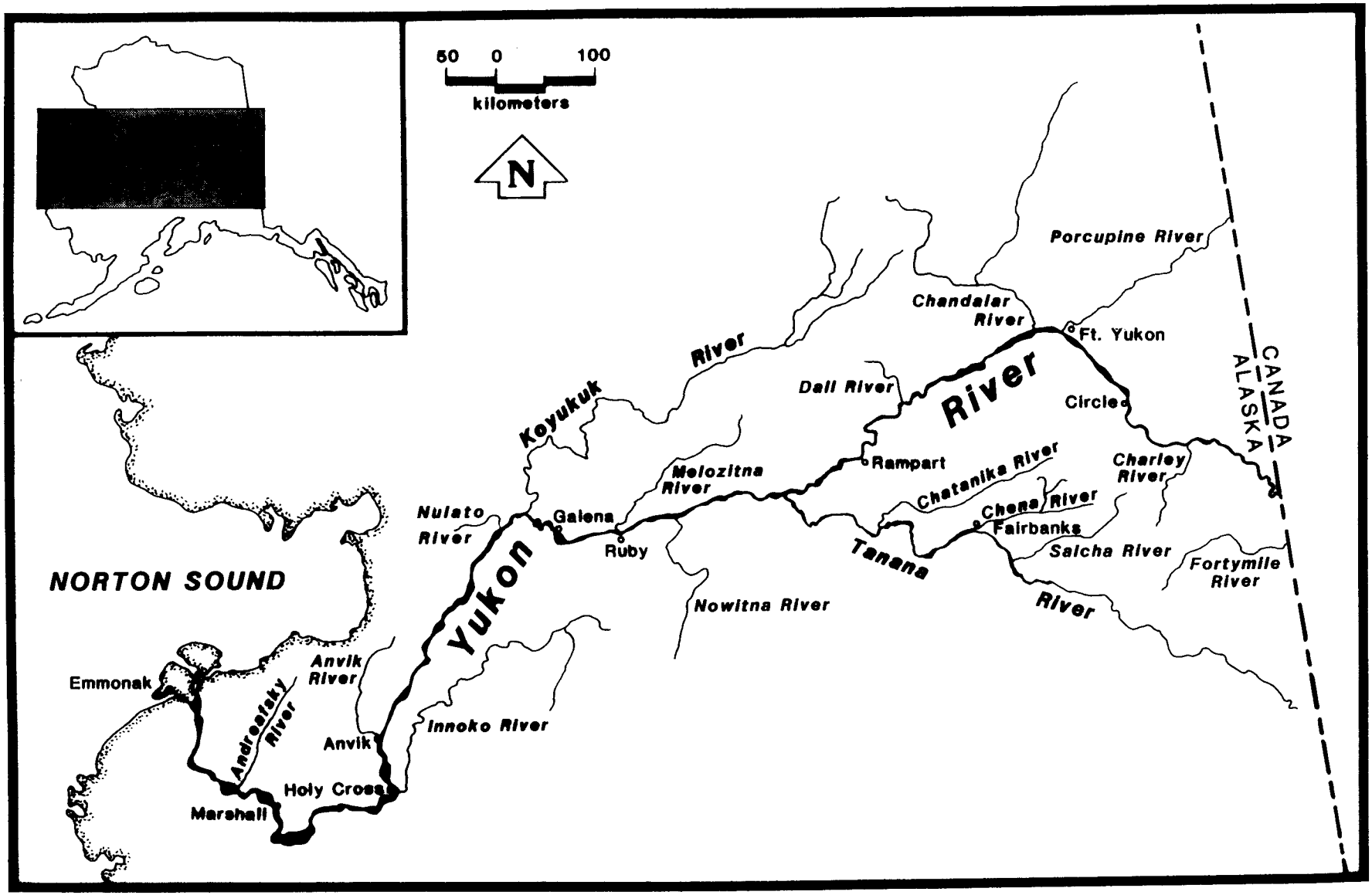

Figure 1. The Yukon River drainage.

