

Alaska Department of Fish and Game

WRITER'S GUIDE

Third Edition



Alaska Department of Fish and Game
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Contents

Foreword.....	v
Acknowledgments	vi
Introduction.....	1
Section 1: Publication Guidelines and Printing Procedures	3
1.1 General Correspondence.....	3
1.2 ADF&G Publications: Types and Standards.....	3
1.3 Use of Images in Publications.....	4
1.4 Publication Procedures Required by Law	7
1.5 Cataloging, Distribution, and Archiving Requirements	10
Section 2: Conflict of Interest and Copyright.....	13
2.1 Ethics, Disclosure, and Informed Consent.....	13
2.2 Copyright.....	14
Section 3: Acronyms.....	16
3.1 Pluralizing Acronyms	17
3.2 Agencies, Organizations, Associations, and Commissions	17
3.3 Alaska Caribou Herds	21
3.4 Miscellaneous Abbreviations and Acronyms	22
Section 4: Compound Words.....	25
4.1 General and Technical Compound Words	25
4.2 Fishing Gear	37
4.3 Hyphenating Nouns and Adjectives.....	38
Section 5: Capitalization Help	41
Section 6: Watch-out Words	47
Section 7: Plurals.....	68
7.1 Animals, Fishes, and Related Terms	68
7.2 General Terms.....	70
7.3 Apostrophes	71
Section 8: Numbers	72
8.1 General Style.....	72
8.2 Modern Scientific Style.....	73
8.3 Dates	75
8.4 Time of Day	76
8.5 Fractions, Percentages, and Decimals.....	77
8.6 Ranges	78
8.7 Units of Measure, Mathematical Symbols, and Variables	79
8.8 Latitude and Longitude	80
8.9 Measurements.....	81
8.10 Pacific Salmon Ages.....	81

Section 9: Species Names and Rules	83
9.1 Scientific Names.....	83
9.2 Common Names.....	84
9.3 Family and Order Names	85
9.4 Shellfishes of Alaska.....	85
9.5 Finfishes of Alaska	87
9.6 Anemones of Alaska.....	89
9.7 Birds of Alaska	90
9.8 Mammals of Alaska.....	102
9.9 Amphibians and Reptiles of Alaska	106
Section 10: Punctuation Format and Abbreviations.....	107
10.1 Parentheses	107
10.2 Square Brackets	107
10.3 Braces and Angle Brackets.....	108
10.4 Comma, Semicolon, and Colon Use in a Series	108
10.5 Dashes and Hyphens	111
10.6 Slash Marks.....	112
10.7 Quotation Marks.....	112
10.8 Abbreviations	113
10.9 Social Titles, Academic Degrees, and Abbreviated Designations.....	113
10.10 Italics.....	114
Section 11: Grammar	116
11.1 Passive and Active Voice	116
11.2 Subject-Verb Agreement	117
11.3 Bias-Free and Gender-Neutral Language.....	118
Appendix A: Units of Measure, Scientific Abbreviations, Symbols, Conversions, Variables, and Equations.....	119
A.1 Abbreviations, Conversions, and Symbols.....	119
A.2 Variables and Mathematical Symbols	121
A.3 Equations.....	122
Appendix B: Standard References	125
B.1 General References	125
B.2 Technical References for Scientific Reporting	125
B.3 Scientific Name References	126
B.4 Cultural References	129
B.5 Map References.....	129
B.6 Fish Pathology References	130
Appendix C: Reference Formatting.....	131
C.1 Basic Guidelines for References	131
C.2 Citing Original Data Sources.....	131
C.3 Standards for Citing Sources Within the Text	132
C.4 Standards for List of References Cited	136
C.5 References Cited Format for Electronic Sources.....	138
Appendix D: References Cited	140
Index	143

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If you believe you have been discriminated against in any program, activity, or facility please write:

- ADF&G ADA Coordinator, PO Box 115526, Juneau, AK 99811-5526
- U.S. Fish and Wildlife Service, 4401 N Fairfax Drive, MS 2042, Arlington, VA 22203
- Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street NW, MS 5230, Washington DC 20240.

The department's ADA Coordinator can be reached via phone at the following numbers:

- (VOICE) 907-465-6077
- (Statewide Telecommunication Device for the Deaf) 1-800-478-3648
- (Juneau TDD) 907-465-3646
- (FAX) 907-465-6078

For information on alternative formats and questions on this publication, please contact the Commissioner's Office at (907) 465-6166.

Foreword

The third edition of the *Alaska Department of Fish and Game Writer's Guide* promotes consistency, simplifies writing decisions, and provides answers and standards for some of the everyday writing dilemmas met by department staff. Is active or passive voice structure a better choice? Is *Chinook* always capitalized? Can *Alaskan* be used as an adjective? Is it acceptable to use the term *fisherman* in the twenty-first century? This guide can answer these often perplexing questions and provide guidance for writers.

Before 1992, department employees lacked a concise reference for their daily correspondence. In March 1992, Commissioner Carl Rosier adopted, as policy, the *Alaska Department of Fish and Game Writing Standards*, first edition, as our department's guide to provide consistent word usage for department publications and correspondence.

In 1999, a second edition of the Writing Standards was created—*Alaska Department of Fish and Game Writer's Guide*—with updated material to further consistency. However, language evolves, and after 11 years it was time to update the department's writing standards.

Accurate and consistent writing is essential for department communications and helps further our mission. This updated edition is more than a writer's guide, it is department policy. Thank you for using this guide and adhering to the department's writing standards.

Denby S. Lloyd
Commissioner

Acknowledgments

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This guide was organized and produced by the Alaska Department of Fish and Game Interdivisional Publications Committee.

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Introduction

The purpose of this guide is to provide consistent writing standards across all divisions of the Alaska Department of Fish and Game (ADF&G). This guide ensures consistency in correspondence, educational and informational publications, and scientific and technical reports.

Peers, colleagues, and supervisors judge our work products by how well we use and write our language. We all take good writing for granted. Not until we are forced to read a weakly constructed manuscript—disorganized, filled with stacked adjectives, dangling syntax, or misplaced modifiers—do we appreciate the effective and considerate writer.

This guide is the third edition of the *Alaska Department of Fish and Game Writer's Guide*. It updates and replaces the second edition, published in 1999. As a departmental tool, this guide has been coordinated among divisions, and provides common guidance for writers.

This guide takes precedence over divisional manuals, and will provide the first level of guidance for ADF&G publications. Divisions may have their own policy and procedures for producing their reports and correspondence, and may provide specific guidelines or templates for those processes.

Follow the writing principles provided in this guide, except in cases where written materials are prepared in partnership with other agencies or universities, submitted to journals, or are bound by strict regulatory language. In those cases, standards may conflict with this guide. Manuscripts prepared for journals, for example, will take the style of the journal where an editorial style differs from this guide.

Section 1: Publication Guidelines and Printing Procedures

This section defines and explains the publications produced by the department, content and distribution requirements, and publication printing procedures required by law.

Alaska Statute (AS 44.99.200 - 44.99.240) defines a publication as follows.

(1) *publication* means a written document, including books, brochures, flyers, manuals, newsletters, pamphlets, programs, reports, and similar documents, but does not include standard forms, letterhead stationery, letterhead envelopes, election ballots, construction plans and specifications, location and design study reports, the Alaska Statutes, the Alaska Administrative Code, the Alaska Rules of Court, publications produced by the University of Alaska press, and papers that are submitted to a publisher, including a publisher of journals and anthologies, that is not a state agency;

(2) *state agency* means

(A) a department, institution, board, commission, division, authority, public corporation, or other administrative unit of the executive branch, including the University of Alaska and the Alaska Railroad Corporation;

(B) a committee, division, or administrative unit of the legislative branch, including the Alaska Legislative Council, the leadership of each house, the office of victims' rights, and the office of the ombudsman;

(C) an administrative unit of the judicial branch, including the Alaska Judicial Council and the Commission on Judicial Conduct.

1.1 General Correspondence

General correspondence such as letters, memos, news releases, and emergency orders are not considered publications; however, some of the information presented in the *ADF&G Writer's Guide* can be helpful for those types of correspondence. Templates may be available from your publications or administrative staff. In addition, ADF&G's Public Communications Section, located at ADF&G Headquarters in the commissioner's office, can help you with publication-related questions as well. See Section 8 Numbers for number use for both general style and modern scientific style.

1.2 ADF&G Publications: Types and Standards

The three types of ADF&G publications are informational and educational publications, professional papers, and scientific and technical reporting series. All publica-

tions must have contact information clearly stated at the front of the document. This includes a contact telephone number, ADF&G copyright, division name, and the date published. All publications must also include the Office of Equal Opportunity (OEO) statement (see Section 1.4f). Additionally, informational and educational publications and scientific and technical reporting series should always include the ADF&G logo.

Informational and Educational Publications: Information and educational materials are those produced for distribution to the public. They include books, guides, booklets, brochures, posters, newsletters, flyers, articles, curricula, interpretive signs, electronic slide presentations, film/video/audio, and podcasts. Informational and educational publications have various distribution and content requirements (Table 1). Write informational and educational publications in a general style, not modern scientific style (see explanation of styles in Section 8 Numbers).

All ADF&G informational and educational publications currently in use will be included in an informational and educational resources database, which is scheduled to be available to staff in 2010. Publications and clerical staff will maintain the database. Contact your publication staff or the Public Communications Section in the commissioner's office if you have questions.

Scientific Journal Articles and Professional Papers: Journal articles and professional papers include manuscripts that address issues of concern to the department, natural history or related subjects, and are prepared by division personnel for publication in a professional journal. The primary audience is usually wildlife and fisheries professionals, but some papers may be of interest to those in other disciplines. Procedures for submission vary by divisions.

Scientific and Technical Reporting Series: Each division has its own scientific and technical policies and procedures; contact your publications staff for information.

1.3 Use of Images in Publications

For general information on who owns a copyright and under what circumstances, see Section 2.2 Copyright.

a. First Amendment and the Right to Privacy

The First Amendment to the United States Constitution allows individuals and agencies to film and photograph subjects in public places. Individuals have legal privacy rights that apply to private places such as a person's home, hotel room, bathroom, etc. The right to privacy also extends to certain public places: cameras are banned in courthouses, capital buildings, secured government buildings, and prisons unless you obtain written permission. In addition, filming and photography cannot interfere with police, fire, medical, or emergency operations. How-

ever, private properties open to the public, such as stores, stadiums, or tourist areas, may allow photography and filming unless signs are posted that expressly forbid these.

b. Publishing identifiable subjects and obtaining model releases

ADF&G staff should obtain written permission from identifiable subjects through a signed model release form when possible. In the interest of respect, good public relations, and the safety of children or vulnerable citizens, obtain permission despite the First Amendment rights. Permission is not necessary prior to taking a photo, but should be in hand prior to publishing. However, receiving permission when the photo is taken is generally easier than retrieving it several days or months later.

Providing a notice that photos will be taken and obtaining signed model releases prior to public events, especially school activities, is recommended.

For minors and those who are unable to execute a release, please contact the legal guardians or those responsible for the subject.

The ADF&G model release form is available through your publications staff or Public Communications Section.

c. Writing captions

The 2008 *Associated Press Stylebook and Briefing on Media Law* suggests the following guidelines for writing captions. The first sentence of the caption describes what the photo shows, in the present tense, and states the place and location of the photograph.

Use: Trawl fisherman John Smith hauls in line during the 2009 spring troll fishing season in Southeast Alaska. ©2009 ADF&G. Photo by Jim Craig.

The second sentence of the caption gives background on the event or describes why the photo is important. Whenever possible, try to keep the captions to no more than two concise sentences while including the relevant information.

Use: Troll fisherman John Smith hauls in line during the 2009 spring troll fishing season. The yearly salmon harvest was better than expected. ©2009 ADF&G. Photo by Jim Craig.

Captions do not have to be full sentences; if the relevant information can be presented in a few words, phrases can be used as captions as well.

Use: Trawl fishing in Southeast Alaska. ©2009 ADF&G. Photo by Jim Craig.

d. Photo illustrations

Photo illustrations differ from photos in content, creation, and purpose. Photo illustrations are manufactured situations staged or produced in a studio and are

often used for promotion. When an existing photograph is altered for artistic purposes, such as adding or deleting content, it also is considered a photo illustration. Subjects photographed in their natural or usual location are not considered photo illustrations.

Use caution when creating digital illustrations or manipulating images in any way. The final image should not be so photorealistic that a reader could perceive it as being real.

Carefully consider any consequences, including jeopardizing credibility, before creating a photo illustration. Never enhance content or decrease size of subjects for the purpose of making the subject appear in a way other than the true and actual circumstances of the image. For example, do not digitally manipulate extra fish into a photo of a fish tote for the purpose of showing a harvest greater than that which actually occurred.

When publishing a photo illustration, it should be made clear that the image does not represent a real situation. In all cases, photo illustrations should be labeled as such. Any permitted alteration changing the original content of an image must be labeled as a “photo illustration.”

Artistic use of images, as in a collage, is permitted, but you must obtain permission from and credit all the original photographers.

Photos that are enhanced by cropping, eliminating specks and scratches, or minor adjustment to color and contrast, etc., are not considered photo illustrations.

Photo illustrations should be credited as follows:

Use: © 2009 ADF&G. Photo Illustration by [artist’s name.]

Photo illustration; original photo by ‘photographer’s name.’ [This credit is only appropriate where you are altering a photo taken by someone else, and you must receive the permission of the copyright holder to do so.]

These photo illustration guidelines are based on the policies of the Associated Press, University of Washington, and University of Wisconsin.

e. Use of official department portraits

ADF&G maintains digital portraits of the commissioner, some commissioner’s office staff, and directors. Before using these staff photos in publications, to accompany articles, or provide to others, contact the Public Communications Section to outline the use of the photo and to ensure that you are using the most current and appropriate photo.

1.4 Publication Procedures Required by Law

a. Printing requirements

Alaska Statute 44.99.200 requires the Department of Administration to establish standards for the production of state agency publications. These standards apply to publications of a state agency intended for both internal and external audiences.

Basic printing standards are intended to promote low cost and consistency.

Consult with the headquarters supply section or your divisional administrative or publications personnel to determine the procedures for a printing contract. Be aware of the procurement requirements in the ADF&G Standard Operating Procedure 100.

In accordance with state laws, ADF&G publications, excluding those produced by an ADF&G xerographic copier, shall be produced by an in-state commercial facility or certified employment program. If none of these options can produce the material as specified, then use out-of-state printing facilities.

Alaska Statute 36.30.170 provides standards for contract awards after bid, including qualifying conditions for bidder preferences. See your department's supply section for information on bidder preferences.

It is important to document all communications with the printer. This can prevent misunderstandings, nonperformance, or missed deadlines by either party. As long as a printer makes a good faith effort to rectify a poor performance, the State of Alaska cannot refuse to send them future invitations to bid. It is state policy to send the incumbent bidder a request for bid unless there is a history of poor performance. Problems or questions about a printer's performance should be documented and brought to the attention of your procurement department.

b. Procurement requirements

ADF&G publications must comply with state printing standards, which vary among publication types. These standards change from time to time; please ask your supply officer for updates.

The following is a brief summary of the Delegations of Procurement Authority for ADF&G as of this printing. These are taken from Alaska Statutes, the Alaska Administrative Code, and the Alaska Administrative Manual.

1. Purchases <\$5,000, except credit card purchases, require reasonable and adequate solicitation effort to Alaska vendors before out-of-state solicitation.
2. Solicitations >\$5,000 to \$25,000 require soliciting at least three Alaska vendors for a verbal response before out-of-state solicitation.

3. Solicitations >\$25,000 to \$50,000 require written solicitation of three Alaska vendors for a written response before out-of-state solicitation.
4. Solicitations >\$50,000 require a formal Invitation to Bid in accordance with Alaska Statute 36.30.130 and Title 2 Alaska Administrative Code 12.130, and may not be solicited outside Alaska without Department of Administration approval that Alaska solicitation only is impractical.
5. For all purchases, an Alaska Bidder Preference of 5% and applicable preferences in Alaska Statute 36.30.170(b) shall be considered when awarding contracts.
6. For professional services contracts, the Alaska Offerers Preference of 10% must be considered.
7. All printing services shall be procured in accordance with Alaska Statute Title 36, Chapter 30 (State Procurement Code), Alaska Administrative Code, Title 2, Chapter 12, and Alaska Administrative Manual 83.010–83.065.

c. Production of publications

Per Alaska Statute 44.99.200,

“The publications of a state agency shall be produced at a private sector facility located in the state when practicable. The Department of Administration shall establish standards for the production of publications by state agencies, except that the Board of Regents of the University of Alaska shall establish the standards for the university.”

d. Cost blocks

Per Alaska Statute 44.99.210 Disclosures on Publication,

“If the actual annual costs for a publication of a state agency that are paid from the general fund exceed \$1,500, or if the actual annual costs of a state agency publication that is a report required by law are paid from a source other than the general fund and exceed \$1,500, the publication must include a statement that gives the name of the agency releasing the publication, the purpose of the publication, the cost for each copy of the publication, and the city and state where the printing was done. The statement must read: “This publication was released by... (name of state agency)..., produced at a cost of \$... per copy to... (statement of purpose)..., and printed in... (city and state where printed).” If the publication is required by law, the statement must also include: “This publication is required by... (appropriate citation to Alaska law).” The statement may include, if applicable, a declaration of the revenue raised by the sale of the publication or from the purchase of advertising in the publication. The statement shall be printed in one conspicuous place in the body of the publication in a type size that is not smaller than 12 points and shall be placed in a box composed of at least two-

point rule. In this section, “cost for each copy” means the figure that results after dividing the total contract cost of producing the publication by the number of copies produced. This section does not apply to a publication that is intended primarily for foreign or other out-of-state use, to a program for a public ceremony of a state agency, or to materials used by a state agency to develop a market for the agency’s services or products.”

The cost block can be reduced in size for a smaller-sized publication. Here are examples of cost blocks.

This publication was released by Alaska Department of Fish and Game at a cost of \$1.89 per copy to promote fishery research and printed in Juneau, Alaska.

This publication was released by Alaska Department of Fish and Game at a cost of \$1.89 per copy to promote fishery research and printed in Juneau, Alaska.

e. International Standard Book Number

An International Standard Book Number (ISBN) is a unique commercial numerical identifier that was increased from 10 to 13 digits in 2007. The digits consist of five parts:

1. Global Standards 1 (GS1) prefix: 978 or 979
2. Group identifier: a one- to five-digit number
3. Publisher code: These are assigned by ISBN agency; large publishers receive large blocks of numbers and smaller publishers smaller blocks. Publishers can request additional blocks of numbers as needed.
4. Item number: selected by the publisher
5. Checksum digit or check digit: an extra digit added for purposes of error detection

Publishers are not required to assign ISBNs, but few books are sold commercially without ISBNs. Contact the Public Communications Section to obtain an ISBN.

f. Office of Equal Opportunity statement

Every ADF&G publication, including brochures, videos, event flyers, and display posters, must have the ADF&G Office of Equal Opportunity (OEO) statement printed in a prominent location, such as on the inside front or back cover. Electronic publications must provide a link to the OEO statement. Please note that this statement is updated occasionally. All personnel are responsible for ensuring they use the most current version; other non-ADF&G agencies or individuals that are licensed or have permission to use ADF&G materials must include this statement with those materials.

The most current version will always be located at a link on the bottom of every ADF&G web page.

In the case of permitted web page reproduction of ADF&G materials, an “OEO Statement” link to the ADF&G OEO web page can be substituted for full textual reproduction.

Each division is responsible for listing a phone number for obtaining copies or other contact information on their publication.

An abbreviated version of the OEO statement may be used for brochures and publications of two pages or less when space is limited. The abbreviated version is available from publications or Public Communications Section staff.

g. Provide a copy to Public Communications Section

The Public Communications Section will compile and maintain a list of publications in accordance with Alaska Statute 44.99.220. List of Publications. “A state agency shall compile and maintain a list of the publications that it produces each fiscal year.” A copy of all brochures and publications created for public distribution must be submitted the Public Communications Section in compliance with the state documentation requirements. For scientific and technical reports, divisions are individually responsible to compile and maintain the listings.

1.5 Cataloging, Distribution, and Archiving Requirements

Listed here are the various types of publications and their cataloging, distribution, and archiving requirements. Publications staff are responsible for these duties; however, creators of works are responsible for informing their publications staff of their work, so that it can be properly catalogued, distributed, and archived. All types of publications will be made available in electronic format to universities, libraries, and government agencies by request.

a. Informational and educational publications

Publication staff will enter all informational and educational publications into a centralized database. This includes, but is not limited to books, guides, booklets, brochures and pamphlets, posters, newsletters, flyers, articles, curricula, interpretive signs, electronic slide presentations, film or audio presentations, and podcasts.

b. Scientific and technical publications

The Alaska Resources Library and Information Services (ARLIS): The library, located in Anchorage, serves ADF&G statewide. ADF&G is a founding member of this multi-agency library. ARLIS attempts to collect every report produced by ADF&G and is responsible for long-term historical access to ADF&G research data, publications and resources, and maintains a dedicated server for PDF files. They request two paper copies of each ADF&G publication. Publications staff are responsible for mailing the copies to the following address:

ARLIS
3211 Providence Drive
Library, Suite 111
Anchorage AK 99508

Alaska State Library: The state library, located in Juneau, is the depository for reports from all departments in the State of Alaska. According to Alaska Statute 14.56.120, “each state agency shall deposit, upon release, at least four copies of each of its state publications...”. As of this printing, the state library requires eight copies of ADF&G publications for distribution to its regional depository libraries around the state. Publications staff are responsible for mailing the copies to the following address:

Alaska State Library
Attn: Government Publications
PO Box 110571, MS 0571
Juneau, AK 99811-0571

c. Information Services

All staff statewide who need information services should use ARLIS for journal access, database access for literature searches, interlibrary loans, and all reference services.

Table 1. Content and distribution requirements for informational and educational publications.

Resource type	Include in Publications					Distribute to	
	Cost block	ISBN	OEO statement	I&E database	ADF&G logo	ARLIS	Alaska State Library
Books	See 1.4d	yes	yes	yes	yes	yes	yes
Guides	See 1.4d	yes	yes	yes	yes	yes	yes
Booklets	See 1.4d	optional	abbrev.	yes	yes	yes	yes
Brochures	See 1.4d	no	abbrev.	yes	yes	yes	no
Posters	See 1.4d	no	abbrev.	yes	yes	no	no
Newsletters	See 1.4d	no	yes	yes	yes	yes	no
Flyers	no	no	abbrev.	no	optional	no	no
Articles	no	no	no	optional	no	no	no
Curricula	See 1.4d	optional	yes	yes	yes	yes	no
Interpretive signs	See 1.4d	no	yes	yes	yes	no	no
Electronic slide presentations	no	no	yes	optional	optional	no	no
Audio/film/video	no	yes	yes	yes	yes	yes	no
Podcasts	no	no	no	yes	optional	no	no
Emergency orders	no	no	no	no	yes	no	no
News releases	no	no	no	no	yes	no	no

Note: ISBN = International Standard Book Number, a unique number assigned to each book by its publisher according to an established standard; OEO = Office of Equal Opportunity; I&E = Information and Education; ARLIS = Alaska Resources Library and Information Services.

Section 2: Conflict of Interest and Copyright

2

2.1 Ethics, Disclosure, and Informed Consent

a. Use of commercial product or vendor name

ADF&G images, information, and published or written materials may never be used as a direct endorsement for commercial or political purposes. Mention by name of a commercial product (e.g., Spam, Visqueen) or vendor (e.g., Bendix Corporation) in a departmental or external publication warrants inclusion of a disclaimer, either as a footnote or as a single generic statement at the back or front of all reports or publications.

Use: Product names used in this publication are included for completeness but do not constitute product endorsement.

The appearance of the product labels is for artistic purposes and to help illustrate the great economic benefits of sustainable salmon resources in Alaska. The Alaska Department of Fish and Game does not endorse or recommend any specific company or their products.

The appearance of [ADF&G article, image, etc.] is not an Alaska Department of Fish and Game recommendation for or implied endorsement of [company name or product]. The Alaska Department of Fish and Game, in accordance with State of Alaska ethics laws, does not favor one group over another through endorsement or recommendation.

Provide a disclaimer when ADF&G images or information are used for information only purposes by a commercial or political entity or in instances when there could be a perceived endorsement. An author's inclusion of an editor's assistance in a work does not imply endorsement.

If an agency outside ADF&G reprints a publication, it is understood that this act is not an endorsement by the department; ADF&G cannot promote one company, organization, author, or entity over another.

b. Scientific journal articles and professional papers

Scientific journals have specific standards and policies regarding conflict of interest. When submitting an article, review and follow their specific standards.

2.2 Copyright

The foundation of copyright is provided in the U.S. Constitution. The U.S. copyright law is contained in Chapters 1 through 8 and 10 through 12 of Title 17 of the United States Code. The Copyright Act of 1976, which provides the basic framework for the current copyright law, was enacted on October 19, 1976, as Pub. L. No. 94-553, 90 Stat. 2541.

a. ADF&G copyright information

The ADF&G Standard Operating Procedure III-401 Copyright Policy covers the following topics: the department's copyrighted material, departmental contracts, copyright protection versus public disclosure, works made for hire, fair use, licenses and requests to reproduce the department's copyrighted materials, how to handle requests from other agencies to reproduce copyrighted materials, Internet and copyright, the department's copyright notice, and staff use of copyrighted material.

In addition, the department's copyright notice describing ADF&G's copyright authority is provided at the foot of each ADF&G web page.

All efforts should be taken to protect the state's copyrighted materials while also respecting the copyrights of others. Copyright laws are enforceable and unlawful use can result in serious fines and penalties.