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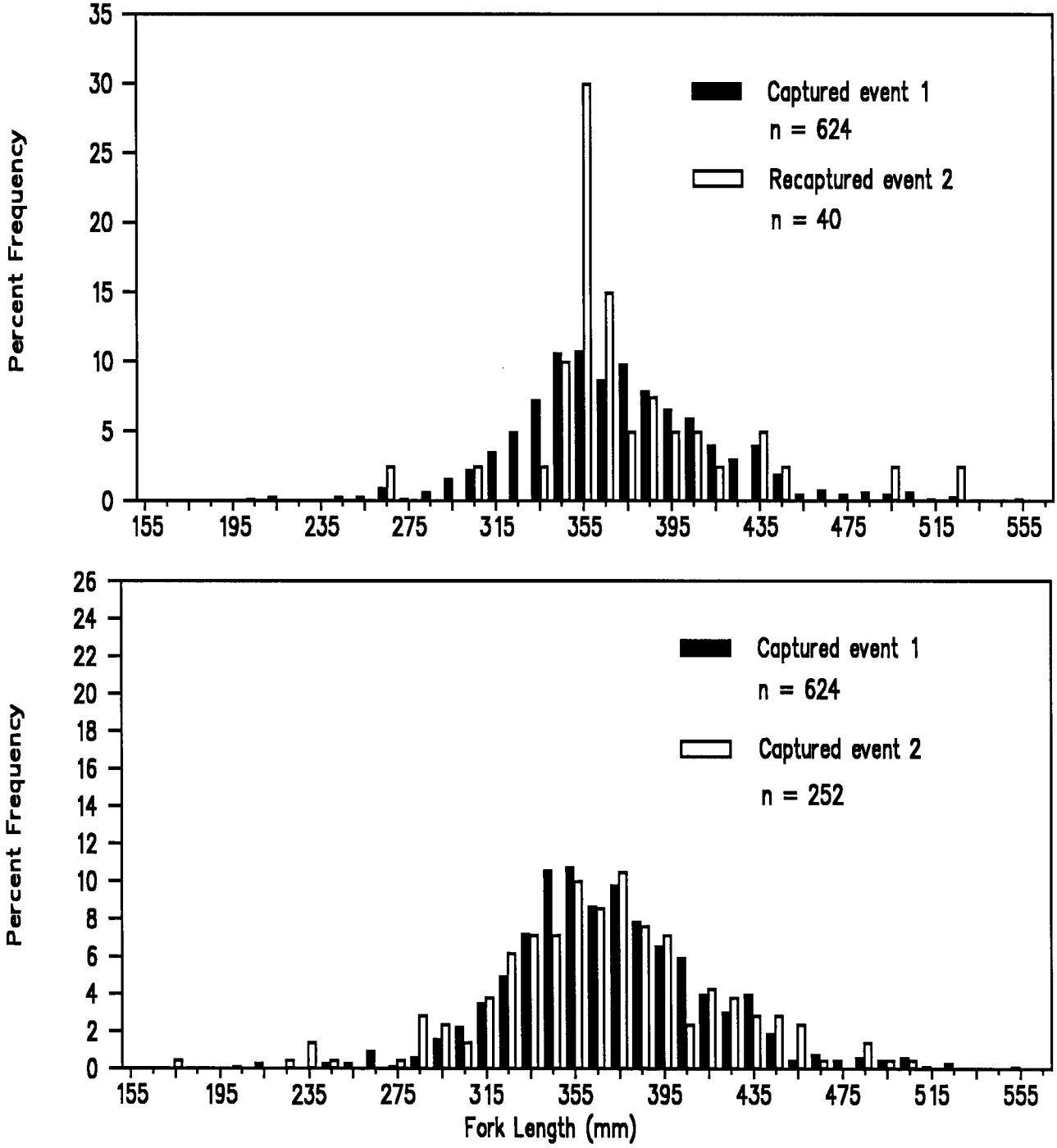

Figure 11. Length frequencies used to test for size selectivity in event 2 of the population estimate (top graph) and for equal size distribution between event 1 and event 2 (bottom graph) at the Olds River, October 1989.

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APPENDIX A
CHIGNIK RIVER CREEL SURVEY

-continued-

Appendix A2. Daily sample size (SS), harvest per unit of effort (HPUE), catch per unit of effort (CPUE), and other summary statistics for sport anglers fishing the Chignik River for chinook salmon, 1988.

		Effort (hours)			Harvest			Catch		
Date	Wd/ We[a]	SS	Mean	SE	Mean	SE	HPUE	Mean	SE	CPUE
7/02	We	4	4.91	0.31	1.00	0.41	0.20	1.75	0.85	0.35
7/06	Wd	2	1.54	0.50	0.00	0.00	0.00	3.00	2.00	2.00
7/10	We	8	1.57	0.65	1.13	0.30	0.74	1.25	0.37	0.82
7/11	Wd	7	2.02	0.00	0.86	0.40	0.43	1.00	0.38	0.50
7/13	Wd	2	1.39	0.25	1.00	0.00	0.80	1.00	0.00	0.80
7/19	Wd	6	3.90	0.65	1.33	0.33	0.34	2.00	0.86	0.51
7/20	Wd	2	3.03	0.00	1.50	0.50	0.50	1.50	0.50	0.50
7/26	Wd	6	2.81	0.97	1.33	0.42	0.47	2.17	0.70	0.77
7/27	Wd	4	3.03	0.00	0.25	0.25	0.08	0.25	0.25	0.08
7/28	Wd	6	0.54	0.00	0.17	0.17	0.33	0.17	0.17	0.33
8/04	Wd	2	3.08	0.00	2.00	1.00	0.67	3.00	0.00	1.00

[a] Wd = Weekday, We = Weekend.

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