The simple rule *ask before you use* is the best protection against illegal use or copyright infringement. If you are unsure whether an image belongs to ADF&G with clear copyright, do not use or publish the image. Do not assume that permissions are still in effect for something previously used properly and within the policy of our agency. It is your duty to find out the use permissions and what they cover.

b. ADF&G copyright notice

Copyright protection begins automatically from the moment the work is created in fixed form and begins without any formality, process, or application. The standard copyright notice is not required to establish copyright. Nevertheless, copyright notice should be included on the department's formal publications and any other important materials.

All unique works produced by ADF&G staff should include a copyright notice. When space is an issue, an abbreviation of the agency full title is acceptable, and the agency acronym may be used when the full title has been established in the published material.

Use: ©2009 Alaska Department of Fish and Game. [entire work copyrighted]
 ©2009 Alaska Department of Fish and Game/Photo by 'name.' [standard]
 ©2009 AK Dept. Fish and Game/Illustration by 'name.' [abbreviated]
 ©2009 ADF&G/'name.' [full ADF&G title already established]

Occasionally, special materials that need the highest possible level of copyright protection (e.g., department logo, computer program) should be registered with the federal copyright office and may be additionally protected under federal and state trademark laws. The Copyright Office recommends online registration, and they have a lower filing fee for electronic submissions.

Library of Congress
U.S. Copyright Office
101 Independence Avenue SE
Washington, DC 20559-6000

Registration can prove useful if copyright infringement is litigated by the State of Alaska. Registration is not required to hold intellectual property rights to materials.

Section 3: Acronyms

3

Acronyms are a concise way to reference agencies, organizations, associations, commissions, and other commonly used words that appear repeatedly in a manuscript or publication. However, it is easy to get carried away; rather than enhancing comprehension, acronym-heavy text can be confusing to your readers. The guidelines listed here will help you decide in which instances your readers are better served by an acronym.

1. Spell out the acronym or abbreviation on first use and follow with the acronym in parentheses to prepare your readers for subsequent use. If the acronym is parenthetically introduced in the abstract, it must be introduced again in the text.
2. For large publications, if an acronym appears fewer than five times in a publication, it should be spelled out each time it is used. An exception to this rule is made for news releases; acronyms can be used without restrictions after first introduction.
3. Be sure to use the correct acronym. It is important to keep acronyms standard between divisional publications to increase their recognition factor, and conform to defined abbreviations. Agencies, businesses, corporations, etc., have defined their own abbreviations or acronyms; under no circumstances is it correct to modify that abbreviation in any way. In other words, upper and lowercase letters, periods, and symbols are used exactly as the agency or business uses them. It is almost always appropriate to define these abbreviations on first use.
4. Do not use acronyms for subsequent references if they appear far later than the initially spelled-out instance. How far is too far? Would readers who are unfamiliar with the topic understand the acronym if they came upon it after the first reference?
5. Avoid alphabet soup. It is more often confusing than impressive. Rewrite copy peppered with acronyms.
6. Generally, do not put *the* preceding an acronym when it is standing alone. Acronyms are read as words and, except when used adjectivally, are rarely preceded by *a*, *an*, or *the* (CMS 2003).

Use: New restrictions were announced by ADF&G last year.

Avoid: The ADF&G announced the new restrictions.

Use: Member nations of NATO enhanced their counter-piracy mission.

Initialisms are read as a series of letters and are often preceded by an article.

Use: Member nations of the EU [initialism]

Depending on your audience, particularly if it is scientific, removing periods from most general abbreviations is a recognized standard (e.g., NOAA, VFDA). Once an acronym or abbreviation is established, follow that form exactly throughout the document.

3.1 Pluralizing Acronyms

When an acronym denotes a plural (if its spelled-out meaning is plural), the fact that it is an acronym makes it a word in its own right and therefore it is treated as if it were singular.

Acronyms without periods are pluralized by adding an *s*. Although periods in abbreviations should be limited as much as possible, they are sometimes needed to prevent misreading. To create a plural abbreviation, omit the apostrophe when there are no periods in an abbreviation (MDs), but use it when an abbreviation has periods or internal capitalization (Ph.D.'s).

If the abbreviation without periods forms a word that has another meaning and adding *s* alone would create confusion, use an apostrophe and *s* for the plural. An apostrophe and *s* is also used for the possessive.

Use:	c.o.d.	Avoid:	cod
Use:	c.o.d.'s	Avoid:	cods or cod's
Use:	CWTs	Avoid:	CWT's (unless it is possessive)
Use:	URLs	Avoid:	URL's (unless it is possessive)
Use:	ATVs	Avoid:	ATV's (unless it is possessive)

3.2 Agencies, Organizations, Associations, and Commissions

a. ADF&G divisions and sections

Alaska Board of Fisheries	BOF
Alaska Board of Game	BOG
Alaska Sustainable Salmon Fund	AKSSF
Big Game Commercial Services Board (replaced the Guide Board)	BGCSB
Boards Support Section (formerly the Division of Boards)	BSS
Commercial Fisheries Entry Commission	CFEC
Commissioner's Office	CO
Division of Commercial Fisheries	CF
Division of Administrative Services	DAS ¹
Division of Habitat	Habitat
Division of Sport Fish	SF
Division of Subsistence	Subsistence ¹
Division of Wildlife Conservation (formerly the Division of Game)	DWC or Wildlife Conservation ¹
Fisheries Rehabilitation, Enhancement and Development Division	FRED ²
Joint Board of Fisheries and Game	Joint Boards
Kachemak Bay Research Reserve	KBRR
Public Communications Section	PCS

b. State of Alaska

Alaska Department of Commerce, Community, and Economic Development	DCCED
Alaska Department of Corrections	DOC
Alaska Department of Education and Early Development	DEED
Alaska Department of Environmental Conservation	DEC
Alaska Department of Fish and Game	ADF&G ³
Alaska Department of Health and Social Services	DHSS
• Division of Public Health	DPH
Alaska Department of Labor and Workforce Development	DOLWD
Alaska Department of Law	DOL
Alaska Department of Military and Veterans Affairs	DMVA
Alaska Department of Natural Resources	DNR
• Division of Forestry	DOF
Alaska Department of Public Safety	DPS
• Division of Alaska Wildlife Troopers	AWT
Alaska Department of Revenue	DOR
Alaska Department of Transportation and Public Facilities	DOT&PF
Alaska Permanent Fund Corporation	APFC
Alaska Public Offices Commission	APOC
Office of Management and Budget	OMB
University of Alaska Anchorage	UAA
• Institute of Social and Economic Research	ISER–UAA
University of Alaska Fairbanks	UAF
• Institute of Arctic Biology	IAB–UAF
• Institute of Marine Science	IMS–UAF
• School of Fisheries and Ocean Sciences	SFOS–UAF
University of Alaska Southeast	UAS

c. U.S./Federal

Association of Fish and Wildlife Agencies	AFWA
Bureau of Indian Affairs	BIA
Bureau of Land Management	BLM
• National Petroleum Reserve-Alaska	NPR-A
Code of Federal Regulations	CFR
Federal Insecticide, Fungicide and Rodenticide Act	FIFRA
• Special Local Need	SLN
Federal On-Scene Coordinator	FOSC
National Environmental Policy Act	NEPA
National Marine Fisheries Service	NMFS
• Restricted Access Management Division	RAM
National Oceanic and Atmospheric Administration	NOAA
National Park Service	NPS
North Pacific Research Board	NPRB
Pacific Salmon Commission	PSC
United States	U.S.
United States of America	USA
U.S. Army Corps of Engineers	COE
U.S. Department of Agriculture	USDA
• Animal and Plant Health Inspection Service	APHIS
• Food Safety and Inspection Service	FSIS
U.S. Department of Commerce	DOC
U.S. Department of Defense	DOD
U.S. Department of Health and Human Services	USDHHS
• Centers for Disease Control and Prevention	CDC
• Division of Global Migration and Quarantine	DGMQ

U.S. Department of Homeland Security	USDHS
U.S. Department of the Interior	DOI
• Customs and Border Protection	CBP
U.S. Department of Transportation	USDOT
• Federal Aviation Administration	FAA
• Maritime Division	MARAD
U.S. Environmental Protection Agency	EPA
U.S. Fish and Wildlife Service	USFWS
• Alaska Maritime National Wildlife Refuge	AMNWR
• Arctic National Wildlife Refuge	ANWR
• Fisheries Information System	FIS
• Office of Subsistence Management	OSM
• Yukon Flats National Wildlife Refuge	YFNWR
U.S. Forest Service	USFS
U.S. Geological Survey	USGS
• Biological Resources Discipline	BRD
U.S. National Park Service	NPS
• Gates of the Arctic National Park and Preserve	GAAR
U.S. Occupational Safety and Health Administration	OSHA
• Hazardous Waste Operations and Emergency Response	HAZWOPER
U.S. Public Health Service	USPHS

d. Other agencies, organizations, associations, and commissions

Ahtna Regional Corporation	Spell out
Alaska Aquaculture, Inc.	AAI
Alaska Coastal Management Program	ACMP
Alaska Eskimo Whaling Commission	Spell out
Alaska Federation of Natives	AFN
Alaska Invasive Species Working Group	AISWG
Alaska Native Foundation (The)	Spell out
Alaska Outdoor Council	AOC
Alaska Professional Hunters Association	APHA
Alaska Public Employees Association	APEA
Alaska Rodent Action Team	ARAT
Alaska Rural Development Council	Spell out
Alaska Sea Life Center	ASLC
Alaska Sea Otter Commission (The)	Spell out
Alaskan Shellfish Grower's Association	ASGA
Alaska State Employees Association	ASEA
Alaska Trappers Association	ATA
Alaska Village Initiatives	Spell out
Alaska Wildlife Conservation Center	AWCC
Aleut Regional Corporation	Spell out
Aleutian/Pribilof Islands Association	Spell out
American Fisheries Society	AFS
Arctic Slope Regional Corporation	ASRC
Armstrong-Keta, Inc.	AKI
Association of Fish and Wildlife Agencies	AFWA
Association of Village Council Presidents	AVCP
Bering Sea Fishermen's Association	BSFA
Bering Straits Regional Corporation	Spell out
Bethel Native Corporation	Spell out
Bristol Bay Native Association	BBNA
Bristol Bay Native Corporation	BBNC
Burro Creek Farms	BCF
Calista Regional Corporation	Spell out

Canada Department of Fisheries and Oceans	DFO
Central Council—Tlingit and Haida Indian Tribes of Alaska	Spell out
Chignik Regional Aquaculture Association	CRAA
Chugach Regional Corporation	Spell out
Chugachmiut	Spell out
Cook Inlet Aquaculture Association	CIAA
Cook Inlet Regional, Inc.	CIRI
Comprehensive Wildlife Conservation Strategy	CWCS
Copper River Native Association	Spell out
Council for Yukon First Nations	CYFN or (First Nations) ⁴
Dingell–Johnson	D–J
Doyon Regional Corporation	Spell out
Douglas Island Pink and Chum, Inc.	DIPAC
Exxon Valdez Oil Spill Trust Council	EVOSTC
Eskimo Walrus Commission	Spell out
Hunter Heritage Foundation of Alaska	HHFA
Independent Science Advisory Board	ISAB
Indigenous People’s Council for Marine Mammals	Spell out
International Bowhunter Education Program	IBEP
International Pacific Halibut Commission	IPHC
Inuit Circumpolar Conference	ICC
Joint Technical Committee	JTC
Kake Nonprofit Fisheries Corporation	KNFC
Kawerak, Inc.	Spell out
Ketchikan Tribal Hatchery Corporation	KTHC
Klawock River Hatchery, Inc.	KRHI
Kodiak Area Native Association	Spell out
Kodiak Regional Aquaculture Association	KRAA
Koniag Regional Corporation	Spell out
Kuskokwim Native Association	Spell out
Maniilaq Association	Spell out
Marine Mammal Commission	MMC
Medvejie Creek Hatchery	Spell out
Metlakatla Indian Community	MIC
NANA Regional Corporation, Inc.	Spell out
National Academy of Sciences	NAS
National Science Foundation	NSF
Nongovernmental organization	NGO
North Pacific Anadromous Fish Commission	NPAFC
North Pacific Fishery Management Council	NPFMC
Northern Southeast Regional Aquaculture Association	NSRAA
Public Broadcasting System	PBS
Pacific States Marine Fisheries Commission	PSMFC
Port Graham Hatchery Corporation	PGHC
Prince of Wales Hatchery Association	POWHA
Prince William Sound Aquaculture Corporation	PWSAC
Qutekcaq Shellfish Hatchery	Spell out
Rural Alaska Community Action Program, Inc.	RurAL CAP
Sealaska Regional Corporation	Spell out
Sitka Sound Science Center	SSSC
Sikusuilq Hatchery	Spell out
Southeast Alaska Regional Health Consortium	SEARHC
Southern Southeast Regional Aquaculture Association	SSRAA
Tanana Chiefs Conference, Inc.	TCC
The Nature Conservancy	TNC
Trans-Alaska Pipeline System	TAPS

Tlingit and Haida Fisheries Development Corporation	THFDC
United Nations	UN
Valdez Fisheries Development Association	VFDA
Vuntut Gwich'in First Nation	VGFN
Western Association of Fish and Wildlife Agencies	WAFWA
World Wildlife Fund	WWF
Yukon Department of Environment	YDE
Yukon–Kuskokwim Health Corporation	YKHC
Yukon Territorial Government	YTG

Note: For a list of village councils and corporations not listed in this section, contact Rural CAP, 731 E 8th Avenue, PO Box 200908, Anchorage, AK 99520; phone 907-279-2511. Their Rural Directory can be purchased or accessed online.

- ¹ No official abbreviation, but short form is acceptable for informal use.
- ² Now merged into other divisions.
- ³ Do not delete the ampersand (&) from ADF&G, as it is an integral part of our agency abbreviation. Manuscripts submitted for publication outside the department should also use ADF&G (most editors do not know the correct abbreviation and will assume you do).
- ⁴ Following the signing of the Umbrella Final Agreement, Council for Yukon Indians (CYI) became CYFN.

3.3 Alaska Caribou Herds

The words *caribou* and *herd* are not capitalized.

Use:	Nelchina herd	Delta and Fortymile herds	Teshkepuk caribou herd
	Adak caribou herd		Spell out
	Beaver Mountains caribou herd		Spell out
	Central Arctic caribou herd		CAH
	Chisana caribou herd		CCH
	Delta caribou herd		DCH
	Denali caribou herd		Spell out
	Farewell–Big River caribou herd		Spell out
	Fortymile caribou herd		FCH
	Fox River caribou herd		FRCH
	Galena Mountain caribou herd		GMH
	Hodzana caribou herd		HCH
	Kenai Lowlands caribou herd		KLCH
	Kenai Mountains caribou herd		KMCH
	Killey River caribou herd		KRCH
	Kilbuck caribou herd		KCH
	Macomb caribou herd		MACH
	Mentasta caribou herd		MECH
	Mulchatna caribou herd		MCH
	Nelchina caribou herd		NCH
	Northern Alaska Peninsula caribou herd		NAP
	Nushagak Peninsula caribou herd		NPCH
	Porcupine caribou herd		PCH
	Rainy Pass caribou herd		Spell out
	Ray Mountains caribou herd		RMH
	Southern Alaska Peninsula caribou herd		SAP
	Sunshine Mountains caribou herd		Spell out
	Teshkepuk caribou herd		TCH

Tonzona caribou herd	TOH
Twin Lakes caribou herd	TLCH
Unimak caribou herd	UCH
Western Arctic caribou herd	WAH
White Mountains caribou herd	Spell out
Wolf Mountain caribou herd	Spell out

3.4 Miscellaneous Abbreviations and Acronyms

All of the following miscellaneous abbreviations and acronyms except those with a footnote should be spelled out in full on first use, and followed by the abbreviation or acronym in parentheses. In many cases, it may be better to avoid using the abbreviation, especially if the word is infrequently used in the document.

Above Ground Level, or above ground level	AGL
Advisory Committee (state)	AC
age-weight-length (adj)	AWL
Alaska Family Leave Act	AFLA
Alaska Juneau Mine	AJ Mine
Alaska National Interest Lands Conservation Act ¹	ANILCA ¹
Alaska Native Claims Settlement Act	ANCSA ¹
Alaska Subsistence Salmon Database	ASSDB
amounts reasonably necessary for subsistence	ANS
approved leave without pay	ALWOP
Arctic–Yukon–Kuskokwim	AYK
as soon as possible	ASAP
bacterial kidney disease	BKD
biological escapement goal	BEG
brood year	BY
capital improvement project	CIP
capture–mark–resight	CMR
carapace width/length	CW/CL
catch per unit effort	CPUE
Clean Water Act	CWA
coded wire tag	CWT
Community Development Quota	CDQ
compare	cf.
compass directions (maps and coordinates):	
• east	E ¹
• north	N ¹
• south	S ¹
• west	W ¹
Community Subsistence Information System	CSIS
Comprehensive Conservation Plan	CCP
Comprehensive Environmental Response, Compensation and Liability Act	CERCLA
controlled use area	CUA
cub(s) of the year	COY
customary and traditional	C&T (use finding, by board)
days of week (first three letters in tables, figures, or parenthetical use only, no period; otherwise spell out)	Sun, Mon, etc.
defense of life or property	DLP
Deoxyribonucleic acid	DNA ¹
Doctor of Philosophy degree	Ph.D. ¹

emergency order	EO
Endangered Species Act	ESA
Environmental Assessment	EA
Environmental Impact Statement	EIS
Equal Employment Opportunity/Affirmative Action	EEO/AA
essential fish habitat	EFH
et alii (and others)	et al. ¹
et cetera (and so forth)	etc. ¹
Evolutionarily Significant Unit	ESU
Exclusive Economic Zone	EEZ
exempli gratia (for example)	e.g., ¹
<i>Exxon Valdez</i> oil spill	EVOS
Federal Family and Medical Leave Act	FMLA
federal fiscal year	FFY
field purchase order	FPO
file transfer protocol (Internet)	FTP
fiscal year (State of Alaska FY10 is from July 1, 2009 to June 30, 2010)	FY
fishery management plan	FMP
fish resource permit	FRP
fish transport permit	FTP
fork length	FL
free on board (do not spell out)	FOB or f.o.b. ¹
Game Management Unit	GMU
general fund	GF
geographic information system	GIS
Geospatial Population Estimator	GSPE
Global Positioning System	GPS
Great Circle Route	GCR
Guide Use Area	GUA
Gulf of Alaska	GOA
guideline harvest level	GHL
harvest per unit effort	HPUE
Hazard Analysis and Critical Control Points	HACCP
hypertext markup language	HTML
id est (that is)	i.e., ¹
Individual Fishing Quota	IFQ
individual transfer quota	ITQ
infectious hematopoietic necrosis virus	IHNV
International Health Regulation	IHR
Integrated Pest Management	IPM
International Union for Conservation of Nature and Natural Resources	IUCN
joint venture	JV
latitude/longitude	lat/long ¹
leave without pay	LWOP
local area network	LAN
local ecological knowledge	LEK
Magnuson–Stevens Fishery Conservation and Management Act	Magnuson–Stevens Act ²
Marine Mammal Protection Act	MMPA
Matanuska Valley/Matanuska-Susitna Borough/region	Do not abbreviate to Mat-Su
maximum sustained yield	MSY
memorandum of agreement	MOA
memorandum of understanding	MOU
merit anniversary date	MAD
months (first 3 letters in tables, figures only, otherwise spell out)	Feb, Jun, etc., no period
National Environmental Protection Act	NEPA
news release	NR

not interested	NI
notice of violation	NOV
number	
<ul style="list-style-type: none"> • for general audiences • for technical audiences 	no.
optical character recognition	nr
optical mark recognition	OCR
Pacific Fisheries Information Network	OMR
Pacific Salmon Treaty	PacFIN
Pittman-Robertson	PST
point of sale	P-R
portable document format	POS
position control number	PDF
Position Description	PCN
purchase request	PD
regional planning team	PR
regulatory year (e.g., July 1, 2009 to June 30, 2010 is RY09)	RPT
Shipwreck Response Plan	RY
Shipping Safety partnership	SRP
Supplemental Environmental Impact Statement	SSP
Regional Advisory Committee (federal)	SEIS
Reimbursable Services Agreement	RAC
Retirement Incentive Program	RSA
river kilometer	RIP
river mile	RKM
sex (tables, figures, and crosses only—otherwise spell out)	RM
<ul style="list-style-type: none"> • male • female 	♂ ♀
Social Security number	SSN
special harvest area/terminal harvest area	SHA/THA
Statewide Harvest Survey	SWHS
Subsistence Halibut Registration Certificate	SHARC
sustainable escapement goal	SEG
time of day	
<ul style="list-style-type: none"> • ante meridiem • post meridiem 	AM/a.m. ³ PM/p.m. ³
Tongass Land and Resource Management Plan	TLMP
total length	TL
traditional ecological knowledge	TEK
travel authorization	TA
viral hemorrhagic septicemia virus	VHSV
Wallop-Breaux	W-B
Wildlife Analysis Area	WAA
wide area network	WAN
World War I	WWI
World War II	WWII
World Wide Web	www
young-of-year	YOY

¹ Because this acronym is commonly used and widely recognized, it may be used as is on first reference with no introduction.

² Magnuson-Stevens Act is a shortened version of the Magnuson-Stevens Fishery Conservation and Management Act. We expect it will be abbreviated sometime soon.

³ For more information, see Section 8.4 Time of Day.

Section 4: Compound Words

4.1 General and Technical Compound Words

Many compound words tend to evolve from two words to a hyphenated word, and then to a closed compound. Some terms in the dictionary that are spelled as two words may now be hyphenated, and some hyphenated words now in the dictionary may now be spelled as one word. Sometimes two or three terms may be in current use.

There are several types of compound words: an open compound (spelled as two or more words), a hyphenated compound (spelled with one or more hyphens), and a closed compound (also called a solid compound and spelled as a single word). Words formed with prefixes—while not technically compound words—are sometimes included with them.

We have listed compound words commonly used within the department. For specific guidance on fishing gear, see Section 4.2 Fishing Gear. If you cannot find a term here or in the dictionary see Section 4.3, Hyphenating Nouns and Adjectives. Sources are listed at the end of this section.

Word	(Form) Example of Usage	Source ¹
A		
above-mentioned (before-)	(adj) — avoid use of <i>above-mentioned</i>	C 7.90; G 824b
add-on	(n/adj) <i>the hatchery add-on allowed</i>	A
adipose-clipped	(adj) never abbreviate as <i>ad-clipped</i>	
age at maturity	(n) <i>their age at maturity was</i>	C 5.92
age-at-maturity	(adj) <i>age-at-maturity studies</i>	C 5.92; G 816a
age class (group) ^{2,3}	(n/adj) — two words	W; R
age-weight-length	(adj) — hyphenated	
age terms	(adj) — scientific writing style does not spell out numbers: a <i>3-year-old</i> bear, the <i>5-year-old salmon</i> , <i>8- to 10-year-olds</i> general writing style spells out the numbers 1–9: a group of <i>eight- to ten-year-olds</i> , the boy was <i>four years old</i> , a <i>seven-year-old</i> car	C 7.90
all-terrain (vehicle)	(n) — hyphenated	
angler-day (-hour)	(n) — hyphenated	C 5.92
areawide ⁴	(n/adj) the distribution will be <i>areawide</i>	C 7.90(2); G 820b
at-risk (wildlife)	(adj) — hyphenated	A
audiotape	(n) — one word	W; A
B		
backcountry	(n/adj) — one word	W; A
backtrack	(v) — one word	W; A
backwater	(n/adj) — one word	W; A

Word	(Form) Example of Usage	Source ¹
baseline ²	(adj) — one word	W
bear-baiting	(adj) — the <i>bear-baiting</i> station	C 7.90(1)
bear baiting	(n) — two words, not hyphenated	
bear-viewing	(adj) — the <i>bear-viewing</i> station	C 7.90(1)
bear viewing	(n) — two words, not hyphenated	
benefit-cost (cost-benefit)	(adj) <i>the benefit-cost</i> ratio	C 7.90; G 806, 818b
bi (words)	(prefix) — one word, <i>biweekly</i>	C 7.90(3); G 833a
bio (words)	(n/adj) — usually one word	C 7.90(3); G 835
bird watcher	(n) — two words	
boat day ³	(n/adj) — two words	C 7.90; G 818a
bottomfish ²	(n/adj) — one word	R
bottomwater	(n/adj) — one word	R
break up	(v) the ice began to <i>break up</i> in	W
breakup	(n) <i>breakup</i> occurred in	W; A
broad-leaved	(adj) — hyphenate	W; A
broodstock ²	(n/adj) — one word	W
brood year ³	(n/adj) — two words	G 818a
buyback	(n/adj) encourage a <i>buyback</i> program	R
bycatch	(n/adj) — one word	G 833a; T
	(v) — avoid (see Section 6)	
C		
cannot	(v) — one word	W; A
capture–mark–recapture	(adj) — use an en dash	
capture–mark–resight	(adj) — use an en dash	
carryover	(n) <i>the carryover</i> was substantial	A
catch-and-release	(n/adj) — hyphenate	C 7.90; T; G 828
catch-at-age	(n/adj) — hyphenate	C 7.90
catcher-only	(n/adj) — hyphenate	C 7.90; T; G 806
catcher–processor	(n/adj) — use an en dash	C 7.90
catcher–seller	(n/adj) — use an en dash	C 7.90
catch-per-unit-effort	(adj) — hyphenate	
catch per unit effort	(n) — without hyphens	T
centerline	(n) the road's <i>centerline</i>	R
charter boat	(n) our <i>charter boat</i> is	C 7.90; G 801
charterboat	(adj) the <i>charterboat</i> captain	T
checkstation	(n/adj) — one word	T
chi-square	(n/adj) — hyphenate, or use symbol χ^2	A; R
chlorophyll a	(n) <i>chlorophyll a</i> was	T;
chlorophyll-a	(adj) <i>chlorophyll-a</i> data	T;
cleanup	(n/adj) the oil spill <i>cleanup</i> was difficult	A
clean up	(phrasal) they will need to <i>clean up the</i>	A
clearcut	(n/adj/v) — one word if used in relation to forests	R
clear water	(n) in <i>clear water</i>	C 7.90; G 801
clearwater	(adj) <i>clearwater</i> species normally	T
co (words)	(prefix) almost always one word (<i>cochair, coauthor, coworker</i> ; however, <i>co-owner</i>)	C 7.90(3); G 835
coastline	(n/adj) — one word	W; A
coastwide ⁴	(adj) — one word	C 7.90(2); G 820b
coded wire tag ⁵	(n/adj) — do not hyphenate ³	T; G 827a
coded-wire-tag ⁵	(v) were <i>coded-wire-tagged</i> ³	G 811–812
cold water	(n) <i>they occur in cold waters</i> of	W; A
coldwater ²	(adj) most <i>coldwater</i> species are	A

Word	(Form) Example of Usage	Source ¹
common property	(n/adj) — two words, no hyphen	R; G 818a
cost-effective	(adj) — hyphenate	G
cost-recovery	(adj) — hyphenate, <i>cost-recovery</i> fishing	
cost recovery	(n) — returns include fish caught for <i>cost recovery</i>	
crabmeat	(n) — one word	R
crossbreed	(n) — one word	W
crossroad	(n) — one word	W
cub(s) of the year	(n/adj) — do not hyphenate	T; G 818c
D		
database	(n/adj) — one word	R; A
data set ³	(n) — two words	R
deadloss	(n) — one word	T
deep-sea	(n) — hyphenate	R
deep water	(n) live in <i>deep water</i>	W
deepwater	(adj) <i>these deepwater</i> seines	W
divisionwide ⁴	(adj) — one word	C 7.90(2); G 820b
die-off/die off	(n) — hyphenate, (v) — two words	W
downrange	(adj) — one word	
downriver	(adj/adv) the <i>downriver</i> camp is	W; A
downstream	(adj/adv) the <i>downstream</i> camp is	W; A
drainagewide ⁴	(adj) — one word	C 7.90(2)
E		
early run	(n) the <i>early run</i> was	C 7.90(1), G 816a
early-run	(adj) the <i>early-run</i> Chinook	G 816a, 814
ear tag	(n) the <i>ear tag</i> read	C 7.90(1); G 816a
eartagged	(v/adj) <i>they eartagged</i> the bears	C 7.90(1); G 816a
east side	(n) fisheries on the <i>east side</i>	C 7.90(1); G 816a
eastside	(adj) the <i>eastside</i> catch was	W
ecotourism	(n) — one word	W
eelgrass	(n) — one word	W
egg take	(n) the <i>egg take</i> began on	G 801
egg-take	(adj) <i>egg-take</i> operations will continue	C 7.90(1); G 816a
elect	(adj) <i>Governor-elect</i> Smith	G 808b
electrofishing	(n) — one word	W
e-mail	(n) — hyphenate	W
en route	(adv/adj) — two words	W
even-year	(adj) the <i>even-year</i> returns are	G 816a, 814
ex- (words)	(adj) <i>ex-partner</i> (see Section 6)	C 7.90(2); G 808b
exvessel	(adj) — one word	C 7.90(2)
F		
<i>F</i> -test	(n/v/adj) — hyphenate phrase, italicize <i>F</i>	T
field test ²	(n) conduct a <i>field test</i>	R
field-test	(v) to <i>field-test</i> the equipment	A
fieldwork	(n) budget expenditures on <i>fieldwork</i>	A; R
filter feeder	(n) — two words	W
filter-feeding	(adj) — hyphenate	C 7.90(1)

Word	(Form) Example of Usage	Source ¹
finclip	(adj/v) — one word	T
finfish	(n/adj) — one word	W; A
firsthand	(adv) — one word	W
fish farming ³	(n/adj) — two words	R
fish ladder ³	(n/adj) — two words	W; R
fish meal ³	(n/adj) — two words	W
fish pass ³	(n/adj) — two words	T; G 818a
fishway	(n/adj) — one word	W
fish wheel ³	(n/adj) — two words	W; R
fixed-wing	(adj) — hyphenate	R
flightseeing	(n) — one word, similar to <i>sightseeing</i>	Oxford English
floodplain	(n) — one word	A; W
floodwater	(n) — one word	W
fly-fishing	(n/adj) — hyphenate	A; R
follow-up	(n/adj) a <i>follow-up</i> meeting; but we need to <i>follow up</i> with a meeting	C 7.90(1); G 815a
food/bait fishery	(adj) the <i>food/bait</i> herring fishery	T; G 295a
food chain	(n) — two words	W
foot snare	(n) the bear was caught in a <i>foot snare</i>	G 818a
foot-snaring	(v) — <i>foot-snaring</i> is now legal	C 7.90(1)
forestland	(n) — one word	W
fork length	(n/adj) — two words	W
freeze-up	(n) the <i>freeze-up</i> occurred in (do not use as a verb)	W
fresh water	(n) most species live in <i>fresh water</i>	C 7.90(1); G 816a
freshwater	(adj) most <i>freshwater</i> species are	W; A
frost line	(n) — two words	A; R
full time	(n) we worked the <i>full time</i> allowed	W; R
full-time	(adj/adv) all worked <i>full-time</i>	W; R
furbearer	(n) — one word	W; A
G		
goodness of fit	(n) they examined <i>goodness of fit</i>	C 7.90(1); G 831a
goodness-of-fit	(adj) <i>goodness-of-fit</i> analysis	T; G 831a
grasslands	(n) — one word	W
greenbelt	(n) — one word	W
groundfish	(n/adj) — one word	W
groundwater	(n) — one word	W
H		
hand-held	(adj) <i>the hand-held</i> unit is	A; G 814, 816a
handmade	(adj/adv) — one word	A; W
handwritten	(adj) — one word	R
harvest per unit effort	(n) <i>the harvest per unit effort</i> was	T
harvest-per-unit-effort	(adj) — hyphenate, <i>the harvest-per-unit-effort</i> forms	
hard-on-bottom	(adj) <i>hard-on-bottom</i> trawling	T
harvest stock	(n) — two words	
hatchery stock	(n/adj) — two words	
hatchery-produced	(adj) — <i>hatchery-produced</i> chum salmon	C 7.90(1)
haulout	(n) — one word; the harbor seals' <i>haulout</i> site	T; G 803d
haul out	(v) — two words; the seals <i>haul out</i> on the rocks	T

Word	(Form) Example of Usage	Source ¹
herring sac roe fishery	(n) not <i>sac roe herring fishery</i>	T
headwaters	(n) one word	W; A
high-profile	(adj) — hyphenate	C 7.90(1)
high-ranking	(adj) — hyphenate	C 7.90(1); G 822a
high seas ³	(n/adj) — two words	R; W
homemade	(adj/adv) — one word	A; W
home page ³	(n/adj) — two words	A; G 801
home port ³	(n/adj) — two words	W; R
hydroacoustic	(n/adj) — one word (see <i>sonar</i>)	T

I

icebound	(adj) — one word, <i>icebound</i> seas	W
icecap	(n) — one word	W
ice field	(n) — two words	W
ice-free	(adj) — hyphenate, <i>ice-free</i> migration corridor	C 7.90(1)
ice-out	(n/adj) — hyphenate	W
ice pack	(n) — two words	W
in-depth	(adj) — hyphenate	A; R
in-house	(adj) — hyphenate	A; R
inperiod	(adj) — one word, <i>inperiod</i> closures are frequent	T
inriver	(adj) — one word	C 7.90(3); G 833a
in season	(n) the strategy <i>in season</i>	G 801
inseason ²	(adj) <i>the inseason</i> strategy	W
inshore	(adj) — one word	W; R
in-state	(adj/n) meaning <i>within the state</i>	C 7.90(1); G 813
instate	(v) meaning <i>to install</i>	W; R
instream	(adj) — one word	C 7.90(3); G 833a
inter (prefix)	(prefix) generally requires no hyphen	W
interim-use permit	(adj) modifies a noun	C 7.90(1)
intertidal	(adj) — one word	R; A
in utero	(adv/adj) — two words	W

L

lakeshore	(n/adj) — one word	A; R
land-and-shoot	(adj) the <i>land-and-shoot</i> concept	G 831b
land-based	(adj) <i>land-based</i> mammals	C 7.90(1)
landform	(n) — one word	W
land birds	(n) — two words	T
landlocked	(adj) — one word	W; A
landowner	(n/adj) — one word	W; A
late run	(see <i>early run</i>)	
lay off	(v) they will <i>lay off</i> three people	W
layoff	(adj/n) no <i>layoffs</i> will occur	W; R
legal size	(n) crab of <i>legal size</i> were	C 7.90; G 801
legal-size	(adj) <i>legal-size</i> crabs were	W; A; R
length-at-age	(n/adj) — hyphenate	C 7.90(1); G 804c
length-weight	(n/adj) — hyphenate	C 6.85; G 818b
length-weight	(adj) — use an en dash when two or more elements are open compounds or hyphenated compounds	C 6.85

Word	(Form) Example of Usage	Source ¹
life cycle	(n) — two words	W
life form	(n) — two words	W
life history ³	(n/adj) — two words	C 7.90; G 801
life stage ³	(n/adj) — two words	C 7.90; G 801
limited entry	(n/adj) — two words	T; G 801; 818a
long distance	(n) — from a <i>long distance</i> away	W
long-distance	(adj) — <i>long-distance</i> migration	A
long term (time)	(n) in the <i>long term</i>	G 801
long-term (-time)	(adj) the <i>long-term</i> effects	W; A; R
low-lying	(adj) — <i>low-lying</i> areas	W
M		
macrohabitats	(n) — one word	W
mail-out	(adj) — mail-out survey	W
mainstem	(n/adj) <i>mainstem</i> spawning grounds	T
mark-recapture	(adj) — use an en dash	G 806, 811a
mark-recovery ⁵	(adj) — use an en dash	G 814, 816a
meltwater	(n) — one word	W
microhabitats	(n) — one word	
mid ⁶	(adj)	R
mid eye to tail fork ⁷	(n/adj)	G 801
midpoint	(n) — one word	C 7.90(3)
mixed stock ³	(n/adj) — two words	T; G 818a
moving average ³	(n/adj) — two words	G 818a; T
multi (words)	(n/adj) — usually one word	C 7.90(3); G 833a; W
mudflat	(n) — one word	W
muzzleloader	(n) <i>muzzleloaders</i> were allowed in	A; R
muzzleloading	(adj) <i>muzzleloading</i> rifles were	A; R
N		
nearshore	(adj) the <i>nearshore</i> fishery was	W; R
net pen	(n) fry reared in <i>net pens</i> are	C 7.90(1); G 801
net-pen	(adj) <i>net-pen</i> rearing was	C 7.90(1); G 814, 816a
new-shell/old-shell	(adj) — use only as an adjective	C 7.86; G 816a
newsworthy	(adj) — one word	W; A
non (prefix) ⁸	(prefix) — words prefixed by <i>non</i> are usually one word	R; G 833a, 838
non-Alaskan ⁸	(n/adj) include <i>non-Alaskan</i> workers	G 838
nonindigenous ⁸	(adj) <i>nonindigenous</i> stock	G 833a
nonlocal ⁸	(adj) — one word	G 833a
non-Native ⁸	(n) — hyphenate when referring to nonaboriginal people of Alaska	G 838
nonnative ⁸	(adj) is a <i>nonnative</i> species in	W; G 833a
nonnavigable ⁸	(adj) <i>in nonnavigable</i> waters	G 833a
nonrural ⁸	(adj) — one word	G 833a
nonresident ⁸	(n/adj) — one word	A
northernmost	(adj) — one word	W

Word	(Form) Example of Usage	Source ¹
O		
odd-year	(adj) <i>odd-year</i> harvests have been	C 7.86; G 816a
off-road	(adj) — hyphenate	A
offshore	(adj) the <i>offshore</i> fishery was	W; A
off-site	(adj) <i>off-site</i> analysis	A
oilfield	(n) — one word	W
old growth	(n) the <i>old growth</i> is	C 7.90(1); G 801
old-growth	(adj) <i>old-growth</i> forests displayed	G 816a
on board	(adv) the man was <i>on board</i> when	C 7.90(2); G 831a
onboard	(adj) <i>onboard</i> processors will	A; R
ongoing	(adj) — one word	W; A
online ²	(adj) — one word	A
onshore	(adj) the <i>onshore</i> team set up	W; A
on-site	(adj) <i>on-site</i> investigation	A
outmigrate ^{2,9} (emigrate)	(v) salmon <i>outmigrate</i> when	A; G 833a
outmigrating ^{2,9} (emigrating)	(adj) the <i>outmigrating</i> fry were	A
outmigration ^{2,9} (emigration)	(n) during the <i>outmigration</i>	A
overfish, overharvest, overwinter, etc.	(v) — one word	W; G 833a
P		
<i>P</i> -value	(n/adj) — hyphenate, italicize <i>P</i>	T
parent year	(n) in the <i>parent year</i> , when	C 7.90(1); G 801
parent-year	(adj) <i>parent-year</i> numbers were	G 814
part-time	(adj/adv) offered a <i>part-time</i> position	W; G 816a
passthrough	(n/adj) <i>passthrough</i> funds were	R
paycheck	(n) — one word	W; A
payday	(n) — one word	W; A
pellet group	(n) — two words	C 7.90(1)
pellet-group	(adj) <i>pellet-group</i> survey	C 7.90(1)
personal use	(adj/n) the <i>personal use</i> fishery	G 818a
point of sale	(n) — three words	G 801c
point-of-sale	(adj) — hyphenate	C 5.92(1), 7.86
policy maker	(n) — one word	W
postaudit/preaudit ⁸	(n) — one word	C 7.90(3); G 833a
postfire ⁸	(adj) — one word	C 7.90(3)
posthunt ⁸	(adj) — one word	C 7.90(3)
postrecruit/prerecruit ⁸	(n/adj) — one word	C 7.90(3)
postseason/preseason ⁸	(n/adj) — one word	W; G 833a
poststatehood/prestatehood ⁸	(n/adj) — one word	C 7.90(3); G 833a
pot lift ³	(n/adj) — two words	G 801
preemergent/preemergence	(n/adj) — one word	W; C 7.90(3); G 833a, 835
preharvest	(n/adj) — one word	C 7.90(3)
prerelease	(n/adj) — one word	W; G 833a
present-day	(adj) — <i>present-day</i> events	W
presmolt	(n) — one word	C 7.90(3); G 833a
proofread	(v) — one word	W; R
put-and-take ⁹	(n/adj) — hyphenate	G 828b, 831b

Word	(Form) Example of Usage	Source ¹
Q		
quasi ¹⁰	(adj)	R
R		
radio collar ¹¹	(n) — two words	T; G 801, 811a
radiocollar ¹¹	(adj/v) — one word; to <i>radiocollar</i> goats	
radio tag ¹¹	(n) — two words; the <i>radio tag</i> stored the data	G 801
radiotag ¹¹	(adj/v) — one word; we <i>radiotagged</i> the birds	T; G 811a
radiotelemetry ¹¹	(n) — one word	T; G 811a
radiotelemetric ¹¹	(adj) — one word	G 801a
radiotracking ¹¹	(adj) — one word; they tested <i>radiotracking</i> devices	T; G 811a
radiotracked ¹¹	(v/adj) — one word; we <i>radiotracked</i> the bears	T; G 811a
radio wave	(n) — two words	T; G 801a
rain forest	(n) — two words	W
recolonize ¹²	(v) — one word	W
reef fish ^{2, 3}	(n) — two words	R
regionwide ⁴	(adj) — one word	C 7.90(2); G 820b
return-at-age	(n/adj) — hyphenate	C 7.90(1); G 804c
returns per spawner	(n) when <i>returns per spawner</i> are known	G 815a
return-per-spawner	(adj) <i>return-per-spawner analysis</i>	C 7.90(1)
ridge top ³	(n) — two words	T
right of way	(n) — three words	A
riverbank	(n) — one word	R
riverbed	(n) — one word	R
river mile ³	(n) — two words	T
river mouth	(n) fisheries at the <i>river mouth</i>	G 801
river-mouth	(adj) <i>river-mouth</i> fisheries	C 7.86; G 816a
roadside	(n/adj) a <i>roadside attraction</i>	W; R
rod hour ³	(n/adj) — two words	G 818a
roundtrip	(n/adj) — one word	A
rulemaking	(n) — one word	T
rump fat	(n/adj) — two words	T
run of origin	(n) we determined <i>run of origin</i>	C 7.86; G 831a
run-of-origin	(adj) <i>run-of-origin</i> determinations	G 831a
runoff	(n) — one word	W
S		
sac roe ³	(n/adj) — two words	G 818
salmon (ocean) ranching ³	(n) — two words	G 801
salt marsh	(n/adj) — two words	W
salt water	(n) live in <i>salt water</i>	W; A
saltwater	(adj) <i>saltwater</i> species may	W; A
same-day-airborne ⁹	(adv) — hyphenate	T
sandbar	(n) — one word	W
scale pattern ³	(n/adj) — two words	T; G 818a
seabed	(n) — one word	W
seabird	(n) — one word	W
seafloor	(n) — one word	W

Word	(Form) Example of Usage	Source ¹
sea duck ³	(n/adj) — two words	W; A
sea-fresh	(adj/v) — hyphenate	G 811a, 813
seagoing	(adj) <i>seagoing</i> trout are	W; A
sea level	(n) — two words	W
sea life	(n) — two words	W
sea run	(n) <i>the sea run was less</i>	G 801
sea-run	(adj) <i>sea-run</i> cutthroat trout are	W
seawater	(n/adj) — one word	W; A
seedstock ²	(n/adj) — one word	W
semiremote ¹³	(adj) — one word	W
shallow-water	(n/adj) a <i>shallow-water</i> trawl	G 816a
shell-aging ⁹	(adj) — hyphenate (see Section 6, <i>aging</i>)	G 811a
shellfish	(n) — one word	W; A
shellfishery	(adj) — one word	W; A
shorebased	(adj) — one word	T
shorebird	(n) — one word	W
shoreline	(n) — one word	W; A
short-lived	(adj) — it was a short-lived plan	W
short term	(n) <i>in the short term</i>	R; W
short-term	(adj) <i>short-term</i> memory	W
sightability	(n) — one word	T
size-selective	(n/adj) — hyphenate	G 820a
size (sex) selectivity	(n) <i>indicated size selectivity</i> was	G 815a
size-selectivity	(adj) <i>size-selectivity</i> bias was	
skip molt	(n) <i>skip molts</i> are usually	G 801
skip-molt	(adj/v) <i>skip-molt</i> crab are	G 811a, 816a
snowbound	(adj) — one word	W
snow cover	(n) <i>less snow cover</i>	A
snowdepth	(n) — one word	
snowfall	(n) — one word	W
snowfield	(n) — one word	W
snow line	(n) <i>above the snow line</i>	A
snowmachine	(n) — one word	G 805b
snowmelt	(n) — one word	W
snowpack	(n) — one word	W
soak-hour	(n/adj) — hyphenate	G 809a
socioeconomic	(adj) <i>the socioeconomic</i> trend	W; G 833a
soft shell	(n) <i>soft shells</i> were found	G 801
soft-shell	(adj) <i>soft-shell</i> crabs are	W; A
sonar (words) ¹⁴	(n) — two words, a <i>thermal recorder</i> was used	T
	(adj) — <i>side-scan</i> sonar, <i>thermal-chart</i> recorder	T
southernmost	(adj) — one word	W
spawned-out	(adj) <i>spawned-out</i> salmon	G
spawn on kelp (or roe)	(n) they harvested <i>spawn on kelp</i>	G 831a
spawn-on-kelp (or roe)	(adj) the pound <i>spawn-on-kelp</i> fishery	
spike-fork	(n/adj) — hyphenate	G 818b
sport fish	(n/adj) <i>sport fish</i> species	W; R
sport fishing	(v/adj) not <i>sportsfishing</i> , or <i>sportfishing</i>	W; C 7.90, G 805a
standby	(n/adj) — one word	W
statewide ⁴	(adj) — one word	W; G 820b
stock of origin	(see <i>run of origin</i>)	
streambank	(n) — one word	T
streambed	(n) — one word	A; R

Word	(Form) Example of Usage	Source ¹
streamflow	(n) — one word	W
stream life	(n) the <i>stream life</i> was	G 801
stream-life	(adj) <i>stream-life</i> studies	C 7.86; G 814, 816a
streamside	(adj) — one word	W
subadult	(n/adj) — one word	C 7.90(3)
subalpine	(adj) — one word	C 7.90(3)
subarea	(n/adj) — one word	C 7.90(3), R
subdistrict	(n) — one word	C 7.90(3)
sublegal	(n/adj) use <i>undersized</i> or <i>undersize adults</i>	T
subpopulations	(n) — one word	C 7.90(3)
subspecies	(n) — one word	C 7.90(3)
subtidal	(adj) — one word	C 7.90(3)
summertime	(n) — one word	W
Super Cub	(n) — two words	
system-wide	(adj) — hyphenate	C 7.90 (1)

T

tag-recovery ⁵	(adj) — use an en dash	G 814, 816a
tar balls ³	(n) — two words	R
thermal mark(ing) ⁵	(n/adj) — two words/no hyphen	G 827a
tidal flat	(n) not <i>tide flat</i>	A
tideland	(n/adj) — one word	W; A
tidemark	(n/adj) — one word	W; A
tide pool	(n) — two words	W
tidewater	(n/adj) — one word	W; A
tideway	(n/adj) — one word	W; A
timberline	(n) — one word	W
time frame ³	(n) — two words	A; R
timeline ³	(n) — one word	G 801
time series ³	(n/adj) — two words	W; R; G 818a
townet	(n/adj) — one word	W
t-test	(n/adj) — hyphenate phrase, italicize <i>t</i>	T
trade-off	(n) — the education vs. experience <i>trade-off</i>	W
trapline	(n) — one word	W
tree line	(n) — two words	W
treetop	(n) — one word	W
turn around	(v) when you <i>turn around</i>	W
turnaround	(n) the sudden <i>turnaround</i> caused	W; R

U

ultrasound	(n) — one word	W
underescapement	(n) — one word	G 833a
underway	(adj/adv) — one word	W; R
unitwide ^{2,3}	(n/adj) — one word	G 820b
unoiled	(adj) — one word	W
upriver	(adj/adv) — one word	W; A
up to date	(n) the data were <i>up to date</i>	G 813
up-to-date	(adj) the <i>up-to-date data</i>	
U.S./Canada	(adj) — use periods and a slash	T; C 6.113

Word	(Form) Example of Usage	Source ¹
W		
wastewater	(n) — one word	W
water bird(s)	(n) — two words	W; A
water body ³	(n) — two words	T
waterborne	(adj) — one word	W; A
watercourse	(n/adj) — one word	W; A
watercraft	(n) — one word	W
waterfowl	(n/adj) — one word	W; A
waterland	(n/adj) — one word	
watershed	(n/adj) — one word	W; A
webmaster	(n) — one word	W
web page	(n) — two words	G 847f
Web site	(n) — two words, for formal use capitalize Web site	G 847f
website	(n) — one word for informal use	G 847f
westside	(see <i>eastside</i>)	
widespread	(adj) — one word	W; A
wildfire	(n) — one word	W
wildlife	(n) — one word	
wild stock	(n/adj) — two words	T
wild type	(n) the <i>wild types</i> are	R, A
wild-type	(adj) <i>wild-type</i> descriptions	
windswept	(adj) — one word	W
wintertime	(n) — one word	W
workday	(n) — one word	W; A
worker-hour/worker-month	(avoid <i>man-hour/man-month</i> , see Section 11.3)	W; A; G 806
worker-hour (-month)	(n) — hyphenate	G 806a
workload	(n) — one word	W
work station ³	(n) — two words	R
Y		
year class ³	(n/adj) — two words	G 818a
year-round	(adj) — <i>year-round</i> growth cycle	G
yolk sac	(n) the <i>yolk sac</i> is	W; A
yolk-sac	(adj) the <i>yolk-sac</i> fry are	G 814
young-of-year	(n/adj) — hyphenate	American Fisheries Society

¹ Sources:

A *The American Heritage Dictionary of the English Language*, 4th edition. Houghton Mifflin Co. (2006).

G *The Gregg Reference Manual*, 10th edition. McGraw-Hill (2005).

C Chicago Manual of Style, 15th edition. University of Chicago Press (2003).

R *Random House Unabridged Dictionary*, 2nd edition. Random House, Inc. (1993).

T The word is not in the dictionary. This spelling is consistent with common technical usage or similar terms.

W *Webster's Third New International Dictionary*. Merriam Webster, Inc. (2002).

² The word is in the dictionary, but we decided not to use the dictionary spelling because it does not appear consistent with established usage within the profession or is inconsistent with similar terms also in the dictionary.

- ³ Do not hyphenate well-established common compound words used as nouns, like *age class*, or *brood year*; because these terms are easily grasped as a unit, they do not require a hyphen. Section 4 provides more details.
- ⁴ Words with the suffix *wide*, as in *coastwide*, *divisionwide*, *drainagewide*, *regionwide*, *statewide*, and *islandwide* are not hyphenated, except after proper nouns (Chicago-wide), after most words of three or more syllables (university-wide), or simply to avoid a cumbersome appearance.
- ⁵ Some stand-alone adjectives modify established compound nouns; with *gifted public orator*, for example, *gifted* modifies *public orator* (it is not *gifted public* that modifies *orator*). Likewise, *thermal mark code* or *thermal marking system* are not hyphenated because *thermal* presumably modifies *mark code* or *marking system*. Likewise, in noun/adjective use *coded* modifies *wire tag* and is not hyphenated. As a verb, however, it is really *coded wire tag-tagged*; *tag* is dropped to avoid needless redundancy, hence, *coded-wire-tagged*. If you have introduced the CWT abbreviation, you may use *CWT-tagged* (but never *CWT'd*). Another and often better verb is simply *tag/tagged*. However, with *mark* – or *tag-recovery data*, there is an en dash (denotes equal terms) because the compound is modifying *data*, so it would then become *thermal mark-recovery data*. As a general rule, when a compound noun is used as a compound adjective, the decision to hyphenate will depend on the familiarity of the reader with the item in question. Thus a term like *brood year chart* would not be hyphenated if you feel the reader is familiar with the concept of *brood year*. However if your reader could misinterpret the meaning of *brood year table*, write *brood-year table*.
- ⁶ *Mid* is a stand-alone word and combining form. *American Heritage* states that *mid* is normally joined to the following word or element without a space or hyphen: *midpoint*. However, if the second element begins with a capital letter it is separated with a hyphen: *mid-May*. ADF&G follows this policy, i.e., *midafternoon*, *midcourse*, *midday*, *midgut*, *midleg*, *midline*, *midmorning*, *midnight*, *midpoint*, *midrange*, *midship*, *midstream*, *midsummer*, *midway*, *midweek*, *midwinter*, and *midyear*. Gregg (Section 844) offers further guidance: Although a hyphen is not ordinarily used to set off the prefix *mid*, a hyphen normally follows *mid* in expressions involving numbers or capitalized word: during the *mid-sixties*, sailing in the *mid-Atlantic* in *mid-June*.
- ⁷ *Lengths from mid eye to tail fork (METF) were...* is the correct phrasing. Subsequently, use the acronym *METF*: *METF lengths averaged . . .* Avoid using *mid-eye-to-tail-fork lengths* or *mid eye to tail fork lengths*.
- ⁸ Words with the *non* or *post* prefix are seldom hyphenated unless they are combined with a word that normally begins with an uppercase proper noun (e.g., *non-Native*, *post-Vietnam*).
- ⁹ Jargon—consider using another term, or you may need to introduce and explain the term on first use unless addressing an audience familiar with the term.
- ¹⁰ *Quasi* is a stand-alone adjective used to modify nouns (*quasi contract*, *quasi population*). *Quasi* is also a combining form that is hyphenated to form an adjective or adverb (*quasi-essential*, *quasi-legal*, *quasi-normally*, *quasi-governmental*).
- ¹¹ *Radio-* words are either objects (nouns) or processes (adjectives or verbs). Objects are open (two words), and are not hyphenated, while processes have generally collapsed to the closed spelling (one word). For *radio* words, nouns serving as adjectives should retain their noun form (*radio wave pattern*), and participial adjectives (adjectives with -ed or -ing endings) should be one word (*radiocollared bear*, *radiotagging analysis*). For more examples see *radio-* words in Section 6 Watch-out Words.
- ¹² Prefix *re* should not be followed by a hyphen, except if needed to distinguish from words with same spelling but different meaning, e.g., to *re-side* my house, to *re-sign* the contract. When the prefix ends with “e” and the base word begins with the same letter, the hyphen is almost always omitted. Exceptions are *de-emphasize*, *de-energize*, *de-escalate*, *pre-engineered* and *pre-owned*.
- ¹³ The prefix *semi* generally follows the prefix/suffix rule of no hyphen, except when the prefix ends with an “i” or “a” and the base word starts with the same letter; in that case, use a hyphen to prevent misreading: *Ultra-active*, *intra-abdominal*, *semi-independent*, *anti-intellectual*, *multi-institutional*.
- ¹⁴ Sonar technologies have produced a number of compound words. As nouns, these should be two words; but as adjectives, hyphenate; e.g., *wide-beam echoes*, *parallel-beam study*, *side-scan sonar*, *pan-and-tilt transducer*, *cross-sectional area*, *dual-channel recorder*, *thermal-chart recorder*, *split-beam*, and *dual-frequency*.

4.2 Fishing Gear

Noun (Equipment)	Adjective	Verb	Noun (Person)
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NET WORDS

dip net	dip net ¹	(to) dipnet ¹	dipnetter
drift gillnet ²	drift gillnet ²	(to) drift gillnet	drift gillnetter
driftnet ²	driftnet ¹	(to) driftnet ¹	driftnetter
fyke net	fyke net ¹	NA	NA
gillnet ²	gillnet ¹	(to) gillnet	gillnetter
landing net	NA	NA	NA
set gillnet ²	set gillnet ¹	(to) set gillnet	set gillnetter ¹
setnet	setnet ¹	(to) setnet ¹	setnetter ¹
test net ¹	test-net ¹	NA	NA
trammel net	trammel net ¹	NA	NA

TRAP WORDS

fish trap	fish-trap ¹	NA	NA
minnow trap ¹	minnow-trap ¹	NA	NA

TROLL WORDS

dandyline ¹	dandyline	dandylining	dandyliner
NA	hand troll ¹	(to) hand troll ¹	hand troller ¹
NA	power troll ¹	(to) power troll ¹	power troller ¹

SEINE WORDS

beach seine	beach seine ¹	(to) beach seine ¹	NA
haul seine	haul seine ¹	(to) haul seine ¹	haul seiner
purse seine	purse seine ¹	(to) purse seine ¹	purse seiner

MISCELLANEOUS

crab pot ¹	crab pot ¹	NA	crabber
fishpound	fishpound ¹	NA	NA
fish wheel	fish wheel ¹	NA	NA
herring pound ¹	herring pound ¹	NA	NA
jig line		(to) jig, jigging, jig fishing	jig fisher ¹
longline	longline ²	(to) longline ¹	longliner

¹ Not in the dictionary (*The American Heritage Dictionary of the English Language, Random House Unabridged Dictionary* or *Webster's Third New International Dictionary*).

² The word was in the dictionary other than as shown here, but the committee opted to depart from the dictionary form. In such instances, the committee believed the dictionary form was not up to date and opted for a form more contemporary or consistent.

NA Inappropriate to use the word in this manner/form.

4.3 Hyphenating Nouns and Adjectives

Contemporary style minimizes hyphen use, except when needed to avoid ambiguity for the reader. Hyphens are used to separate numbers only when they are not inclusive, such as telephone numbers, Social Security numbers, and ISBN numbers.

Use this guide only when you cannot find the spelling in the dictionary or in this section. Determine the usage for the compound you are considering—noun, adjective, or verb. For a detailed analysis of compounds according to type refer to 7.90 in the *Chicago Manual of Style*, Sections 1 through 3, and the *Gregg Reference Manual*, Section 8.

a. Compound adjectives

Hyphens connect many compound adjectives, but not all. Hyphens are not used for compound nouns unless the noun is normally hyphenated (e.g., by-product, add-on).

Noun	Adjective
a gifted public orator	a slow-moving bear
a bifurcated cross section	cross-section diagram
an expensive by-product	a high-priced product
the harvest in an odd year	odd-year harvests

Usage-dependent adjectives can often be confusing. The confusion over compound adjectives often leave writers wondering whether to spell as two words, hyphenate, or close up as a single word.

Compound adjectives are hyphenated before the noun to clearly show that the two terms have become a single descriptor. Following the noun, ambiguity is unlikely, and the hyphen becomes unnecessary.

Before noun	After noun
a 200-yard bridge	a bridge 200 yards long
a 3-inch mesh gillnet	spacing on the gillnet mesh was 3 inches
a 50-year project	a project of 50 years
a 3-year-old moose	moose 3-years old (age terms are hyphenated in both noun and adjective forms)

Additionally, a number followed by an abbreviation of a measure is always open, and never hyphenated.

Use: 3 m stream Not: 3-m stream

b. Established compound nouns

In some cases, a compound adjective stands alone as a well-known compound word. In keeping with the trend to avoid unnecessary hyphens, established compounds are not hyphenated, unless it would cause confusion.

If the compound is not in the dictionary but is a technical compound word commonly used by your audience, treat it as an established compound noun and drop the hyphen, unless it would cause confusion.

Noun	Adjective
the high ebb tide	an ebb tide sample
targeted mixed stocks	the mixed stock fishery
the sea ducks were	sea duck regulations
Noun	Adjective
in this time series	the time series analysis
the standing crop	standing crop estimates
common property	a common property fishery
each brood year	brood year returns
the continental shelf	continental shelf break
sea ice in	sea ice edge

c. Meaning-dependent

Is the compound a noun or an adjective? For example, in the expression *positive level shifts*, *positive* is the adjective describing the compound noun *level shifts*, so no hyphen is needed. In the expression *level-shift outlier*, *level-shift* is a compound adjective describing *outlier*, so a hyphen is needed.

Noun	Adjective
a long term assignment (the term assignment is long)	a long-term assignment (the assignment is long term)
large vessel catch (the vessel catch was large)	large-vessel catch (catch by large vessels)

This sort of problem can occur with established compound nouns as well.

Noun	Adjective
high school attendance ¹ (high attendance at school)	high-school attendance ¹ (attendance in high school)
greater scaup nesting ¹ (greater nesting of scaup)	greater-scaup nesting ¹ (nesting by greater scaup)
small game reserves ¹ (small-sized game reserves)	small-game reserves ¹ (reserves for small game)

Section 5: Capitalization Help

Capitalization decisions are sometimes complex and subjective. The footnotes to the following table provide guidance for some of the thornier decisions. If a term is not addressed in the guide and you need to make a subjective decision, make sure you follow it consistently throughout the document and apply it consistently to other similar capitalization decisions.

Sources are listed at the end of this section.

Word	(Form) Example of Usage	Source ¹
A		
Arctic	capitalized when referring to the region— the <i>Arctic Circle</i> is lowercase when used as an adjective aligned with cold— <i>arctic weather</i> is	C 8.49; CSE 9.7.3; G 332
attorney general ²	<i>Attorneys General</i> Johnson and Smith the <i>attorneys general</i> met	C 8.30; G 312, 313
B		
bay	(see <i>sound</i>)	
board ³	the <i>board</i> met last week the <i>Board of Game</i> listened to	C 8.48; G 327
bush	the term <i>rural</i> is preferred.	
C		
capital improvement projects	<i>capital improvement projects</i> are	C 8.68; G 306
Central Alaska ^{4, 8}	in <i>Central Alaska</i> there are the <i>Central Region</i> has <i>central Alaska Range</i>	C 8.49; G 341
Chinook salmon	capitalize <i>Chinook</i>	G 309b
commissioner ²	when <i>Commissioner</i> Smith was Smith, <i>commissioner</i> of ADF&G <i>the commissioner</i> will not attend	C 8.25; G 312
Congress	capitalize	C 8.67; G 325
constitution	lowercase unless proper name: <i>U.S. Constitution</i> , or <i>Constitution of the State of Alaska</i>	C 8.86; G 346
council ³	(see <i>board</i>)	
D		
Delta Bison Range	bounded placename; see <i>hunt</i>	C 8.49; G 303

Word	(Form) Example of Usage	Source ¹
department ³	the <i>Department</i> of Fish and Game staff <i>department</i> staff recommended another <i>department</i> was created	C 8.68; G 326, 327
director ²	(see <i>commissioner</i>)	
district	the <i>district</i> catch was the <i>District 15</i> catch was the <i>Security Cove District</i> catch was	C 8.68; G 331
division ³	(see <i>department</i>)	
Donut Hole	harvests from the <i>Donut Hole</i> were	C 8.57; G 333a
drainage	lowercase	G 309b
Dungeness	capitalize	
E		
east	(placename) cities in the <i>East</i> are (compass direction) the sun rises in the <i>east</i>	G 338
east side ⁵	(proper name) the <i>Eastside</i> gillnet fishery (n) the gillnet fisheries on the <i>east side</i> (adj) the <i>eastside</i> gillnet fisheries	C 8.49; G 338
elect	he was the <i>governor-elect</i> (always lowercase)	G 317
emergency order	when <i>Emergency Order 1-Y-10-87</i> was the <i>emergency order</i> closed the	G 346
ex-	ex-Governor Hickel left the <i>ex-governor</i> left office (see Section 6, <i>ex/former</i>)	G 317, 1101
F		
fax	the <i>fax</i> arrived at 5:30 p.m.	G 356
federal	the <i>federal government</i> was the <i>Federal Reserve Board</i> lowered	G 328, 329
federal aid	lowercase unless used with proper title of program; i.e., <i>Federal Aid in Wildlife Restoration</i> (can introduce an abbreviation)	G 328
federal aid contracts	we mailed out the <i>federal aid contracts</i>	G 328
First Nation	capitalize; informal term used for indigenous inhabitants in Canada (e.g., <i>Tagish First Nation</i>)	G 348
First Nations	capitalize; legal treaty term for indigenous inhabitants (e.g., <i>Canadian First Nations</i>)	G 348
fiscal year	the <i>fiscal year</i> will end	G 308
Fish and Game Fund	revenue will come from the <i>Fish and Game Fund</i>	G 308
fishery	when the <i>gillnet fishery</i> was when the <i>False Pass fishery</i> was	C 8.2
fund	When referring to fiscal funds named in the state budget, capitalize: <i>Fish and Game Fund</i>	C 8.58; G 308

Word	(Form) Example of Usage	Source ¹
G		
general fund	the <i>general fund</i> shortfall	G 308
governor ²	Jones, the <i>governor of Alaska</i> , was <i>Governor-elect</i> Jones traveled the <i>governor</i> signed into law (see Section 6, <i>ex/former</i>)	C 8.25; G 312, 313
H		
herd	the Alaska Peninsula caribou <i>herd</i> (see Section 3.3)	G 309b
hunt	the Delta bison <i>hunt</i> was	G 309b
I		
Inside Passage	the ship traveled the <i>Inside Passage</i>	C 8.51; G 333a
Interior Alaska	species in <i>Interior Alaska</i> are <i>the Alaska Interior</i> is largely <i>the Interior</i> is largely	C 8.49 G 332
Internet	Last year, <i>Internet</i> use increased	G 303
ivermectin	refers to a class of broad spectrum antiparasitic medications, not a brand name	W
L		
legislature	<i>the legislature</i> adjourned on the <i>Alaska State Legislature</i> passed SB 513 the <i>1996 legislature</i>	G 327
lower ⁵	(actual placename) stocks in the <i>Lower Yukon River</i> (general area) the <i>lower</i> portion of the Yukon River	C 8.51, 8.58; G 337b
M		
N		
native	<i>natives of Alaska</i> (those born in Alaska) stocks <i>native to this area</i> were	G 348 C 8.41
Native	for indigenous inhabitants use: <i>Native</i> <i>American(s)</i> or <i>Alaska Natives</i> ; <i>Canadian First</i> <i>Nations</i> ; <i>Tagish First Nation</i>	G 348
news release	when <i>News Release 1-Y-10-87</i> was the <i>news release</i> closed the	G 346
north	(see <i>east</i>)	
North Atlantic/ Pacific/Pole	<i>North Pacific</i> populations are	C 8.51; G 341
North Pacific Rim	the maritime people of the <i>North Pacific Rim</i>	
North Slope	the populations on the <i>North Slope</i> were	C 8.51; G 333a

Word	(Form) Example of Usage	Source ¹
northern Alaska ⁴	the <i>northern Alaska</i> climate is	C 8.48, 8.51; G 341
northern Pacific Ocean ⁴	those in the <i>northern Pacific Ocean</i>	C 8.48, 8.51; G 341
northwest	direction of travel is <i>northwest</i> , <i>northwestern Alaska</i>	C 8;48, 8.49; CSE 14.1.1.4
P		
Pacific Northwest	the <i>Pacific Northwest</i> coastal region reported a	C 8.49, 8.51; G 341
Pacific Rim	trading with <i>Pacific Rim</i> countries	C 8.51; G 333a
Panhandle, Alaska	the ship made stops in the <i>Alaska Panhandle</i>	C 8.51; G 333a
permanent fund	an individual can receive one <i>permanent fund dividend</i> the <i>Permanent Fund Dividend Division</i> <i>Permanent Fund Dividend Program</i> <i>Alaska Permanent Fund Corporation</i>	G 308
Q		
R		
range	the <i>Delta Bison Range</i> was the <i>range</i> east of Tok	G 303, 331; C 8.58
refuge	the <i>Anchorage Coastal Wildlife Refuge</i> <i>the refuge</i> was selected because	G 331
Region	capitalize when used as a proper name: the <i>Central Region</i> has	C 8.49 C 8.57
river ⁶	(common noun) the flow in the <i>river</i> was (actual river name) the <i>Yukon River</i> flows west (applied to two or more names) the <i>Chilkat and Chilkoot rivers</i> flow	C 8.57
river basin/mouth system ⁶	compound noun, always lowercase; the <i>Yukon river system</i> , the <i>Yukon river mouth</i> ; <i>Yukon river basin</i>	C 8.57
S		
scuba	no longer capitalized (abbreviated for <i>self-contained underwater breathing apparatus</i>)	G 522a
section	A weir in the Northwest Stepovak <i>Section</i> The Ilnik and Port Heiden <i>sections</i> were	
sound	the <i>Prince William Sound</i> harvest was oil deposits in the <i>sound</i> were	G 331
south	(see east)	
Southcentral Alaska ^{4,8}	moose in <i>Southcentral Alaska</i> are deer found in <i>southcentral</i> areas of the range were	C 8.49; G 338, 341
Southeast Alaska ^{4,8}	the deer in <i>Southeast Alaska</i> are deer on the <i>southeastern</i> side of the mountain are deer in <i>Southeast</i> are	C 8.49; G 338, 341 G 332

Word	(Form) Example of Usage	Source ¹
state ⁷	and the <i>state</i> (or <i>State</i>) of Alaska was however, <i>New York State</i> (or <i>state</i>) was the <i>state</i> (or <i>State</i>) requested that	C 7.40, 8.58
stock	When <i>Togiak stock</i> entered the	G 309b
Styrofoam	trademark name, capitalize; use the term <i>polystyrene</i> unless referring specifically to the trademark product	G 356
subdistrict	(see <i>district</i>)	
Super Cub	capitalize; a <i>Super Cub</i> was used for the survey	Piper Aircraft
T		
Tanner crab	capitalize	
trans-Alaska pipeline	the <i>trans-Alaska pipeline</i> opened	C 7.90(3)
treaty	lowercase unless part of title: <i>Pacific Salmon Treaty</i> the <i>treaty</i> for U.S./Canada	G 346a
U		
upper ⁵	(see <i>lower</i>)	
V		
valley	Yukon River <i>valley</i> , Kahiltna and Sustina river <i>valleys</i> , Fraser River <i>valley</i> , Fraser <i>Valley</i> , Nile <i>Valley</i> ; the <i>valley</i> ; the Mississippi River <i>valley</i> , Death <i>Valley</i> , the Hudson River <i>valley</i>	C 8.58
village	the location of the <i>village of Kobuk</i> (not part of proper name); however, <i>Kobuk Village</i> employment (part of proper name)	G 334
Visqueen	capitalize; We used <i>Visqueen</i> in camp include disclaimer as this is a brand name for polyethylene film	G 356
W		
weir	the Chilkat River <i>weir</i> was	G 309b
west	(see <i>east</i>)	
western Alaska ⁴	The Seward Peninsula is in <i>western Alaska</i>	C 8.50; G 341
west side ⁵	(see <i>east side</i>)	
Westward ^{4, 8}	in the <i>Westward Region</i> there are in <i>Westward</i> there are	G 332
World Wide Web	always capitalize	G 303

X

Xerox	trademark name, always capitalize; avoid using as a verb in technical writing, use <i>photocopy</i> instead	G 356
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¹ Sources:

C *The Chicago Manual of Style*, 15th edition. University of Chicago Press (2003). The section number is in parentheses.

G *The Gregg Reference Manual*, 10th edition. McGraw-Hill (2005).

W *Webster's Third New International Dictionary*. Merriam Webster, Inc. (2002).

- ² Do not customarily capitalize titles of state officials when used alone (e.g., *commissioners*, *senators*, *attorneys general*), except when title is part of an individual's name (e.g., *Director Green*). These titles alone may be capitalized when there is a need for special emphasis; however, be consistent. Capitalize most high-ranking federal titles.
- ³ Normally, short forms of names of state or local governmental groups like *board*, *division*, *department*, *village*, and *council*, when used alone as a common name, are not capitalized. However, the short forms of national and international bodies and their major divisions, such as *Council* for NPFMC are capitalized. Whether upper- or lowercase, be consistent within a document (for more discussion see *The Gregg Reference Manual*, sections 326 and 327). Also, per *Chicago Manual of Style* 8.3, many proper names combine a given name with a generic term. After first mention, an official name is often replaced by the generic term alone, which (no longer strictly a proper name) may safely be lowercased. The Alaska Board of Fisheries can be referred to in direct context as the "board" and The Alaska Department of Fish and Game can be, in direct context, referred to as "the department."
- ⁴ Nonspecific (unbounded) regions or areas of Alaska and similar proper geographic names are generally lowercase—e.g., *central Brooks Range*; *southeastern*, *western*, and *northern Alaska*; *northern Pacific Ocean*. However, some regions, especially those with geographic distinctiveness, have developed placename status; these include *Southeast Alaska*, *Interior Alaska (the Interior)*, *Central Alaska*, and *Southcentral Alaska*. ADF&G administrative regions are always capitalized because they are proper names: *Southeast Region*, *Southcentral Region*, *AYK Region*, *Westward Region*.
- ⁵ Capitalizing words like *upper*, *lower*, *east*, *middle*, etc., depends on whether they are part of an actual placename or simply denote a general area or location. If, for example, the upper area of the Yukon River had established boundaries representing a very specific region of the river, then *Upper Yukon* would be appropriate. If it were more of a general area, then it would be best to use *upper Yukon*. The same holds true for *west side* and *east side*.
- ⁶ *River* can be a common noun (lowercase) or part of a river's proper name (capitalized). When the generic term *river* comes second and applies to two or more names, it is lowercased (*Yukon and Kuskokwim rivers*). However, *river system*, *river basin*, or *river mouth* are compound common nouns (lowercase) and are never part of a river's proper name. In the example, *Yukon river system*, *Yukon* is a proper-name adjective (capitalized) modifying the common compound noun *river system* (lowercase). Additionally, *Yukon* is actually a truncation of *Yukon River*, so to avoid redundancy, one should say *Yukon river system* instead of the *Yukon River river system (river mouth)*. The proper name *River* is dropped rather than the common name *river*.
- ⁷ Use "state of Alaska" for all uses except when referring specifically to the governmental body; for example, *The State of Alaska is considering a comprehensive health plan for residents*, or *The State of Alaska must place at least 25 percent of all oil royalties in the permanent fund*. The short form, *state* alone, should not be capitalized unless the lack of capitalization would produce ambiguity. *In the state of Alaska, many communities can be accessed only by boat or airplane*.
- ⁸ The stand-alone form should not be used in technical or formal writing.

Section 6: Watch-out Words

This list and explanations for correct usage of some problematic words will help you minimize common writing mistakes. *The Gregg Reference Manual* has excellent guidance in Section 11, addressing word usage; also see Appendix D, References Cited.

A

affect/effect/impact

Affect is normally used as a verb meaning to influence, change, or modify. *Effect* is normally a noun; it is also a verb meaning to bring about. When you *affect* something, you have an *effect* on it.

Use: The decision will not *affect* the outcome. [influence, change or modify]
 This will *effect* a restructuring of the department. [to bring about]
 The regulation takes *effect* on November 20, 2011.
 The weather has had a major *effect* on migration patterns. [noun]

Impact as a verb means strike with a blow or to pack firmly together.

Use: The wisdom tooth *impacted* the molar.

Impact as a noun means a collision.

Use: The *impact* of the car into the tree killed all the occupants.

Avoid incorrectly using *impact* as a verb in place of *affect* or as a noun in place of *effect*.

Avoid: The moisture level *impacts* the growth rate. [used as a verb in place of *affect*]

Avoid: The *impacts* of dumping industrial waste on surrounding wildlife are significant. [used as a noun in place of *effect*]

aging/ageing

Although commonly used in biological writing, *aging* is not recognized by any dictionary as meaning the determination of age, so the public and international audiences may interpret the word to mean the process of growing older, which is the dictionary definition. Therefore, use *aging* with caution, or define parenthetically on first mention. Also, the British spelling, *ageing*, is not recommended.

Alaska/Alaskan

Alaskan is commonly misused when *Alaska* is the correct term. *The Associated Press Stylebook for Alaska* explains that *Alaskan* is a noun referring to a person who lives in Alaska. It is never an adjective except in a proper name.

Use: Alaska vacation Alaska lifestyle Alaskans prefer Maui
 Avoid: Alaskan vacation Alaskan lifestyle

allocate/apportion

Use these words when you or others do the apportioning or allocating (e.g., *allocation* plans for fisheries or hunts). Do not use the words when you are trying to estimate the proportions or parts of a natural population (e.g., ...the run was *allocated* to user groups by) because we are not *allocating* or *apportioning* the parts or components of the population—the populations themselves are.

Use: We estimated hatchery *portions* of the run.

all right/alright

Like *all wrong*, the expression *all right* should be spelled as two words. *Alright* is nonstandard.

alternate/alternative

As nouns, the difference between these terms is clear. When these words appear as adjectives, some find their usage confusing. As a verb or adjective, *alternate* means occurring in turns or every other one, and *alternative* is a noun meaning possibilities.

Use: We *alternated* day and night observations.
The team discussed six *alternative* sites for the weir.
We rejected the *alternative* hypothesis.

6

among/between

Use *among* when comparing three or more. Use *between* when comparing two.

and/or

Avoid using this term. *And/or* is used when two items can be taken either jointly or separately. The form *and/or* may be appropriate in legal or other kinds of writing where redundancy is not important, but this form should not be used in educational, informational, or scientific and technical writing. Reword the sentence instead.

Use: Recent advances in molecular biology should be useful to geneticists, bacteriologists, or both.

Avoid: Recent advances in molecular biology should be useful to geneticists and/or bacteriologists.

appraise/apprise

Appraise means to evaluate. *Apprise* means to inform.

as/because/since

Use *as* when signifying a comparison (for instance) or a degree of equality (to specify a relationship). Use *because* to mean for the reason that. Use *since* in a temporal sense, not as a synonym for *because*. *As* cannot be used as a synonym for *because*; it is not a clause of reason.

- Use: The season was closed *because* population levels were low. [for the reason that]
 Avoid: The season was closed *since/as* the population levels were low. [*since* is temporal, *as* is not a clause of reason]

Ambiguity is not evident in the first example, so using *because* simplifies reading. In the second example you need the rest of the sentence to determine whether *since* has a temporal meaning or is being used as a synonym for *because*.

- Use: The fishery, as an early-season entry in the area, opened May 15. [for instance; degree of equality]
 The fishery has been open *since* May 15. [temporal]
 The fishery opened May 15 *because* the managers wanted to supply an early-season opportunity. [clause of or reason]

as/ like

Like is correctly used as a preposition. Although *like* is also widely used as a conjunction in colloquial speech, use *as*, *as if*, or a similar expression in written material.

- Use: Duck hunting, *like* deer hunting, requires a great deal of skill.
 The moose calf looks *as if* it has not eaten in days.

assure/ensure/insure

All three words have essentially the same meaning. However, when referring to financially guaranteeing life or property, use *insure* exclusively. *Assure* should only be used when it refers to a person (e.g., to *assure* someone). Use these two words only in these limited senses. In most of our writing, therefore, *ensure* will be the correct choice.

- Use: I assure you we will finish on time. [to set a person's mind at ease]
 I want to ensure we do this correctly. [to make certain]

Athabascan/Athabaskan/Athapaskan

Athabascan is the preferred spelling. Previously, the Alaska Native Language Center used *Athabaskan* as linguists do not like using a *c* for the *k* sound because in English *c* can also be pronounced like an *s*. Although the *Smithsonian Handbook* uses *Athapaskan*, ADF&G writers should use *Athabascan*, following the lead of the Alaska Native Language Center.

average/mean/median/midpoint

The *mean* and the *average* are interchangeable synonyms, meaning the arithmetic average of a set of measurements. The *median* is a value or quantity lying at the midpoint of either a frequency distribution or a set of observed values or quantities. The *midpoint* is the point of a line segment or curvilinear arc that divides it into two parts of the same length.

awhile/a while

The meaning of *awhile* is for a period; *for* is part of the meaning. Consequently, it is redundant to write *The policy will work for awhile*. As a preposition, *for* can introduce *a while*, but must not be used to introduce *awhile*.

Use: The policy will work awhile. [The policy will work for a period.]
The policy will work for a while.

Avoid: The policy will work for awhile. [redundant, *awhile* means for a period]

B**because**

See *as/because/since*.

between

See *among/between*

bi/semi

Bimonthly and *biweekly* can mean either every two months/weeks or twice a month/week. *Semimonthly*, on the other hand, means twice a month. If the words must be used, use *bimonthly/biweekly* for every two months/weeks and *semimonthly/semiweekly* for twice a month/week.

Also, note that *biannually* means two times a year and *biennially* means every two years.

bush/rural

Rural is the preferred term.

bycatch/harvest/incidental catch/take

Use *bycatch* only as a noun or adjective. Never use as a verb.

Use: crab incidentally harvested in cod pots

Avoid: crab bycaught in cod pots

Use: Last season, Chinook salmon *bycatch* was reduced in the Bering Sea.

Avoid: In 1999 and 2000, fewer Chinook salmon were *bycaught* in the Bering Sea.

Agency definitions for these terms may differ. Federal marine mammal regulations, for example, define *take* as harvest plus struck and lost. The Alaska Administrative Code definition of *take* includes *pursuit*, among other activities. Careful authors will be aware of the ambiguities and define their terms early in the publication.

C**calf**

Use *calf* when writing about moose or caribou only when the animal is less than one year old.

complement/compliment

Complement means something that completes or brings to perfection. *Compliment* means an expression or act of courtesy or praise.

Use: These findings *complemented* their study. [completes]

Use: We *complimented* Terry on her brilliant speech. [act of courtesy or praise]

compose/comprise

Compose means to make up or create by putting together parts or elements. *Comprise* means to include, contain, consist of. The parts compose (make up) the whole; the whole comprises (includes) the parts; the whole is composed of (never is *comprised* of) the parts.

Use: ADF&G *comprises* [consists of] six major divisions.

Six divisions *compose* [make up] ADF&G.

ADF&G is *composed* of [is made up of] or *comprises* [includes] six divisions.

concern/stock¹/stock of concern

ADF&G writers must often use technical or specialized jargon and various terms of art that are particular to people involved in our fisheries. If the writer is talking about a salmon *stock* that someone has expressed a *concern* over, then *concern* can express our need to closely monitor the stock, or *concern* can mean something much more specific and defined in regulation. There is a formal process leading up to an Alaska Board of Fisheries finding of *stock of concern*, as jargon, for stocks with escapement goals. There are specific legal definitions for *yield concern* (inability to maintain yields or harvestable surplus above escapement needs) *management concern* (inability to maintain escapements within the bounds of a biological escapement goal, sustainable escapement goal, or optimal escapement goal) and *conservation concern* (inability to maintain escapements above a sustainable escapement threshold). Each level of *concern* triggers very specific management actions.

When discussing *concern* and *stock of concern*, we are using terms of significant interest to large numbers of people in the public, permit holders, and processors who pay very close attention to the formal *stock of concern* process and findings. Because in the context of Alaska salmon fisheries management and research the terms *concern* and *stock of concern* have such specific technical meanings, it is not appropriate to use these terms in their commonly used way when referring to salmon stocks. Writers should reserve those terms for their specialized meaning, and find other terms to express their interest or anxiety about a stock.

continual/continuous

Continual means intermittent, but frequently repeated. *Continuous* means without interruption.

Use: The weir was *continually* monitored inseason; for specific dates see Table 5.

Nutrients were *continually* added to the fish tank.

The fish tank leaked *continuously* until we were able to repair it.

D**data/data point**

The singular form of *data* is *data point* and the plural is *data*. Although *data* as a singular is allowed in popular writing, this should not be used in technical writing. The term *datum* is no longer used.

Use: Data are gathered for the lower drainages.
 Avoid: Data is gathered for the lower drainages.

different from/different than

Use *different from* for comparison between two persons or things. Use *different than* when the object of comparison is expressed by a full independent clause.

Use: My report is *different from* yours. [between two persons or things]
 The department is *different than* it was 20 years ago. [object of comparison is expressed by a full clause]

discreet/discrete

A *discreet* person is cautious and prudent and exercises good judgment. *Discrete* means separate and distinct, as *discrete* stocks of fish.

dominant/predominant

Both can be used as adjectives or verbs having similar meanings relating to power, influence, authority, or superiority. *Predominant*, however, is the better choice when referring to greater prevalence in numbers.

E**each other/one another**

Use *each other* to refer to two persons or things. Use *one another* for more than two.

Use: The two candidates seem to enjoy insulting *each other*.
 The three candidates compete with *one another* for space on the front page.

e.g./for example/i.e./that is

The abbreviation *e.g.* is derived from the Latin term *exempli gratia*, meaning for example. The abbreviation *i.e.* comes from the Latin term *id est*, meaning that is. When using either of these terms, always put a comma after the second period.

Use: The primary guide (i.e., [that is] Alaska Department of Fish and Game Writer's Guide) will be followed.
 There are many books providing standards for writing (e.g., [for example] Chicago Manual of Style).

ensure

See *assure/ensure/insure*.

Eskimo

Eskimo is considered derogatory in Canada, but not in Alaska. *First Nations* or *Native* is preferred in Canada. *Inupiat* is used instead of *Eskimo* for people of northwest Alaska, *Aleut* and *Alutiiq* for peninsula-region people, and *Yupik* for southwest Alaska and St. Lawrence Island peoples.

ex-/former

Ex- should be used to refer to the person who immediately preceded the current titleholder (*ex-husband*); *former* refers to an earlier title-holder (*former President Ford*).

See also *former/latter*.

experimental fishery/fish population sampling/sample fishery/test fishery

Under Alaska Statute 16.05.050(a)(9), the commissioner can allow an *experimental fishery*. An *experimental fishery* permits fishermen² to try out new vessels, gear, or techniques on a case-by-case and experimental basis.

A *sample fishery*, or *fish population sampling*, is a method by which biologists estimate fish populations or contribution rates (i.e., wild vs. hatchery returns) using methods such as mark-recapture, coded wire tagging, or thermal marking.

Test fishery is an Alaska term for the experimental fisheries often run pre-season or throughout a given season to monitor run strength and timing. The commissioner has the authority to designate a test fishery using any kind of gear at any time under Alaska Statute 16.05.050(a)(5) and to sell the fish caught under Alaska Statute 16.05.050(a)(14). *Test fisheries* are also occasionally conducted to generate revenue to offset management costs, and are conducted by ADF&G employees or contractors. Depending on the type of test fishery, the catch may be retained or released. If retained, it is sold to the highest-bidding processor or given to the contractor as payment. The term should always be parenthetically defined. Do not use this term to describe any sort of fish population sampling conducted by department staff. That is, fish population samples should be called that, or something similar, not *test fisheries* or *test catches*.

F

factor of/-fold/percentage/times

Quantifications for increases and decreases from an original value are frequently expressed incorrectly. When using percentage (%) to indicate an increase or decrease, the base must be subtracted. When percentage is used correctly it is often misunderstood.

In the following examples of an increase, the starting average equals 7 cm and the average increases by 14 cm to 21 cm.

Use: A 300% increase... [Unless you need to focus on the amount of the increase itself, it may be best to reconstruct, focusing instead on how the average changed: The average increased 300% (or 3-fold).]

- Use: The final average was 3 times (or 3-fold) the initial average.
The final average was 3 times the initial average of 7 cm.
The final average was 300% of the initial average.
- Avoid: The average increased by a factor of 3 (or by 3 times). [This says the average increased by 3×7 (the base) or by 21; that would mean the new average was $7 + 21$, or 28.]
- Avoid: A 300% (3-fold) increase in the average was noted. [The increase was 14 (200%), not 21 (300%).]
- Avoid: The average increased by a factor of 2 (or by 2 times). [This statement is correct: the average increased by 2×7 or 14. However, it may be misunderstood; readers could assume the new average was 14, not 21.]

farther/further

Farther refers to distance only. Use *further* in all other cases.

- Use: *Farther* upriver we found the beaver dam.
This finding *further*s our hypothesis.
This finding should be *further* analyzed.

fish hook/single hook(n)/single-hook(adj)

According to ADF&G sport fishing regulations, a *single hook* is a hook that has only one point, with or without a barb. If referring to terminal tackle in general, use *fish hook* unless you know the angler specifically used a *treble hook*, or a *single hook*, or some combination. A *treble hook* is legally referred to as a *multiple hook*. A *multiple hook* is a fish hook with two or more points, with or without barbs.

fewer/lesser

Use *fewer* when referring to countable items; use *lesser* for amounts that are not countable.

forgo/forego

Forgo means to abstain from or give up or abandon. *Forego* is an alternate spelling; *forgo* is the preferred spelling.

- Use: We will *forgo* the test fishery this year.
The director was willing to *forgo* travel to save money.

G

gauge/gage

A *gauge* is an instrument for or a means of measuring a dimension or for testing mechanical accuracy, or an instrument with a graduated scale or dial for measuring or indicating quantity. *Gage* is an alternate spelling. *Gauge* is the preferred spelling; however, when referring to interagency documents it is important to be consistent with use of the term.

H**handheld line/handline**

The terms are synonymous. Do not confuse these terms with *hook and line* or *rod and reel*.

harvest

See *bycatch/harvest/incidental catch/take*.

herring sac roe fishery/sac roe herring fishery

The preferred term is *herring sac roe fishery*. Despite the fact that the only sac roe fishery currently authorized is for herring, ADF&G prefers to have *herring* modify *sac roe* or *sac roe fishery*.

historic/historical

Historic refers to noteworthy events in history. Use *historical* when referring to past events in a cumulative or generic sense.

Use: the *historic* enactment of ANILCA set
 the *historical* migration period has been

hook and line/hook and a line

A *hook and line* is handheld, with the line attached to a pole or rod which is held in the hand or closely attended. *Hook and line* is the preferred term.

hybrid crosses

When depicting hybrid crosses, use the following formats: *Chionoecetes bairdi* × *Chionoecetes opilio*; or *C. bairdi* × *C. opilio*; or Tanner crab × snow crab. The female partner is always first (left of ×).

I**ice fishing/fishing through the ice**

The terms are synonymous. *Ice fishing* (verb) is a title, *fishing through the ice* is a description.

i.e./that is

See *e.g./for example/i.e./that is*.

imply/infer

Imply means to suggest. You imply something by your own words or actions.

Use: Victor *implied* [suggested] that data would be available.

Infer means to assume, to deduce, to arrive at a conclusion. You *infer* something from another person's words or actions.

Use: I *inferred* [assumed] from Victor's remarks that we would never see that data.

incidence/prevalence

Incidence is a particular percentage at a point in time (one data point). *Prevalence* is a rate over time (several data points).

incidental catch

See *bycatch/harvest/incidental catch/take*.

Indian/Native

When *native* is capitalized, it refers to an Alaskan who is Indian, Eskimo, Tlingit, or Haida.

insure

See *assure/ensure/insure*.

Inupiaq/Inupiat

Inupiaq is the name of the Eskimo language of Northern Alaska that is spoken from Unalakleet to the Canada border. It is also an adjective or a singular noun. *Inupiat* is the plural form. In referring to several people from Barrow, you would say "these *Inupiat* speak *Inupiaq*" (Alaska Native Language Center, UAF).

Use: An Inupiaq person from Barrow. [a singular noun (one person)]
People from Barrow are *Inupiat* [plural adjective], and speak *Inupiaq*.

irrespective/regardless

Irrespective and *regardless of* (not *irregardless*) are synonyms meaning ignoring.

Use: equal rights for all, *irrespective of* [regardless of] class or race.

its/it's

Its is the possessive form of *it*, whereas *it's* is the contraction for *it is*.

Use: The moose injured *its* foot on the fencing.

L

latter/former

For a table or figure reference you must specifically reference that table or figure. Do not use the phrase *the following table* in technical reports. Avoid the words *latter* and *former* whenever possible. They force the reader to stop and search back over previously read material to locate the intended reference. Avoid the phrases *see above* or *see below* for the same reason.

See also *ex-former*.

lesser

See *fewer/lesser*.

lie/lay

The following is taken from *The Gregg Reference Manual*.

Lay (principal forms: *lay, laid, laying*) means to put or to place. This verb requires an object (noun/pronoun) to complete its meaning.

Use: Please *lay* the boxes on the pallets with extreme care.
I *laid* the message right on your desk.
He had *laid* two other notes there yesterday.
He is always *laying* the blame on his assistants. [Putting the blame.]

Lie (principal forms: *lie, lay, lain, lying*) means to recline, rest, or stay or to take a position of rest. It refers to a person or thing as either assuming or being in a reclining position. This verb cannot take an object (noun/pronoun).

Use: Now he *lies* in bed most of the day.
The mountains *lay* before us as we proceeded west.
This letter has *lain* unanswered for two weeks.
Today's mail is *lying* on the receptionist's desk.

In deciding whether to use *lie* or *lay* in a sentence, substitute the word *place, placed, or placing* (as appropriate) for the word in question. If the substitute fits, the corresponding form of *lay* is correct. If it does not, use the appropriate form of *lie*.

Use: I will (lie or lay?) down now. [You could not say *I will place down now*. Therefore, write *I will lie down now*.]
I (laid or lay?) the pad on his desk. [*I placed the pad on his desk* works. Therefore, write *I laid the pad*.]
I (laid or lay?) awake many nights. [*I placed awake* does not work. Write *I lay awake* (past tense of lie).]
These files have (laid or lain?) untouched for some time. [*These files have placed untouched* does not work. Write *These files have lain untouched*.]
He has been (laying or lying?) down on the job. [*He has been placing down on the job* does not work. Write *He has been lying down*.]

like/likely

Like is correctly used as a preposition. Do not use *like* as a conjunction, instead use *as, as if* or a similar expression.

Use: Rockfish, *like* other reef fishes, are found in deep water.
Rockfish are found in deep water, *as* are other reef fishes.
Companies such as Dell and Cisco [refers specifically to Dell and Cisco]
Companies *like* Dell and Cisco [refers to other companies that are like Dell and Cisco but not specifically to those two companies]

Avoid: The exvessel value was lower this year, *as* {not *like*} we were expecting.

Avoid using *likely* as a substitute for *probably*. Avoid using *likely* as an adverb unless it is immediately preceded by a modifier, such as *very likely*, *most likely*, etc.

Use: The deer, which *probably* are found near the beach, may starve.

Avoid: The deer, which *likely* are found near the beach, may starve.

Use: The deer, which *very likely* are found near the beach, may starve.

M

mean/median/midpoint

See *average/mean/median/midpoint*.

multiple hooks

See *single hook*.

P

Pacific herring (or Pacific halibut)

Use *Pacific herring* and the scientific name on first usage in the document. Use just *herring* thereafter (exception: if your document involves both Atlantic and Pacific herring, the qualifier will probably be needed throughout). Also, the following terms should be used when characterizing herring populations and fisheries.

Use: run biomass – harvest or catch = escapement biomass [for herring use]
run – harvest or catch = escapement [equivalent in salmon]

Note: The *run* and *run biomass* are composed of mature fish that are participating in spawning, and excludes immature fish remaining at sea. Therefore, when referring to an entire herring or salmon population consisting of both the mature and immature fish, use *total population*.

parameter

Use *parameter* only as a mathematical variable or constant. Avoid using this word as a synonym for a characteristic element or a fixed limit or boundary.

Use: We were able to define limits of use for depth, velocity, and substrate conditions but could not demonstrate statistically significant preferences within each parameter.

Growth of Fielding Lake Arctic grayling was successfully modelled with a two-parameter version of the von Bertalanffy growth equation.

Parameter estimates of allometric length-weight relationships ranged between 6.16 and 8.54 for parameter *a*, and between 2.71 and 3.37 for parameter *b*.

Avoid: The stream data was within the parameters of the investigation. [a fixed limit or boundary]

percent/percentage/percentage points

Use the written word for general audiences, department correspondence, and in table headings. Use the percent symbol (%) for scientific audiences when associated with a number.

The noun *percentage* is not interchangeable with *percent*; *percent* means per hundred (25% is 25 per 100), whereas *percentage* refers to a quantity or rate expressed as the unit *percent* (the percentage used was 25%), or a fraction or ratio with 100 understood as the denominator. Also, the difference between 7% and 15% is not 8% but 8 *percentage points*.

Use: Only 25% of the bears found in Anchorage are reliant on human produced food sources. (number per 100 units)

The percentage of bears found to rely on human food sources was 25%. (a quantity expressed as a unit percent)

In a table, a column of figures representing percentages may be headed *Percent of Total* or *Percent of Catch* or a similar designation. When the column or row header designates data as percentages, it is not necessary to append the symbol to numbers within that column or row (CSE 2006; Gregg 2005).

See also *factor of /-fold/percent symbol/times*.

predominant

See *dominant/predominant*.

plant/release/stock/transplant

A lake or stream is *stocked* with fish, but fish are *planted* into a lake or stream. A lake or stream is *stocked* or *planted* with fish through the act of *releasing* them. Use *transplant* rather than *plant* when you want to reinforce that fish being planted originated from a source other than the source being stocked.

Note: Do not use transplant for animals and birds; instead, use or *reintroduce*.

prevalence

See *incidence/prevalence*.

principal/principle

Principal is an adjective or a noun used in law or finance, but in general use it refers to a person holding a high position. It is usually the correct word to use when *principle* is not what is meant. *Principle* is a noun meaning rule of conduct, especially of right conduct.

Use: Principal land managers include private individuals, U.S. National Park Service, U.S. Forest Service, Native corporations, and the State of Alaska.

We moved the weir, following the principle that a clear channel supports better fish counts.

Q

quasi

Quasi is a prefix that indicates to a degree or to some extent. Avoid using this term for half as in a semicircle or semimonthly; instead, refer to *bi/semi*. *Quasi* is a stand-alone adjective used to modify nouns (*quasi contract*, *quasi population*).

Quasi is also a combining form that is hyphenated to form an adjective or adverb (quasi-essential, quasi-legal, quasi-normally, quasi-governmental).

R

radio- words

Radio- words are either objects or processes. They may be spelled as one word or two, or even hyphenated. The spelling of *radio-* words is highly stable and follows common and powerful language principles. Along with the examples, the language principle that determines the spelling is explained. When in doubt, look up your *radio-* word in the dictionary to find the “agreed upon” spelling. If you do not find it in the dictionary, feel confident that you can spell it using one of the models presented here.

Radio- words representing a process

Radio- words signifying processes are spelled as one word.

Use: We *radiotagged* 69 adult sockeye salmon to document lake spawning. [verb]

We *radiocollared* the caribou in the fall. [verb]

The *radiocollared* caribou were included in the spring survey. [participial adjective]

Radiocollaring black bears assisted our understanding of cub size. [noun as subject of sentence]

Radiotagging the salmon was more expensive this year. [noun as subject of sentence]

Radio- words signifying objects

In words that do not signify processes, *radio-* words are generally spelled as two words.

Use: The *radio wave* was interrupted by lightning.

We found a *radio tag* in the rainbow trout’s abdomen. [sentence is about the tag as an object rather than about the process of radiotagging]

When the combining form *radio-* is used to form an action verb or an adjective that describes a noun following it, spell the word as one.

Use: The *radiocollared* bear crossed the glacier several times. [adjective]

We tested *radiotracking* devices. [adjective describing the noun devices]

The *radiotagging* analysis turned up some unexpected results. [adjective describing what kind of analysis]

Over 10% of *radiotagged* fish reached known spawning areas. [adjective describing which fish]

Avoid: All *radio tagged* fish resumed upstream movement after tagging. [adjective describing a noun, should be one word]

Adjectival *radio-* words spelled with a hyphen

In some *radio-* words, a hyphen is used to break apart noun strings in order to emphasize a main noun (topic). With three nouns in a row (radio wave pattern), often the first two are hyphenated to modify the third. When the first two nouns are hyphenated, their function changes from a noun to a compound adjective.

Use: *radio-wave* pattern [compound adjective] a *pattern of radio waves* [noun]
 radio-tag implant [compound adjective] an *implanted radio tag* [noun]

When compound adjectives made from nouns come before another noun, you hyphenate the describing pair to emphasize the noun you are describing. There is very little chance for ambiguity when two nouns working together follow the noun they describe, so there is generally no need for a hyphen in that instance. For more detailed information on compound adjectives see Section 4.3 Hyphenating Nouns and Adjectives.

raise/rise

Raise means moved upward by someone or something, not of its own volition.
Rise means to move upward by itself or upon its own volition.

random

Use *random sample* only in its strict statistical sense; i.e., every possible individual sample has an equal probability of being selected.

regard/regards

When used to mean *consider*, *as* should be used. Do not follow *regards* with an infinitive.

Use: He *regards* it as dishonest. [used to mean *consider*]
 The department *regards* this report as the most comprehensive source of sport fishing information. [used to mean *consider*]

Avoid: He *regards* it to be dishonest. [followed with an infinitive]

The terms *with regard to* and *in regard to* mean with reference to. Do not use *regarding* and *in regard to* for introducing a subject. As a noun, use the plural *regards* only in the formal expression.

Use: A budget analysis is also presented *with regard to* the cost of maintaining a fully developed interactive information access system. [with reference to]

Avoid: *Regarding* the budget analysis presented, the cost of maintaining a fully developed interactive information access system is prohibited. [with reference to]

Use: Give my *regards* to the commissioner. [formal expression]

regardless

Use *regardless* to mean in spite of everything. Do not use *irregardless*, which is nonstandard and a double negative.

Use: Anglers were selective towards harvesting fish greater than 300 mm in fork length regardless of age or sexual maturity.

See also *irrespective/regardless*.

relation/relationship

Both can be used to describe ties or kinship between people. Use *relationship* to denote a temporary state, such as when referring to a condition or fact of being related, or a particular instance of connection. Use *relation* to refer to a logical or longstanding truth, a natural association between two or more things, or the manner in which they are connected.

Use: The relationship between the governor and the commissioner was fraught with tension. [temporary state or a particular instance of connection]

Their marital relationship was happy and fulfilling. [a particular instance of connection]

The purpose of this study was to evaluate the relation between length and sexual maturity for male and female cutthroat trout in Baranof Lake. [longstanding truth, a natural association between two or more things, or the manner in which they are connected]

respectively

This word is often overused in scientific writing. It makes reading difficult because it forces the reader to cross-reference parts of the sentence. Its use should be minimized.

Use: Sample A was 45 mm and B was 65 mm.

Avoid: Samples A and B were 45 mm and 65 mm, *respectively*.

return/run

Return refers to an aggregation of salmon over several or more years that represent the surviving adult offspring from a single brood year. *Run* refers to the total number of mature salmon returning in a given year from ocean-rearing areas to spawn.

rise

See *raise/rise*.

rod and pole/rod and reel

A *pole* does not use a reel (e.g., a *cane pole*). A *rod* has guides and a reel.

S

sac roe herring fishery

The preferred term is *herring sac roe fishery*. On first use, state the term as *Pacific herring sac roe fishery*. See *Pacific herring (or Pacific halibut)* for introduction of the term *Pacific herring*.

salmon life stages

Terms denoting salmon life stages are often misused, in part because many writers are unaware of correct usage, as defined in the following chronology of stages:

- ovum*: A mature egg, or an unfertilized female reproductive cell(s). [synonym: *gamete* or sometimes *egg*]
- egg*: Used interchangeably with *ovum*; *egg* is not synonymous with *embryo*.
- embryo*: Developing fertilized egg up to hatching. [synonym: *fertilized egg*]
- sac fry*: Hatched fry with a yolk sac; this stage remains relatively inactive in the incubation gravel.
- alevin*: Also *emergent fry*: fry that have utilized their yolk sac. *Alevin* refers to those still within the gravel, and *emergent fry* to those recently emerged or emerging from the gravel.
- fry*: Larval stage following emergence that lasts until pigmentation and parr marks are visible.
- parr*: Applies to only freshwater-rearing species (sockeye, coho, Chinook, trout, char) and denotes the stage between the development of pigment/parr marks and the smolt stage; note that pink and chum salmon skip this and the smolt stage and go from the fry stage directly to the juvenile stage.
- smolt*: For freshwater-rearing species (sockeye, coho, Chinook) it is the time that parr are able to osmoregulate and migrate to salt water.
- immature*: This stage lasts from the first day of January following saltwater entry until gonadal development becomes noticeable; pink and coho salmon skip this stage and enter the mature stage immediately following the juvenile stage because their gonads begin to develop around the first of January following saltwater entry.
- maturing*: The ocean-rearing stage that begins when gonadal development becomes noticeable and lasts until the adult stage. Chum, sockeye, and Chinook salmon enter this stage from the immature stage. However, pink and coho salmon enter this stage from the juvenile stage: i.e., on the first day of January following saltwater entry because their gonads begin to develop at that time.
- adult*: Generally covers the period from the beginning of the spawning migration or run until death; note that *spawning fish* should be used only for those adults constituting the escapement.

Terms that aggregate two or more successive stages can be developed as needed but should be defined on first usage (e.g., *subadult* to refer to immature and maturing salmon); however, the *freshwater-rearing* and *ocean-rearing* stages are common enough and sufficiently intuitive to enable usage without introduction. For more information on definitions of the ocean-rearing stages of Pacific salmon, see

International North Pacific Commission Bulletins Godfrey et al. 1975; French et al. 1976; Neave et al. 1976; Major et al. 1978 and Takagi et al. 1981. In these studies on the early ocean life history of Pacific salmon, *juvenile salmon* are defined as the early marine stage of all species that begins with their entry into salt water, and continues through the end of that calendar year. Otherwise, the term *juvenile* generally refers to both freshwater-rearing and saltwater-rearing stages.

since

See *as/because/since*.

sonar (words)

See *radio-* words.

spawn on kelp

Use *spawn on kelp* rather than *roe* or *eggs on kelp*. Hyphenate when used as an adjective. Other variations include *pound spawn on kelp* or *pound spawn-on-kelp fishery* or *wild spawn-on-kelp fishery*; *suspended spawn on kelp* or *suspended spawn-on-kelp fishery*. When referring to the herring *spawn-on-kelp* fisheries, use the following qualifiers to describe harvests: *equivalent herring harvest* or *harvest in product weight*.

special harvest area/terminal harvest area

A *special harvest area* is an area where private hatchery returns segregate from wild stocks and the private hatchery harvests fish for cost recovery; noncommercial anglers are sometimes also allowed to fish in the *special harvest area*. A *terminal harvest area* is an area where fishermen¹ (both commercial and noncommercial) may harvest segregated hatchery returns. A *terminal harvest area* may be separate and adjacent to a *special harvest area* or be the same as a *special harvest area* but open at different times; or a *terminal harvest area* may include, but extend beyond, a *special harvest area*. Use *terminal harvest area* when referring to common property harvests taken in the *terminal harvest area*; use *special harvest area* when referring to private hatchery cost recovery.

stock of concern

See *concern/stock/stock of concern*.

T

take

See *bycatch/harvest/incidental catch/take*.

that/which

That is an identifier of the noun that precedes it. *That* is used when introducing an essential clause (i.e., a clause needed to understand the full and correct meaning of the sentence). Such clauses are not set off from the rest of the sentence by com-

mas. *Which* is used to introduce a nonessential clause (i.e., a clause that includes extra information that is useful but not necessary for correct interpretation of the sentence). These nonessential clauses are set off by commas. The considerate author will avoid ambiguity and help readers select the intended interpretation.

Use: The samples *that were collected on Friday* all tested positive. [*that* signals an essential clause, helping the reader identify that the positive samples were all collected on Friday]

Use: The samples, *which were collected on Friday*, all tested positive. [*which* signals a nonessential clause, telling the reader that all samples were positive; the independent clause supplies extra information about the collection date]

Note that careless use of *that/which* can cause misreading of the sentence. For example, in the following carelessly constructed sentence, readers can extract two different meanings.

Avoid: The samples *which* were collected on Friday all tested positive. [*Which* signals a nonessential clause, but because independent clauses need a comma separation, the sentence construction signals that this is an essential clause. The reader does not know if all samples were positive, or if only samples collected on Friday were positive.]

Rarely does the word *that* introduce a nonessential clause. Also, remember to avoid *that/the* pile-ups.

Use: The data indicate *that* herd population is declining.

Avoid: The data indicate *that the* herd population is declining.

toward/towards

Use *toward*. *Toward* is the preferred form in American English. In British English, *towards* is more common than *toward*.

treble hook

See *single hook*.

U

United States

When *United States* is used as a noun, spell it out. When it is abbreviated as part of a government agency, use periods. Periods are not used in acronyms.

Use: U.S. Geological Survey (USGS)
U.S./Canada

U.S. Fish and Wildlife Service (USFWS)

V

village/villager

The terms *community* and *resident* are preferred.

W**while**

Use *while* in a temporal sense only (e.g., *While* sampling, we discovered...). Otherwise, in place of *while* use *although*, *but*, *whereas*, or *and*. Do not use *while* as a conjunction.

Use: Bears were studied, *although* [but] birds were not.

Avoid: Bears were studied, *while* birds were not.

who

The word *who* carries either essential (identifying information that is needed to understand the correct meaning of the sentence; e.g., *The manager who works in the Anchorage office received the award.*) or nonessential (extra information that is useful but not necessary for correct interpretation of the sentence; e.g., *The manager, who is in Hawaii this week, received the award.*)

Essential information does not require a comma; nonessential information requires a comma or a pair of commas midsentence. The comma visually separates nonessential messages so the reader can easily discern the sentence's main point.

Use: The publisher will consider proposals from biologists *who* submit their plans before June 30. [essential, no comma]

Select people *who* want to be on this committee. [essential, no comma]

Terry Smith, *who* graduated from Montana State University, is the new regional supervisor. [nonessential information is set off by a pair of commas]

When a modifying phrase with the word *who* follows a proper noun, it is usually nonessential and requires commas.

Use: Jane Smith, *who* works for the current administration, is a member of the survey team.

For information on when to use *that*, see *that/which*.

who/whom

The traditional rules that determine the use of *who* and *whom* are simple but require remembering grammar. Use *who* when the words *I*, *he*, *she*, *they*, or *we* are appropriate substitutes, and use *whom* when *him*, *her*, *them*, *me*, or *us* are appropriate substitutes.

Use: *Who* washed the dishes? [can substitute *I*, *he*, *she*, *they*, or *we*]

You gave something to *whom*? [can substitute *him*, *her*, *them*, *me*, or *us*]

with

Do not use *with* as a conjunction. Use *and*, *but*, or a semicolon (;).

Use: Temperatures were taken daily, and water samples were taken every week.
Temperatures were taken daily; water samples were taken weekly.

Avoid: Temperatures were taken daily with water samples taken every week.

X

Y

Yupik/Yup'ik

Yupik refers to the combination of languages (the *Yupik* languages). Language names are *Siberian Yupik* or *Central Yup'ik*. *Central Yup'ik* also refers to people (plural); singular person is *Yuk'*.

There are three *Yupik* Eskimo languages spoken in Alaska:

1. *St. Lawrence Island* or *Siberian Yupik*, spoken on St. Lawrence Island,
2. *Central Yup'ik* in Southwestern Alaska, spoken from Unalakleet south to the Alaska Peninsula, and
3. *Alutiiq* (*Sugpiaq*, *Sugcestun*), also called *Pacific Yupik*, is a Pacific Gulf variety of *Yupik* Eskimo spoken in two dialects in several communities on the Alaska Peninsula, on Kodiak Island, at the southern tip of the Kenai Peninsula, and in Prince William Sound.

Alutiiq and *Sugpiaq* are also adjectives. *Alutiiq* is also a singular noun (one person); the plural is *Alutiit*.

The correct term for referring to these groups collectively is *Yupik* (never *Yup'ik*). Use *Yupik* to refer individually or collectively to the three *Yupik* Eskimo languages in Alaska. *Yup'ik* is correct only for Central *Yup'ik*. So you can say that Central *Yup'ik* is a *Yupik* language.

¹ The term stock, especially as applied to salmon, has different meanings ascribed by management, conservation biology (genetics), and the Endangered Species Act. Geiger and Gharrett (1997) have recommended that stock be used only in management and the word deme—instead of stock—be used for applications to conservation biology. Van Alen (1998) and Wilbur et al. (1998) provide appropriate definitions for stock, stock group, and deme/local population. To mitigate the semantical turmoil in which these terms have become embroiled, staff should use these terms as provided in these three papers:

Geiger, H. J., and A. J. Gharrett. 1997. Stocks at risk: what's the stock and what's the risk? *Alaska Fishery Research Bulletin* 4(2):178–180.

Van Alen, B. W. 2000. Status and stewardship of salmon stocks in Southeast Alaska. Chapter 13 [In] Knudsen, E. E., et al., editors. *Sustainable fisheries management: Pacific salmon*. Lewis Publishers, Boca Raton, FL.

Wilbur, R. L., J. Seeb, L. Seeb, and H. J. Geiger. 1998. Is it a deme, a stock, or a subspecies? These and other definitions. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 5J98-09, Juneau.

² Fisherman/men is the historically-used term and is acceptable. However, writers should strive to provide gender-neutral fish harvester terms when possible. Consider using gillnetter, seiner, troller, etc. to identify commercial fishing parties, and angler instead of fisherman when referencing sport fishing activities. Fisher is the standard term used in the Division of Subsistence.

Section 7: Plurals

For the names of certain types of animals, the singular is used to denote both one and more than one individual.

Use: deer, fish, moose, sheep

Some of these nouns have the same form for singular and plural. The regularly formed plural is used to indicate more than one species, strain, or variety.

Use: three fishes of interest

For the names of some large mammals and some other organisms, either the singular or the regularly formed plural may be used to indicate the plural; however, see 7.1 Animals, Fishes, and Related Terms for plurals commonly used in ADF&G writing.

Generally speaking, a number, a fraction, or a quantity of things is singular if considered as a mass and plural if considered as separate units. In general, use a plural verb when human beings are implied.

Use: Six quarts is enough [singular if considered as a mass].
 Five liters were slowly measured out [plural if considered as separate units].
 Half the bottle is shared.
 Half of these women are married.
 Almost 20 percent of the overhead goes to the mortgage.
 Over 20 percent of the profits are reinvested.

7

7.1 Animals, Fishes, and Related Terms

When referring to collective groups of species (a mix of species), the plural forms may differ from normal use (e.g., one fish, two fish; but two fishes—one of the trout variety and one of the escocid variety.)

Singular	Plural	Mix of Species
abalone	abalones	NA
alevin	alevins	alevins
alga	algae ¹	algae ¹
bear	bears	Ursids
beaver	beavers	beavers
bison	bison ¹	bison
buck	bucks ¹	bucks ¹
burbot	burbots	burbots
caribou	caribou ¹	NA
char	char ¹	chars ¹
cisco	ciscoes	ciscoes
clam	clams	clams
cod	cod ¹	cods ¹
coyote	coyotes	NA

Singular	Plural	Mix of Species
crab	crab	crabs
deer	deer ¹	deer ¹
doe	does ¹	does ¹
duck	ducks	ducks
elk	elk ¹	NA
fauna	faunas	faunas
fingerling	fingerlings	fingerlings
fish	fish	fishes ^{1, 2}
flora	floras	floras
flounder	flounders ¹	flounders ¹
fox	foxes	foxes
fry	fry	fry
fungus	fungi/funguses	fungi/funguses
furbearer	furbearers	furbearers
geoduck	geoducks	geoducks
gillnet	gillnets	gillnets
goat	goats	goats
grayling	grayling	graylings
goose	geese	geese
grouse	grouse ¹	grouses ¹
halibut	halibut ¹	halibuts ¹
hare	hares	hares
herring	herring ¹	herrings ¹
larva	larvae ¹	larvae ¹
lynx	lynx ¹	lynxes ¹
marten	martens	martens
megalopa ³	megalopae	megalopae
megalops ³	megalops	megalops
mink	mink ¹	minks
mollusk	mollusks	mollusks
moose	moose	NA
muskox	muskoxen	NA
muskrat	muskrats	NA
octopus	octopuses/octopi	octopuses/octopi
otter	otters	otters
parr	parr ¹	parr ¹
pike	pike ¹	esocids ⁵
plankter ⁴	plankton/plankters ³	plankton ⁴
raptor	raptors	raptors
rockfish	rockfish ¹	rockfishes ¹
salmon	salmon ¹	salmon ¹
seal	seals	seals
sea lion	sea lions	sea lions
sheep	sheep	sheep
shrimp	shrimp ¹	shrimps ¹
smolt	smolt	smolts ¹
species	species	species
squid	squid ¹	squids ¹
trout	trout ¹	trouts ¹
walrus	walruses	NA
waterfowl	waterfowl	waterfowl
weasel	weasels	weasels
whale	whales	whales

Singular	Plural	Mix of Species
wolf	wolves	NA
wolverine	wolverines	NA
zoea ¹	zoeas ¹	zoeas ¹

- ¹ The dictionary recognizes two acceptable plurals, but the committee decided that only this plural should be used in ADF&G writing.
- ² For a mix of species, the plural *fish* may be used when referring to fish as subsistence harvests for food. For all other uses, ADF&G recommends following the American Fisheries Society's recommendations to use *fishes* for a mix of species.
- ³ Use either megalopa or megalops and their plurals, but do not mix the two forms (megalops/megalopa) within a document.
- ⁴ Use *plankter* for a single planktonic organism. Use *plankters* when referring to a specific number of such organisms; however, *plankton* may also be used. For example, a count of 1.3×10^3 zooplankters but the zooplankton count was 1.3×10^3 (not 1.3×10^3 zooplankton). Also, use *plankton* when referring to the population or general group of such organisms.
- ⁵ Although technically pickerels and muskellunge are pikes, when referring to a mix of pike species *piques* may be misunderstood to be several or more pike *E. lucius*. Therefore, when referring to a mix of pike species, use *esocids*.

7.2 General Terms

The following singulars and plurals should be used as indicated. Words in brackets are allowed in general writing but not in technical writing. When there are two plurals and both are acceptable, they are separated by a slash (/).

Singular	Plural
addendum	addenda
agenda	agendas
criterion	criteria [criterions ¹]
data point [not data ²]	data
fishery ³	fisheries ³
formula	formulas
forum	fora
genus	genera
hypothesis	hypotheses
index	indices [indexes ¹]
memorandum	memoranda/memorandums
ovum	ova
phenomenon	phenomena
species	species
stratum	strata [stratums ⁴]
symposium	symposia/symposiums
taxon	taxa
virion	virions ⁵
virus ⁵	viruses ⁵

- ¹ Although acceptable in popular writing, this should not be used in technical writing.
- ² Although *data* as a singular is acceptable in popular writing, this should not be used in technical writing. *Datum* is no longer used.
- ³ Use *fishery* or *fisheries* as a plural modifier of *biologist* or *management*; whichever is used, use it consistently within the document, not both. For ADF&G biologists, use *fishery biologist* because this is the term for the job class.
- ⁴ Although the dictionary allows either, the committee did not endorse the use of this plural.
- ⁵ Use *virion(s)* or *virus particle(s)* when referring to a single or multiple particles, especially numbers of (e.g., *a single virion can infect...*). Use *virus/viruses* for all other uses; i.e., when not referring to numbers of particles.

7.3 Apostrophes

To form the possessive of most singular common and proper nouns and some indefinite pronouns, add an apostrophe and an *s*. This is true even when the word ends with an *s*.

Use: the patient's condition one's own view the wolf's territory
 Philip Glass's symphony Yeats's poems Illinois's state capital

Plural nouns may already end in *s*. To create their possessive, add an apostrophe after the *s*.

Use: The dogs' beds were in the garage.
 The lions' water hole had dried up.
 The wolves' territory was shrinking.

To avoid the possessive with inanimate objects, recast the sentence or use an *of* phrase.

Use: the leaf's color = the color of the leaf
 the mineral's characteristics = the characteristics of the mineral
 the regulations' intentions = the intentions of the regulations

To form the plural of abbreviations that do not contain periods, add only *s*. If the abbreviated term is itself a plural, do not add the *s*. In scientific writing do not add *s* to a symbol for a unit of measure.

Use: MDs PCBs mm [not mms] kg [not kgs] lb [not lbs]
 CDC [not CDCs] for Centers for Disease Control and Prevention

Do not use an apostrophe with years.

Use: *the 1970s* Avoid: *the 1970's*.

Section 8: Numbers

For informational and educational publications, documents having primarily a public audience, as well as all correspondence, use the *General Style* described in Section 8.1. For all technical and scientific reports and publications published in-house, use the *Modern Scientific Style* described in Section 8.2

8.1 General Style

For informational and educational publications, documents having primarily a public audience, as well as all correspondence, use the General Style.

a. Cardinal numbers

1. With few exceptions, single-digit numbers are spelled out.

Use: seven deer three biologists two lakes

Single-digit numbers are not spelled out in the following instances: dates, money, clock time, proportions or ratios, percentages, or when used with abbreviations or symbols of a unit of measure.

Use: November 10, 2010 10 November 12:30 PM 18:02
a ratio of 3:2 6% 7 mm 3°C \$6

2. Use numerals for two-digit numbers, except in the rather unusual situation in which a number is used idiomatically.

Use: 10 deer 11 biologists 15 percent \$64 or 64 dollars

3. Spell out all numbers that are used idiomatically or within a figure of speech when the numerative function has become secondary.

Use: a thousand and one questions
the sixty-four-thousand-dollar question
in any one [given] week

4. For closely associated numbers or numbers in a series, if any one of the numbers is two digits, then use numerals for all of the numbers. If all are single-digit numbers, spell them out.

Use: three males, four females, and seven unknown
3 males, 10 females, and 7 unknown
from five to six
two of the four
from 5 to 11
2 of the 12
of the 15 samples, 3 were contaminated and 1 was...

5. Use numerals for all decimal numbers.

Use: 1.1 million 0.3 miles 1.75 units multiplied by 0.667

b. Ordinal numbers

For ordinals, follow the scientific number style in Section 8.2.

8.2 Modern Scientific Style

Use *Modern Scientific Number Style* for all technical and scientific reports and publications. *Modern Scientific Number Style* uses numerals for most single-digit whole numbers. In this style all quantities are expressed in a similar manner; as numerals have greater visual distinctiveness than words, this increases the profile of quantities in running text (CSE 2006).

a. Cardinal numbers

Quantitative elements in scientific writing are of paramount importance; use numerals rather than words to express whole and decimal numbers in scientific text, titles, headings, tables and figure captions. This practice increases their visibility and distinctiveness, and emphasizes their enumerative function.

Use: 3 hypotheses 7 samples 52 trees
328 amino acids 4 times 0.5 mm

Numerals are also used to designate mathematical relations, such as ratios and multiplication factors.

Use: 100x magnification 5:1 4-fold

There are four categories of exceptions when numbers should be spelled out.

1. Spell out all numbers used to start a sentence. If it can be done, reword the sentence with the number appearing within the text.

Use: The largest dose is 20 mg, but 15 mg will be enough.

Use: The drug is administered in a single dose; 20 mg is the desired amount, but 15 mg is enough.

Avoid: Twenty milligrams is the desired amount, but 15 mg is enough.

2. When two numbers are adjacent, spell out the number that is most easily expressed in words, and leave the other as a numeral. In general, retain as a numeral any number that occurs with a unit of measurement. If possible, reword the sentence to separate the numbers.

Use: The sample was divided into eight 50 g aliquots.

Use: The sample was divided into 8 aliquots of 50 g each.

Avoid: The sample was divided into 8 50-gram aliquots.

3. For most general, nonenumerative uses, spell out *zero* and *one*.

Use:	one of the subspecies	in one such instance	one is obliged to
	one of the most important	at one time	the zero in Table 3
	this one is promising	zero-based budgeting	one reason

Zero and *one* also have a variety of functions which make their quantitative meaning irrelevant. When possible, reword these constructions to remove appearance of inconsistency.

Use:	One must never forget. [personal pronoun or synonym for <i>you</i>]
	This one is preferred. [indefinite pronoun]

Additionally, the numeral “1” can be easily confused with the letters “I” and “l”, particularly in running text, and the value “0” can be confused with the letters “O” or “o” used to designate a variable. However, express the whole numbers *zero* and *one* as numerals when they are connected to a unit of measure, when they are used as assigned or calculated values, or when they are part of a series, or closely or intermittently linked with numbers.

Use:	1-digit number	1 year	[unit of measure]
	when $n = 1$	0 °C	[unit of measure]
	Between 0 and 2	0, 1, 5, and 9 were	[closely linked]
	1 of 4 subspecies	2 applications instead of 1	[intermittently linked]

4. When a number does not specify a quantity or is used idiomatically, it should be expressed as a word. However, try to avoid using numbers idiomatically or as figures of speech; they are inappropriate for scientific writing as they may not be readily understood by readers whose first language is not English.

These usages are discouraged in scientific and technical documents, where exactness of meaning and the ability to interpret text into other languages is important.

Use:	We can draw several conclusions from the data.
Avoid:	This data tells us a thing or two.
Use:	The data could lead us to innumerable possible conclusions
Avoid:	The data opens up a thousand and one possibilities.

The decision between idiomatic and enumerative uses may not always be clear. For example, in the phrase “We deleted those five data points” “five” could be considered more descriptive (indicating which data points) than enumerative and as such may be better expressed as a word, although the numeral form could be used, if preferred. In contrast, in the phrase “We deleted 5 data points, the 5 is clearly enumerative (it indicates how many data points, but not which ones in particular) and therefore should be expressed as a numeral. The word *the* or *those* immediately preceding a number generally indicates ambiguous situations such as these.

b. Ordinal numbers

Ordinal numbers generally convey rank order rather than quantity. As such, rather than being expressly enumerative (answering the question “How many?”), they often instead describe *which*, *what*, or *in what sequence*. Because this function of ordinals is more prose-oriented than quantitative, distinctiveness within the text is less important for ordinal numbers, and nondisruptive reading flow and comprehension take precedence. Potential confusion between the numeral “1” and the letters “l” and “I” is also a consideration.

1. Spell out single-digit ordinals (corresponding to the numbers 1 to 9), used as adjectives or adverbs.

Use: the ninth time a third wave of immigrants
 were first discovered the first ducklings emerged

2. The numeric form of two-digit ordinals (corresponding to the numbers 10 and higher) is less likely to impede comprehension, and the practice of using the numeric form for such ordinals is well established. Therefore, express these larger ordinals as numerals.

Use: for a 10th time the 98th test run the 19th century

3. Express single-digit ordinals in the numeric form if they appear in a series or are intermittently linked with larger ordinals.

Use: The 5th, 8th, and 10th [not fifth, eighth and 10th or tenth] replications failed.
 We developed 12 hypotheses, and tested the 2nd. The 11th hypothesis was rejected as not a viable possibility.

4. To provide visual cues to comprehension, single-digit ordinals may be expressed in the numeric form if they are used repeatedly.

Use: Of the 6, we examined the 4th subject, then we looked at the 5th subject.
 We finally returned to review the 1st, 2nd, and 3rd subjects.

Although the general policy for ordinals would dictate that words be used here, the numeric form provides more distinction for the references to the individual subjects. *Subject 1*, *subject 2*, and so on would accomplish the same thing. The numeric ordinals also enhance contrast with the adverbial use of *first* in this example. Whichever style is chosen in this situation—numeric ordinals or the spelled-out form—it should be used consistently throughout a document.

8.3 Dates

For both scientific and general style, spell out the names of days of the week and months in text. When placed in tables, graphs, and references, the names of days and months can be abbreviated to their first three letters (without a period).

Do not use an apostrophe with years, unless they are possessive.

- Use: The 1988 coho salmon return to Southeast Alaska was the lowest since the 1970s.
 Use: Data collected during the past two years indicates that 2005's largest storm occurred in March.
 Avoid: We concluded that this population has probably recovered from overfishing incurred in the 1970's.

When writing dates, use no punctuation in the following formats.

- Use: On 10 November 2009 we pulled the last net.
 In November 2009 we pulled the last net.
 On November 10 we pulled the last net.

When a date is written with the day following the month, use cardinal numbers, even though they may be pronounced as ordinals (Gregg 2005).

- Use: November 10 [which may be pronounced November *tenth*]
 Avoid: November 10th
 Avoid: November 10th

However, use commas in the following format.

- Use: on November 10, 2009, we...

8.4 Time of Day

a. General style

For general style (memos, news releases, letters, and documentation for the Alaska Board of Fisheries processes), use the 12-hour system. For *ante meridiem* and *post meridiem* use lower case *a.m.* and *p.m.* with periods following. Spell out *noon* and *midnight*.

- Use: 12:45 a.m. 9:30 p.m.
 The fishery will open at noon and close at midnight.

b. Modern scientific style

For scientific style, use either the 12-hour system or the 24-hour clock (military), but not both in the same document, unless your audience is military or public safety personnel.

12-Hour System: For *ante meridiem* and *post meridiem* use uppercase or small capitals for *AM* and *PM*, separated from the time with a space, and with no periods following. Spell out *noon* and *midnight*. Minutes are separated from hours by a colon, and a leading zero is added if necessary so that the minutes are presented as a two-digit number:

Use: 12:01 in the morning is the same as 1 minute after midnight or 12:01 AM
 12:01 in the afternoon is the same as 1 minute after noon or 12:01 PM

24-Hour System: The 24-hour system is used without punctuation or AM and PM designations. The day begins at 0000 (midnight) and ends at 2359; so 2400 of one day = 0000 of the next day. If the context of time in this format could be ambiguous, put the word *hours* after the 4-digit number. Do not use the abbreviation *h* for hours after the four digits. Spell out *hours* because the abbreviation *h* is used to denote an amount of elapsed time rather than a time of day.

Use: 0602 = 6:02 AM 1802 = 6:02 PM

8.5 Fractions, Percentages, and Decimals

a. Fractions

In general, fractions should be spelled out in running text. Hyphenate all fractions, whether used as adjectives or nouns.

Use: One-half [or half] of the subjects A third of the study plots
 Nearly three-quarters of the population A two-thirds majority

For fractional quantities greater than 1, mixed fractions may be used if the precise value is not intended. The fraction should be set close to the whole number with no intervening space.

Use: was followed for 3½ years about 1¼-km distance

b. Percentages and decimals

When the precise value must be conveyed, the decimal or percent form is preferred.

Use: 3.5 L 27% of the an area measuring 1.25 × 3.0 km

For numbers less than 1.0 always use an initial zero before the decimal point in text, tables, and figures. Never terminate an integer by a decimal point except at the end of a sentence, where it is a period (CSE 2006).

Use: 0.497 Not: .497
 Use: $P = 0.05$ Not: $P = .05$
 Use: 74 Not: 74.

However, when used with the en dash range indicator, use the symbol only after the second number.

Use: 10–15%

For a series of numbers, present the unit after the last numeral only, except if the unit symbol must be set close to the number:

Use: 12, 17, 43, and 76 cm categories of <3, 3–7, and >7 g
38%, 55%, and 29% \$15, \$22, or \$31

If a range begins a sentence, work to recast the sentence. The alternative is to spell out the first number, and write the second as a numeral with the accompanying unit. These constructions are awkward and appear inconsistent, and should be avoided.

Use: The test range was 23–25 km
Avoid: Twenty-three to 25 km

Do not use the word *by* before a range because it may convey an increment of change from an original value, rather than a range of values.

Use: Growth increased 0.1 to 0.3 g/d (a range)
Avoid: Growth increased by 0.1 to 0.3 g/d (to avoid implication that growth increased by 0.1 g/d to a new level of 0.3 g/d)

For the same reason, be careful when expressing two numbers preceded by words such as *increase*, *decrease*, or *change*. In those cases a range may be intended, but the reader may misinterpret the first value as the initial value and the second as the new value (CSE 2006).

Avoid: increased from 15 cm to 25 cm [could mean an increase of 10 cm, or it could mean an increase in the range of 15 to 25 cm]

Unless context makes interpretation unequivocal, qualification may be needed.

Use: increased from an initial 10 g/d to a final 18 g/d
Avoid: increased by a range of 10–18 g/d

When changes are from one range to a new range, an en dash within each range may be easier for readers to interpret quickly.

Use: increased from 10–23 mm to 12–27 mm
Avoid: increased from 10 to 23 mm to 12 to 27 mm

8.7 Units of Measure, Mathematical Symbols, and Variables

Symbols may have an alphabetic basis (e.g., mm, kV, g, qt, ft) or a nonalphabetic basis (e.g., %, \$, ≈). Spacing between numbers and units of measure or symbols varies. See Appendix A: Units of Measure, Scientific Abbreviations, Symbols, Conversions, Variables, Mathematical Operators, and Equations for more detailed information.

1. Use a single space to separate a number and subsequent alphabetic symbol. The abbreviations for units of measure are identical in the singular and in the plural.

Use: 5 g 17 qt 6 Kv A length of 130 mm

2. Close up a number and a nonalphabetic symbol, whether the symbol precedes or follows the number unless the symbol is a mathematical operator.

Use: 10% \$62.00 90°F

3. Geographic coordinates have no spaces over the entire coordinate (see Section 8.8 Latitude and Longitude).

4. Mathematical or variable symbols should not begin a sentence. Write out the complete term in words or rewrite the sentence.

Use: Five gallons of seawater were added to the tank

Avoid: Five g of seawater were added to the tank.

Use: Eighty-eight percent of the samples were not usable.

Avoid: Eighty-eight % of the samples were not usable.

See Appendix A.2 Variables and Mathematical Symbols for more information.

8.8 Latitude and Longitude

Spell out these terms when they appear alone in text without specific numeric designations, but abbreviate them to *lat* and *long* when they appear as part of a coordinate.

There are several ways of presenting latitude and longitude—such as stripping the coordinate of nonnumeric characters—which have been developed recently for storage of data in electronic databases.

Present a geographic coordinate with latitude first, followed by a comma and then longitude. The numbers and symbols are presented without spaces using a leading zero for degrees, minutes, and seconds fewer than 10, followed by the directional designation (N, S, E, W). Use the prime symbol (not a single quotation mark or apostrophe) for the minutes and the double prime symbol (not a double quotation) for seconds.

Although *N* and *S* imply latitude, and *E* and *W* imply longitude, use of the abbreviations *lat* and *long* may aid in understanding.

Use: lat 43° 15'09"N, long 116° 40'18"E or 43° 15'09"N, 116° 40'18"E
 lat 04° 59'17"S, long 01° 02'03"W or 04° 59'17"S, 01° 02'03"W

Latitude and longitude may be reported in decimal degrees instead of degrees, minutes, and seconds. Decimal degrees are easier to use in databases and spreadsheets. The degree symbol is omitted, as is the plus sign for northern latitudes and eastern

longitudes; the minus sign is included for southern latitudes and western longitudes (CSE 2006).

Use:	lat 38° 45'N	becomes	lat 38.75
	long 38° 52'30"	becomes	long 38.875

8.9 Measurements

a. Symbols

A unit of measurement may be abbreviated (12 ft) or expressed as a symbol (12') in technical material or tables. Do not use a period at end of the abbreviation.

Use: averaged 6 ft (1.8 m).

When using the symbol, use the foot and inches symbols (prime and double prime), not the apostrophe or quote symbols.

Use: 12'7"
Avoid: 12'7" or 12'7"

8.10 Pacific Salmon Ages

For any given salmon brood, their birth date is conceptually standardized at January 1 of the year following the brood year, regardless of when a given brood actually hatched. For example, a brood spawned in 1995 conceptually hatched January 1, 1996, and the aging clock begins to run on that date. Therefore, a juvenile salmon spawned in 1995 will be age 0 throughout 1996 and age 1 throughout 1997, etc.

In a document that refers to salmon ages, at least some of which include saltwater life stages, the age of salmon and other anadromous fishes should be reported using the European aging system. One digit is placed to the left of a decimal point to indicate freshwater age (not including the year spent in the gravel during egg incubation and hatching—referred to as the gravel year), and another digit is placed to the right of the same decimal point to indicate ocean age. For example, an age-2.4 Chinook salmon spent three years in freshwater (the gravel year is not included in the European aging system), four years in the ocean, and is seven years old (from the time of egg deposition/birth).

The inclusion of the qualifier *freshwater* or *saltwater* is acceptable. Use one option consistently throughout the report; do not mix.

Use:	saltwater-age-4	age-.4	ocean-age-4	age-2.4
Avoid:	4-ocean fish	ocean-4 fish		

In a document mentioning freshwater ages, drop the European system's period (i.e., avoid x.) and use the age without the period (i.e., age x); however, make sure that

you indicate freshwater-age-2 anadromous fish so that freshwater age is not confused with total age.

Use: freshwater-age-2 smolt juvenile
Avoid: age-2. age-2 [can indicate both freshwater age or total age]

When age designation is used as an adjective before the noun, the compound adjective is modifying, so there should be a hyphen separation. When the age term is being used as a noun there is no hyphen.

Use: The sibling model prediction for the return of age-1.3 sockeye salmon in 2010 was based on abundance of age-1.2 sockeye salmon in 2009.
Age-1.2 Chinook salmon represented between 4.3% (2002) and 75% (2005) of the samples collected from the test fishery.
Chum salmon mature between age 0.3 and age 0.5. [ages are not adjectives]

If a series of ages is used in a series of adjectives before the noun, the ages should have hanging hyphens. If there is a series of ages that are not used as adjectives, then there is no hyphen.

Use: All salmon were classified into age-.1, -.2, or -.3 categories. [categories is the noun]
The dominant age classes for large fish in the Blossom River were age 1.2 (13.8%), 1.3 (33.0%), and 1.4 (38.5%) for both sexes combined. [series of ages not used as adjectives]

The rules of age terms can also be applied to salmon ages. (see *age terms* in Section 4.1 Compound Words).

Use: 7-year-old Chinook salmon

Section 9: Species Names and Rules

Correct scientific and common names for most vertebrate and invertebrate species used in ADF&G publications are listed in this section. However, you should always consult an authoritative source when writing a species name because occasionally the names are changed and this guide will not always reflect the latest changes. The sources used to prepare these lists are in Appendix B of this guide. Correct spelling and capitalization of scientific and common names of animals follows strict rules established by the International Commission of Zoological Nomenclature.

Species listed here are not necessarily native to Alaska, and a species' absence from these lists does not mean it does not appear in Alaska.

9.1 Scientific Names

Scientific names of species are binomial, or consist of two words: the first is the genus and the second is the specific or species name, called the epithet. The first letter of the genus is always capitalized and the epithet is never capitalized; both are italicized.

Subspecific names, when used, are also italicized and placed after the specific epithet (e.g., *Micropterus salmoides flordanus*).

The name of the individual who first described the species and the year it was described appear after the scientific name and should not be italicized (see the following list for examples); however, the describer's name and year are often not included when writing a scientific name. If the name and year are enclosed in parentheses, the genus has been changed from the genus designated by the original describer.

Avoid inclusion of scientific names of commonly reported species in the title of a report; it makes the title needlessly cumbersome and the scientific name will later be included in the text.

a. First introduction

Upon first introduction, the species name may immediately follow the common name with no punctuation or may be set off by parenthesis. When the genus has already been introduced in a document, it may be abbreviated thereafter when identifying a species.

Use: Primary species harvested were Chinook salmon *Oncorhynchus tshawytscha*. [first introduction]

Sport harvests of Chinook salmon [subsequent mention is common name] in the Salcha River were more numerous than those in the Chatanika River.

Sockeye salmon *O. nerka* and pink salmon *O. gorbuscha* were a negligible component of the sport harvest. [genus introduced in earlier]

If a species' first introduction is in the abstract, subsequent abbreviation is allowed only in the abstract. If the species is later referred to in the text, it must be introduced again, and can then subsequently be abbreviated in the text.

b. Multiple or unidentified species

To designate the scientific name of an unidentified species that has been identified only to the genus level, use the unitalicized abbreviation “sp.” In place of the specific or species name, use “spp.” for several or more unidentified species names.

Use: *Chlamys* sp. [an unidentified species]
Serranus spp. [several unidentified species names]

Do not use “sp.” to refer to an unspecified, general member of a genus. Although “spp.” is often used to refer to an aggregation of several to all members of the genus, that practice is unnecessary; instead simply use the italicized genus name alone without any species name. Do not combine either abbreviation with an abbreviated genus.

Use: *Asterias* [sea stars only have this genus name]
Oncorhynchus [several to all members of the genus]
Oncorhynchus spp. [unidentified salmon species]

Avoid: *O.* spp.

9.2 Common Names

Common names are not italicized or capitalized, except for those portions using a proper name (e.g., Canada goose or Pacific cod).

When writing a common name, the second part of the name should not be dropped; however, a generic term, such as *fish* or *crab*, can often be used in place of the full common name when there is no ambiguity about the species being referenced.

Use: The predominant species are sockeye, chum, and pink *salmon*.
 The predominant *salmon* species are sockeye, chum, and pink.
 The predominant *salmon* species are sockeye, chum, and pink. Together these fish make up the bulk of the fishery.

Avoid: The predominant species are sockeye, chum, and pink.

When referring to a specific species of Pacific salmon, the correct common name includes an adjective (*Chinook*, *chum*, *coho*, *pink*, or *sockeye*) and the noun *salmon*.

Use: The mesh size was selective for Chinook *salmon*.
 They snagged 12 sockeye *salmon*.

Common names are used in most general and scientific writings, except in instances where a species lacks a common name, which is fairly common for lower-form invertebrates. However, in formal documents, introduce the scientific name after first mention of the common name (see Section 9.1a First introduction).

The many colloquial names for salmon species are not appropriate for scientific writing. For more salmonid species information see Section 9.5 Finfishes of Alaska.

Use for scientific writing	Avoid in scientific writing
Chinook salmon	kings, king salmon
chum salmon	chums, dog salmon, dogs
coho salmon	cohos, silver salmon, or silvers
pink salmon	pinks, humpies
sockeye salmon	sockeyes, red salmon, reds
Arctic grayling	grayling
inconnu	sheefish
Dolly Varden	Dollies, Dolly

9.3 Family and Order Names

The genus, subgenus, species, and subspecies are the only parts of the taxonomic hierarchy that are italicized; all other taxonomic categories are not italicized. The first letter of the genus and subgenus is capitalized. Families (a species aggregate sharing common characters) always end in “idae” (family: Salmonidae). First letters of these names are capitalized; however, they are not capitalized if they are shortened to an informal name (e.g., salmonids for Salmonidae).

9.4 Shellfishes of Alaska

Listing of all Alaska species was not possible here; however, full listings are available in the standard references (see Appendix B).

Bivalves

Common Name	Scientific Name	Notes ¹
abalone, pinto	<i>Haliotis kamtschatkana</i>	
clam, Washington butter	<i>Saxidomus gigantea</i> (Deshayes, 1839)	
cockle		
Greenland smoothcockle	<i>Serripes groenlandicus</i> (Mohr, 1786)	
Nuttall cockle	<i>Clinocardium nuttallii</i> (Conrad, 1837)	
flat surfclam	<i>Simomactra planulata</i> (Conrad, 1837)	not horse clam or fat gaper
geoduck, Pacific	<i>Panopea abrupta</i> (Conrad, 1849)	not geoduck
horse mussel, northern	<i>Modiolus modiolus</i> (Linnaeus, 1758)	
limpet	<i>Patella vulgata</i>	
littleneck		
Japanese littleneck	<i>Venerupis philippinarum</i> (A. Adams & Reeve, 1850)	not littleneck clam or Manila clam
Pacific littleneck	<i>Protothaca staminea</i> (Conrad, 1837)	not littleneck clam
macoma		
Baltic macoma	<i>Macoma balthica</i> (Linnaeus, 1758)	
pointed macoma	<i>Macoma inquinata</i> (Deshayes, 1855)	

Common Name	Scientific Name	Notes ¹
mussel		
foolish mussel	<i>Mytilus trossulus</i> Gould, 1850	not <i>Mytilus edulis</i> (Atlantic only), or <i>blue mussel</i>
California mussel	<i>Mytilus californianus</i> Conrad, 1837	
oyster, Pacific	<i>Crassostrea gigas</i> (Thunberg, 1793)	
razor		
Alaska razor clam	<i>Siliqua alta</i> (Broderip & G. B. Sowerby I, 1829)	not <i>razor clam</i>
Pacific razor clam	<i>Siliqua patula</i> (Dixon, 1789)	not <i>razor clam</i>
scallop		
giant rock-scallop	<i>Crassadoma gigantea</i> (J. E. Gray, 1825)	not <i>purple-hinged rock scallop</i>
reddish scallop	<i>Chlamys rubida</i> (Hinds, 1845)	not <i>pink scallop</i>
weathervane scallop	<i>Patinopecten caurinus</i> (Gould, 1850)	
softshell	<i>Mya arenaria</i> Linnaeus, 1758	not <i>softshell clam</i>
surfclam, Arctic	<i>Mactromeris polynyma</i> (Stimpson, 1860)	not <i>surf clam</i>
Crabs		
box crab, armed	<i>Mursia gaudichaudii</i> (H. Milne Edwards, 1837)	not <i>box crab</i>
hair crab	<i>Erimacrus isenbeckii</i> (Brandt, 1848)	not <i>Korean horsehair crab</i>
king crab		
blue king crab	<i>Paralithodes platypus</i> Brandt, 1850	
golden king crab	<i>Lithodes aequispinus</i> Benedict, 1894	not <i>brown king crab</i> or <i>L. aequispina</i>
red king crab	<i>Paralithodes camtschaticus</i> (Tilesius, 1815)	
scarlet king crab	<i>Lithodes couesi</i> Benedict, 1894	
Dungeness crab	<i>Cancer magister</i> Dana, 1852	
Tanner crab		
snow crab	<i>Chionoecetes opilio</i> (Fabricius, 1788)	not <i>opi crab</i> , <i>opilio</i> , or <i>opilio Tanner crab</i>
grooved Tanner crab	<i>Chionoecetes tanneri</i> Rathbun, 1893	avoid using <i>tanneri</i> by itself
Tanner crab	<i>Chionoecetes bairdi</i> Rathbun, 1924	
triangle Tanner crab	<i>Chionoecetes angulatus</i> Rathbun, 1924	avoid using <i>angulatus</i> by itself
Echinoderms		
sea cucumber, red	<i>Parastichopus californicus</i>	
sea star	<i>Asterias</i>	
sea urchin		
green sea urchin	<i>Strongylocentrotus droebachiensis</i> (Müller, 1776)	
red sea urchin	<i>Strongylocentrotus franciscanus</i> (Agassiz, 1863)	
Mollusks		
gumboot chiton	<i>Cryptochiton stelleri</i>	
whelk	<i>Buccinum undatum</i>	common whelk
Shrimps		
coonstriped shrimp	<i>Pandalus hypsinotus</i> Brandt, 1851	
humpy shrimp	<i>Pandalus goniurus</i> Stimpson, 1860	
northern shrimp	<i>Pandalus borealis</i> Kroyer, 1838	not <i>pink shrimp</i> or <i>P. eous</i>

Common Name	Scientific Name	Notes ¹
sidestriped shrimp	<i>Pandalopsis dispar</i> Rathbun, 1902	
spot shrimp	<i>Pandalus platyceros</i> Brandt, 1851	

Squids and Octopuses

octopus, common	<i>Octopus vulgaris</i> Lamarck, 1798
squid, opalescent inshore	<i>Loligo opalescens</i> S. S. Berry, 1911

9.5 Finfishes of Alaska

Listing of all Alaska species was not possible here; however, full listings are available in the standard references (see Appendix B).

Common Name	Scientific Name	Notes
Esocids		
northern pike	<i>Esox lucius</i> Linnaeus, 1758	not just <i>pike</i> alone
Forage Fishes		
capelin	<i>Mallotus villosus</i> (Müller, 1776)	
eulachon	<i>Thaleichthys pacificus</i> (Richardson, 1836)	not <i>hooligan</i>
herring, Pacific	<i>Clupea pallasii</i> Valenciennes, 1874	not <i>C. harengus pallasii</i> or <i>herring</i> alone on first mention
longfin smelt	<i>Spirinchus thaleichthys</i> (Ayers, 1860)	
rainbow smelt	<i>Osmerus mordax</i> (Mitchell, 1814)	
Groundfishes		
burbot	<i>Lota lota</i> (Linnaeus, 1758)	
cod, Pacific	<i>Gadus macrocephalus</i> (Tilesius, 1810)	not <i>gray</i> or <i>true cod</i>
flounder		
arrowtooth flounder	<i>Atheresthes stomias</i> (Jordan & Gilber, 1880)	not <i>turbot</i>
starry flounder	<i>Platichthys stellatus</i> (Pallas, 1787)	
hake, Pacific	<i>Marluccius productus</i> (Ayes, 1855)	not <i>whiting</i>
halibut, Pacific	<i>Hippoglossus stenolepis</i> Schmidt, 1904	
kelp greenling	<i>Hexagrammos decagrammus</i> (Pallas, 1810)	
lingcod	<i>Ophiodon elongatus</i> Girard, 1854	
ocean perch, Pacific	<i>Sebastes alutus</i> (Gilbert, 1890)	
pollock, walleye	<i>Theragra chalcogramma</i> (Pallas, 1814)	
rockfish		
black rockfish	<i>Sebastes melanops</i> Girard, 1856	not <i>black bass</i>
canary rockfish	<i>Sebastes pinniger</i> (Gill, 1864)	
China rockfish	<i>Sebastes nebulosus</i> (Ayes, 1854)	
copper rockfish	<i>Sebastes caurinus</i> Richardson, 1844	
dusky rockfish	<i>Sebastes ciliatus</i> (Tilesius, 1810)	
tiger rockfish	<i>Sebastes nigrocinctus</i> (Ayes, 1859)	
quillback rockfish	<i>Sebastes maliger</i> (Jordan & Gilbert, 1880)	
silvergray rockfish	<i>Sebastes brevispinis</i> Bean, 1884	

Common Name	Scientific Name	Notes ¹
rockfish (continued)		
vermillion rockfish	<i>Sebastes miniatus</i> (Jordan & Gilbert, 1880)	not <i>red snapper</i>
yelloweye rockfish	<i>Sebastes ruberrimus</i> (Cramer, 1895)	
yellowtail rockfish	<i>Sebastes flavidus</i> (Ayres, 1862)	
sablefish	<i>Anoplopoma fimbria</i> (Pallas, 1814)	use <i>black cod</i> ¹ , not <i>blackcod</i> for common name
skate		
Alaska skate	<i>Bathyraja parmifera</i>	
Aleutian skate	<i>Bathyraja aleutica</i>	
Bering skate	<i>Bathyraja interrupta</i>	
butterfly skate	<i>Bathyraja mariposa</i>	
flathead skate	<i>Bathyraja parmifera</i>	
longnose skate	<i>Raja rhina</i>	
rougtail skate	<i>Bathyraja trachura</i>	
starry skate	<i>Raja stellulata</i>	
sole		
English sole	<i>Pleuronectes vetulus</i> (Girard, 1854)	
yellowfin sole	<i>Pleuronectes asper</i> Pallas, 1814	
rock sole	<i>Lepidopsetta bilineata</i> (Ayres, 1855)	
tomcod, Pacific	<i>Microgadus proximus</i> (Walbaum, 1792)	
Salmonids		
Chinook salmon	<i>Oncorhynchus tshawytscha</i> (Walbaum, 1792)	commonly referred to as <i>king salmon</i> ¹
chum salmon	<i>Oncorhynchus keta</i> (Walbaum, 1792)	commonly referred to as <i>dog salmon</i> ¹
coho salmon	<i>Oncorhynchus kisutch</i> (Walbaum, 1792)	commonly referred to as <i>silver salmon</i> ¹
pink salmon	<i>Oncorhynchus gorbuscha</i> (Walbaum, 1792)	Commonly referred to as <i>humpies</i> ¹
sockeye salmon	<i>Oncorhynchus nerka</i> (Walbaum, 1792)	commonly referred to as <i>red salmon</i> ¹ ; for landlocked use <i>kokanee</i> commonly referred to as <i>grayling</i> ¹
grayling, Arctic	<i>Thymallus arcticus</i> (Pallas, 1776)	
char		
Arctic char	<i>Salvelinus alpinus</i> (Linnaeus, 1758)	
Dolly Varden	<i>Salvelinus malma</i> (Walbaum, 1792)	commonly referred to as <i>Dolly</i> ¹ or <i>Dollies</i> ¹
brook trout	<i>Salvelinus fontinalis</i> (Mitchill, 1792)	
lake trout	<i>Salvelinus namaycush</i> (Walbaum, 1792)	
trout		
cutthroat trout	<i>Oncorhynchus clarkii</i> (Richardson, 1836)	
rainbow trout	<i>Oncorhynchus mykiss</i> (Walbaum, 1792)	for sea run use <i>steelhead</i>
Whitefishes		
Arctic cisco	<i>Coregonus autumnalis</i>	
Bering cisco	<i>Coregonus laurettae</i> Bean, 1881	
broad whitefish	<i>Coregonus nasus</i> (Pallas, 1776)	
humpback whitefish	<i>Coregonus pidschian</i> (Gmelin, 1789)	

Common Name	Scientific Name	Notes ¹
inconnu	<i>Stenodus leucichthys</i> (Guldenstadt, 1772)	commonly referred to as sheefish
lake whitefish	<i>Coregonus clupeaformis</i>	
least cisco	<i>Coregonus sardinella</i> Valenciennes, 1848	
round whitefish	<i>Prosopium cylindraceum</i> (Pennant, 1784)	

Other Fishes

Arctic lamprey	<i>Lampetra camtschatica</i> (Tilesius, 1811)
blackfish, Alaska	<i>Dallia pectoralis</i> Bean, 1880
chub, lake	<i>Couesius plumbeus</i> (Agassiz, 1850)
longnose sucker	<i>Catostomus catostomus</i> (Forster, 1773)
salmon shark	<i>Lamna ditropis</i> Hubbs & Follett, 1947
shark, Pacific sleeper	<i>Somniosus pacificus</i>
slimy sculpin	<i>Cottus cognatus</i> Richardson
spiny dogfish	<i>Squalus acanthias</i> Linnaeus, 1758
stickleback, threespine	<i>Gasterosteus cognatus</i> Linnaeus, 1758
stickleback, ninespine	<i>Pungitius pungitius</i> (Linnaeus 1758)

9.6 Anemones of Alaska

Common Name	Scientific Name	Notes ¹
sea anemone	Actiniaria	Order, not genus, for all sea anemones

Actiniidae

burrowing green anemone	<i>Anthopleura artemisia</i>
aggregating anemone	<i>Anthopleura elegantissima</i>
giant green anemone	<i>Anthopleura xanthogrammica</i>
brooding anemone	<i>Epiactis prolifera</i>
Ritter's brooding anemone	<i>Epiactis ritteri</i>
stubby-rose anemone	<i>Urticina coriacea</i>
Christmas anemone	<i>Urticina crassicornis</i>
white-spotted rose anemone	<i>Urticina lofotensis</i>

Metridiidae

Plumose anemone	<i>Metridium senile</i>
Giant plumose anemone	<i>Metridium giganteum</i>

¹ Many common names exist and should be avoided in scientific writing.

9.7 Birds of Alaska

This list is based in part on *Checklist of Alaska Birds, 2009*, by Gibson, Heinl and Tobish. However, it does not follow the American Ornithologists' Union approach of capitalizing common names used by those authors. Instead, this guide applies the widespread common names rule in zoology of capitalizing only proper names (see Section 9.2 Common Names). This is consistent with the standard applied to bird names by the *Journal of Wildlife Management* and other biological sciences publications, and maintains a consistent approach to writing the common names of all types of animals. Authors are encouraged to follow this approach, but may use the American Ornithologists' Union standard where they consider it appropriate, provided that the standard applied is consistent within a publication. This list is provided for writer reference and should not be considered a definitive list of bird species found in Alaska. See Appendix B for references which may be useful when writing about birds.

Common Name	Scientific Name
A	
accentor, Siberian	<i>Prunella montanella</i> (Pallas, 1776)
albatross	
black-footed albatross	<i>Phoebastria nigripes</i> Audubon, 1839
Laysan albatross	<i>Phoebastria immutabilis</i> Rothschild, 1893
short-tailed albatross	<i>Phoebastria albatrus</i> Pallas, 1769
shy albatross	<i>Thalassarche cauta</i> (Gould 1841)
auklet	
Cassin's auklet	<i>Ptychoramphus aleuticus</i> (Pallas, 1811)
crested auklet	<i>Aethia cristatella</i> (Pallas, 1769)
least auklet	<i>Aethia pusilla</i> (Pallas, 1811)
parakeet auklet	<i>Aethia psittacula</i> (Pallas, 1769)
rhinoceros auklet	<i>Cerorhinca monocerata</i> (Pallas, 1811)
whiskered auklet	<i>Aethia pygmaea</i> (Gmelin, 1789)
avocet, American	<i>Recurvirostra americana</i> Gmelin, 1789
B	
bittern	
American bittern	<i>Botaurus lentiginosus</i> (Rackett, 1813)
yellow bittern	<i>Ixobrychus sinensis</i> (Gmelin, 1789)
blackbird	
Brewer's blackbird	<i>Euphagus cyanocephalus</i> (Wagler, 1829)
red-winged blackbird	<i>Agelaius phoeniceus</i> (Linnaeus, 1766)
rusty blackbird	<i>Euphagus carolinus</i> (Müller, 1776)
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i> (Bonaparte, 1825)
bluebird, mountain	<i>Sialia currucoides</i> (Bechstein, 1798)
bluetail, red-flanked	<i>Tarsiger cyanurus</i> (Pallas, 1773)
bluethroat	<i>Luscinia svecica</i> (Linnaeus, 1758)
bobolink	<i>Dolichonyx oryzivorus</i> (Linnaeus, 1758)
brambling	<i>Fringilla montifringilla</i> Linnaeus, 1758
brant	<i>Branta bernicla</i> (Linnaeus, 1758)
bufflehead	<i>Bucephala albeola</i> (Linnaeus, 1758)

Common Name

Scientific Name

bunting

reed bunting	<i>Emberiza schoeniclus</i> (Linnaeus, 1758)
gray bunting	<i>Emberiza variabilis</i> Temminck, 1835
indigo bunting	<i>Passerina cyanea</i> (Linnaeus, 1766)
lazuli bunting	<i>Passerina amoena</i> (Say, 1823)
little bunting	<i>Emberiza pusilla</i> Pallas, 1776
McKay's bunting	<i>Plectrophenax hyperboreus</i> Ridgway, 1884
Pallas' bunting	<i>Emberiza pallasii</i> (Cabanis, 1851)
pine bunting	<i>Emberiza leucocephala</i> Gmelin, 1771
rustic bunting	<i>Emberiza rustica</i> Pallas, 1776
snow bunting	<i>Plectrophenax nivalis</i> (Linnaeus, 1758)
yellow-breasted bunting	<i>Emberiza aureola</i> (Pallas, 1773)
yellow-browed bunting	<i>Emberiza chrysophrys</i> Pallas 1776
yellow-throated bunting	<i>Emberiza elegans</i> (Temminck 1835)

C

canvasback

Aythya valisineria (Wilson, 1814)

catbird, gray

Dumetella carolinensis (Linnaeus, 1766)

chickadee

black-capped chickadee	<i>Poecile atricapillus</i> Linnaeus, 1766
boreal chickadee	<i>Poecile hudsonica</i> Forster, 1772
chestnut-backed chickadee	<i>Poecile rufescens</i> Townsend, 1837
mountain chickadee	<i>Poecile gambeli</i> Ridgeway, 1827
Siberian tit or gray-headed chickadee	<i>Poecile cincta</i> (Boddaert, 1783)

cormorant

Brandt's cormorant	<i>Phalacrocorax penicillatus</i> (Brandt, 1837)
double-crested cormorant	<i>Phalacrocorax auritus</i> (Lesson, 1831)
pelagic cormorant	<i>Phalacrocorax pelagicus</i> Pallas, 1811
red-faced cormorant	<i>Phalacrocorax urile</i> (Gmelin, 1789)

coot

American coot	<i>Fulica americana</i> Gmelin, 1789
Eurasian coot	<i>Fulica atra</i> Linnaeus, 1758

cowbird, brown-headed

Molothrus ater (Boddaert, 1783)

crane

common crane	<i>Grus grus</i> (Linnaeus, 1758)
sandhill crane	<i>Grus canadensis</i> (Linnaeus, 1758)
creeper, brown	<i>Certhia americana</i> Bonaparte, 1838

crossbill

red crossbill	<i>Loxia curvirostra</i> Linnaeus, 1758
white-winged crossbill	<i>Loxia leucoptera</i> Gmelin, 1789

crow

American crow	<i>Corvus brachyrhynchos</i> Brehm, 1822
northwestern crow	<i>Corvus caurinus</i> Baird, 1858

cuckoo

common cuckoo	<i>Cuculus canorus</i> Linnaeus, 1758
oriental cuckoo	<i>Cuculus optatus</i> Blyth, 1843
yellow-billed cuckoo	<i>Coccyzus americanus</i> (Linnaeus, 1758)

curlew

bristle-thighed curlew	<i>Numenius tahitiensis</i> (Gmelin, 1789)
Eskimo curlew	<i>Numenius borealis</i> (Forster, 1772)
Far Eastern curlew	<i>Numenius madagascariensis</i> (Linnaeus, 1766)
little curlew	<i>Numenius minutus</i> Gould, 1841

Common Name

Scientific Name

D

dickcissel	<i>Spiza americana</i> (Gmelin, 1789)
dipper, American	<i>Cinclus mexicanus</i> Swainson, 1827
dotterel, Eurasian	<i>Charadrius morinellus</i> Linnaeus, 1758
dove	
oriental turtle-dove	<i>Streptopelia orientalis</i> (Latham, 1790)
mourning dove	<i>Zenaida macroura</i> (Linnaeus, 1758)
rock dove or rock pigeon	<i>Columba livia</i> Gmelin, 1789
white-winged dove	<i>Zenaida asiatica</i> (Linnaeus, 1758)
dovekie	<i>Alle alle</i> (Linnaeus, 1758)
dowitcher	
long-billed dowitcher	<i>Limnodromus scolopaceus</i> (Say, 1823)
short-billed dowitcher	<i>Limnodromus griseus</i> (Gmelin, 1789)
duck	
American black duck	<i>Anas rubripes</i> Brewster, 1902
eastern spot-billed duck	<i>Anas zonorhyncha</i> Forster, 1781
falcated duck	<i>Anas falcata</i> Georgi, 1775
harlequin duck	<i>Histrionicus histrionicus</i> (Linnaeus, 1758)
long-tailed duck	<i>Clangula hyemalis</i> (Linnaeus, 1758)
ring-necked duck	<i>Aythya collaris</i> (Donovan, 1809)
ruddy duck	<i>Oxyura jamaicensis</i> (Gmelin, 1789)
tufted duck	<i>Aythya fuligula</i> (Linnaeus, 1758)
wood duck	<i>Aix sponsa</i> (Linnaeus, 1758)
<i>(See separate alphabetical listings for canvasback, eider, gadwall, garganey, goose, goldeneye, loon, mallard, merganser, redhead, scaup, scoter, teal, and wigeon.)</i>	
dunlin	<i>Calidris alpina</i> (Linnaeus, 1758)

E

eagle	
bald eagle	<i>Haliaeetus leucocephalus</i> (Linnaeus, 1766)
golden eagle	<i>Aquila chrysaetos</i> (Linnaeus, 1758)
Steller's sea-eagle	<i>Haliaeetus pelagicus</i> (Pallas, 1811)
white-tailed eagle	<i>Haliaeetus albicilla</i> (Linnaeus, 1758)
egret	
cattle egret	<i>Bubulous ibis</i> (Linnaeus, 1758)
Chinese egret	<i>Egretta eulophotes</i> (Swinhoe, 1860)
great egret	<i>Ardea albus</i> (Linnaeus, 1758)
intermediate egret	<i>Mesophoyx intermedia</i> Wagler, 1827
little egret	<i>Egretta garzetta</i> Linnaeus, 1766
eider	
common eider	<i>Somateria mollissima</i> (Linnaeus, 1758)
king eider	<i>Somateria spectabilis</i> (Linnaeus, 1758)
spectacled eider	<i>Somateria fischeri</i> (Brandt, 1847)
Steller's eider	<i>Polysticta stelleri</i> (Pallas, 1769)

F

falcon	
gyrfalcon	<i>Falco rusticolus</i> Linnaeus, 1758
peregrine falcon	<i>Falco peregrinus</i> Tunstall, 1771
fieldfare	<i>Turdus pilaris</i> Linnaeus, 1758

Common Name	Scientific Name
finch	
American goldfinch	<i>Carduelis tristis</i> (Linnaeus, 1758)
Cassin's finch	<i>Carpodacus cassinii</i> Baird, 1854
common rosefinch	<i>Carpodacus erythrinus</i> (Pallas, 1770)
Eurasian bullfinch	<i>Pyrrhula pyrrhula</i> (Linnaeus, 1758)
hawfinch	<i>Coccothraustes coccothraustes</i> (Linnaeus, 1758)
house finch	<i>Carpodacus mexicanus</i> (Say, 1823)
oriental greenfinch	<i>Carduelis sinica</i> (Linnaeus, 1766)
purple finch	<i>Carpodacus purpureus</i> (Gmelin, 1789)
gray-crowned rosy-finch	<i>Leucosticte tephrocotis</i> (Swainson, 1832)
flicker, northern	<i>Colaptes auratus</i> (Linnaeus, 1758)
flycatcher	
alder flycatcher	<i>Empidonax alnorum</i> Brewster, 1895
dark-sided flycatcher (or Siberian flycatcher)	<i>Muscicapa sibirica</i> Gmelin, 1789
dusky flycatcher	<i>Empidonax oberholseri</i> Phillips, 1939
gray-streaked flycatcher	<i>Muscicapa griseisticta</i> (Swinhoe, 1861)
Asian brown [grey-breasted] flycatcher	<i>Muscicapa dauurica</i> Pallas, 1811
great crested flycatcher	<i>Myiarchus crinitus</i> (Linnaeus, 1758)
Hammond's flycatcher	<i>Empidonax hammondii</i> (Xántus de Vesey, 1858)
least flycatcher	<i>Empidonax minimus</i> (Baird & Baird, 1843)
narcissus flycatcher	<i>Ficedula narcissina</i> (Temminck, 1835)
olive-sided flycatcher	<i>Contopus cooperi</i> (Swainson, 1832)
Pacific-slope flycatcher	<i>Empidonax difficilis</i> Baird, 1858
scissor-tailed flycatcher	<i>Tryannus forficatus</i> (Gmelin, 1789)
taiga flycatcher	<i>Ficedula albicilla</i> (Pallas, 1811)
willow flycatcher	<i>Empidonax traillii</i> (Audubon, 1828)
yellow-bellied flycatcher	<i>Empidonax flaviventris</i> (Baird & Baird, 1843)
frigatebird, magnificent	<i>Fregata magnificens</i> Matthews, 1914
fulmar, northern	<i>Fulmarus glacialis</i> (Linnaeus, 1761)
G	
gadwall	<i>Anas strepera</i> Linnaeus, 1758
garganey	<i>Anas querquedula</i> Linnaeus, 1758
godwit	
bar-tailed godwit	<i>Limosa lapponica</i> (Linnaeus, 1758)
black-tailed godwit	<i>Limosa limosa</i> (Linnaeus, 1758)
Hudsonian godwit	<i>Limosa haemastica</i> (Linnaeus, 1758)
marbled godwit	<i>Limosa fedoa</i> (Linnaeus, 1758)
goldeneye	
Barrow's goldeneye	<i>Bucephala islandica</i> (Gmelin, 1789)
common goldeneye	<i>Bucephala clangula</i> (Linnaeus, 1758)
goose	
brant	<i>Branta bernicla</i> (Linnaeus, 1758)
cackling goose	<i>Branta hutchinsii</i> (Richardson, 1832)
Canada goose	<i>Branta canadensis</i> (Linnaeus, 1758)
emperor goose	<i>Chen canagica</i> (Sevastianov, 1802)
greater white-fronted goose	<i>Anser albifrons</i> (Scopoli, 1769)
lesser white-fronted goose	<i>Anser erythropus</i> (Linnaeus, 1758)
Ross's goose	<i>Chen rossii</i> (Cassin, 1861)
snow goose	<i>Chen caerulescens</i> (Linnaeus, 1758)
grackle, common	<i>Quiscalus quiscula</i> (Linnaeus, 1758)

Common Name

Scientific Name

grebe

eared grebe

Podiceps nigricollis Brehm, 1831

horned grebe

Podiceps auritus (Linnaeus, 1758)

pied-billed grebe

Podilymbus podiceps (Linnaeus, 1758)

red-necked grebe

Podiceps grisegena (Boddaert, 1783)

western grebe

Aechmophorus occidentalis (Lawrence, 1858)

greenshank, common

Tringa nebularia (Gunnerus, 1767)

grosbeak

black-headed grosbeak

Pheucticus melanocephalus (Swainson, 1827)

blue grosbeak

Guiraca caerulea (Linnaeus, 1758)

evening grosbeak

Coccothraustes vespertinus (Cooper, 1825)

pine grosbeak

Pinicola enucleator (Linnaeus, 1758)

rose-breasted grosbeak

Pheucticus ludovicianus (Linnaeus, 1766)

grouse

dusky grouse

Dendragapus obscurus Elliot, 1823

ruffed grouse

Bonasa umbellus (Linnaeus, 1766)

sharp-tailed grouse

Tympanuchus phasianellus (Linnaeus, 1758)

sooty grouse

Dendragapus fuliginosus (Ridgway 1873)

spruce grouse

Dendragapus canadensis (Linnaeus, 1758)

guillemot

black guillemot

Cephus grylle (Linnaeus, 1758)

pigeon guillemot

Cephus columba Pallas, 1811

gull

black-headed gull

Chroicocephalus ridibundus Linnaeus, 1766

black-tailed gull

Larus crassirostris Vieillot, 1818

Bonaparte's gull

Chroicocephalus philadelphia (Ord, 1815)

California gull

Larus californicus Lawrence, 1854

Franklin's gull

Chroicocephalus pipixcan Wagler, 1831

glaucous gull

Larus hyperboreus Gunnerus, 1767

glaucous-winged gull

Larus glaucescens (Naumann, 1840)

great black-backed gull

Larus marinus (Linnaeus, 1758)

Heermann's gull

Larus heermanni Cassin, 1852

herring gull

Larus argentatus Pontoppidan, 1763

Iceland gull

Larus glaucooides (includes *thayeri*) Meyer, 1822

ivory gull

Pagophila eburnea (Phipps, 1774)

lesser black-backed gull

Larus fuscus Linnaeus, 1758

little gull

Hydrocoloeus minutus (Pallas, 1776)

mew gull

Larus canus Linnaeus, 1758

ring-billed gull

Larus delawarensis Ord, 1815

Ross's gull

Rhodostethia rosea (MacGillivray, 1824)

Sabine's gull

Xema sabini (Sabine, 1819)

slaty-backed gull

Larus schistisagus Stejneger, 1884

western gull

Larus occidentalis Audubon, 1839

H

harrier, northern

Circus cyaneus (Linnaeus, 1766)

hawk

goshawk, northern

Accipiter gentilis (Linnaeus, 1758)

red-tailed hawk

Buteo jamaicensis (Gmelin, 1788)

rough-legged hawk

Buteo lagopus (Pontoppidan, 1763)

sharp-shinned hawk

Accipiter striatus Vieillot, 1808

Swainson's hawk

Buteo swainsoni Bonaparte, 1838

(See also separate listing for falcon.)

Common Name

Scientific Name

heron

Chinese pond heron	<i>Ardeola bacchus</i> (Bonaparte, 1855)
black-crowned night heron	<i>Nycticorax nycticorax</i> (Linnaeus, 1758)
gray heron	<i>Ardea cinerea</i> Linnaeus, 1758
great blue heron	<i>Ardea herodias</i> Linnaeus, 1758
green heron	<i>Butorides virescens</i> (Mearns, 1895)
tricolored heron	<i>Egretta tricolor</i> Statius Muller, 1776
<i>(See also separate listing for bittern and egret.)</i>	

hobby, Eurasian

Falco subbuteo Linnaeus, 1758

hoopoe, common

Upupa epops Linnaeus, 1758

hummingbird

Anna's hummingbird	<i>Calypte anna</i> (Lesson, 1829)
Costa's hummingbird	<i>Calypte costae</i> (Bourcier, 1839)
rufous hummingbird	<i>Selasphorus rufus</i> (Gmelin, 1788)
ruby-throated hummingbird	<i>Archilochus colubris</i> (Linnaeus, 1758)

I

J

jaeger

long-tailed jaeger	<i>Stercorarius longicaudus</i> Vieillot, 1819
parasitic jaeger	<i>Stercorarius parasiticus</i> (Linnaeus, 1758)
pomarine jaeger	<i>Stercorarius pomarinus</i> (Temminck, 1815)

jay

gray jay	<i>Perisoreus canadensis</i> (Linnaeus, 1766)
Steller's jay	<i>Cyanocitta stelleri</i> (Gmelin, 1788)
junco, dark-eyed	<i>Junco hyemalis</i> (Linnaeus, 1758)

K

kestrel

American kestrel	<i>Falco sparverius</i> Linnaeus, 1758
Eurasian kestrel	<i>Falco tinnunculus</i> Linnaeus, 1758
killdeer	<i>Charadrius vociferus</i> Linnaeus, 1758

kingbird

eastern kingbird	<i>Tyrannus tyrannus</i> (Linnaeus, 1758)
tropical kingbird	<i>Tyrannus melancholicus</i> Vieillot, 1819
western kingbird	<i>Tyrannus verticalis</i> Say, 1823
kingfisher, belted	<i>Megaceryle alcyon</i> (Linnaeus, 1758)

kinglet

golden-crowned kinglet	<i>Regulus satrapa</i> Lichtenstein, 1823
ruby-crowned kinglet	<i>Regulus calendula</i> (Linnaeus, 1766)

kittiwake

black-legged kittiwake	<i>Rissa tridactyla</i> (Linnaeus, 1758)
red-legged kittiwake	<i>Rissa brevirostris</i> (Bruch, 1853)

knot

great knot	<i>Calidris tenuirostris</i> (Horsfield, 1821)
red knot	<i>Calidris canutus</i> (Linnaeus, 1758)

L

lapwing, northern

Vanellus vanellus (Linnaeus, 1758)

lark, horned

Eremophila alpestris (Linnaeus, 1758)

Common Name

Scientific Name

longspur

Lapland longspur

Smith's longspur

Calcarius lapponicus (Linnaeus, 1758)*Calcarius pictus* (Swainson, 1832)

loon

Arctic loon

common loon

Pacific loon

red-throated loon

yellow-billed loon

Gavia arctica (Linnaeus, 1758)*Gavia immer* (Brünnich, 1764)*Gavia pacifica* (Lawrence, 1858)*Gavia stellata* (Pontoppidan, 1763)*Gavia adamsii* (Gray, 1859)

M

magpie, black-billed

mallard

martin

common house martin

purple martin

meadowlark, western

merganser

common merganser

hooded merganser

red-breasted merganser

merlin

mockingbird, northern

murre

common murre

thick-billed murre

murrelet

ancient murrelet

Kittlitz's murrelet

long-billed murrelet

marbled murrelet

Pica hudsonia (Linnaeus, 1758)*Anas platyrhynchos* Linnaeus, 1758*Delichon urbica* (Linnaeus, 1758)*Progne subis* (Linnaeus, 1758)*Sturnella neglecta* Audubon, 1844*Mergus merganser* Linnaeus, 1758*Lophodytes cucullatus* (Linnaeus, 1758)*Mergus serrator* Linnaeus, 1758*Falco columbarius* Linnaeus, 1758*Mimus polyglottos* (Linnaeus, 1758)*Uria aalge* (Pontoppidan, 1763)*Uria lomvia* (Linnaeus, 1758)*Synthliboramphus antiquus* (Gmelin, 1789)*Brachyramphus brevirostris* (Vigors, 1829)*Brachyramphus peridx* (Pallas, 1811)*Brachyramphus marmoratus* (Gmelin, 1789)

N

needletail, white-throated

nighthawk

common nighthawk

lesser nighthawk

nightjar, gray

nutcracker, Clark's

nuthatch, red-breasted

Hirundapus caudacutus (Latham, 1801?)*Chordeiles minor* (Forster, 1771)*Chordeiles acutipennis* (Hermann, 1783)*Caprimulgus indicus* Latham, 1790*Nucifraga columbiana* (Wilson, 1811)*Sitta canadensis* Linnaeus, 1766

9

O

oriole

Bullock's oriole

orchard oriole

osprey

ovenbird

owl

barred owl

boreal owl

Icterus bullockii (Swainson, 1827)*Icterus spurius* (Linnaeus, 1766)*Pandion haliaetus* (Linnaeus, 1758)*Seiurus aurocapillus* (Linnaeus, 1766)*Strix varia* Barton, 1799*Aegolius funereus* (Linnaeus, 1758)

Common Name

Scientific Name

owl (continued)

brown hawk-owl	<i>Ninox scutulata</i> Raffles, 1822
great gray owl	<i>Strix nebulosa</i> Forster, 1772
great horned owl	<i>Bubo virginianus</i> (Gmelin, 1788)
long-eared owl	<i>Asio otus</i> (Linnaeus, 1758)
northern hawk owl	<i>Surnia ulula</i> (Linnaeus, 1758)
northern pygmy-owl	<i>Glaucidium gnoma</i> Wagler, 1832
northern saw-whet owl	<i>Aegolius acadicus</i> (Gmelin, 1788)
oriental scops-owl	<i>Otus sunia</i> (Hodgson, 1836)
short-eared owl	<i>Asio flammeus</i> (Pontoppidan, 1763)
snowy owl	<i>Bubo scandiaca</i> (Linnaeus, 1758)
western screech-owl	<i>Megascops kennicottii</i> (Elliot, 1867)
oystercatcher, black	<i>Haematopus bachmani</i> (Audubon, 1838)

P

pelican

American white	<i>Pelecanus erythrorhynchos</i> Gmelin, 1789
brown pelican	<i>Pelecanus occidentalis</i> Linnaeus, 1766

petrel

Cook's petrel	<i>Pterodroma cookii</i> (Gray, 1843)
fork-tailed storm-petrel	<i>Oceanodroma furcata</i> (Gmelin, 1789)
Leach's storm-petrel	<i>Oceanodroma leucorhoa</i> (Vieillot, 1818)
mottled petrel	<i>Pterodroma inexpectata</i> (Forster, 1844)

phalarope

red-necked phalarope	<i>Phalaropus lobatus</i> (Linnaeus, 1758)
red phalarope	<i>Phalaropus fulicaria</i> (Linnaeus, 1758)
Wilson's phalarope	<i>Phalaropus tricolor</i> (Vieillot, 1819)

phoebe

black phoebe	<i>Sayornis nigricans</i> Swainson, 1827
eastern phoebe	<i>Sayornis phoebe</i> (Latham, 1790)
Say's phoebe	<i>Sayornis saya</i> (Bonaparte, 1825)

pigeon, band-tailed

Columba fasciata Say, 1823

pintail, northern

Anas acuta Linnaeus, 1758

pipit

American pipit	<i>Anthus rubescens</i> (Tunstall, 1771)
olive backed-pipit	<i>Anthus hodgsoni</i> Richmond, 1818
Pechora pipit	<i>Anthus gustavi</i> Swinhoe, 1863
red-throated pipit	<i>Anthus cervinus</i> (Pallas, 1811)
tree pipit	<i>Anthus trivialis</i> (Linnaeus, 1758)

plover

American golden plover	<i>Pluvialis dominica</i> (Müller, 1776)
black-bellied plover	<i>Pluvialis squatarola</i> (Linnaeus, 1758)
common ringed plover	<i>Charadrius hiaticula</i> Linnaeus, 1758
European golden plover	<i>Pluvialis apricaria</i> Linnaeus, 1758
lesser sand-plover	<i>Charadrius mongolus</i> Pallas, 1776
little ringed plover	<i>Charadrius dubius</i> Scopoli, 1786
Pacific golden-plover	<i>Pluvialis fulva</i> (Gmelin, 1789)
semipalmated plover	<i>Charadrius semipalmatus</i> Bonaparte, 1824
snowy plover	<i>Charadrius alexandrinus</i> Linnaeus, 1758
pochard, common	<i>Aythya ferina</i> (Linnaeus, 1758)
pratincole, oriental	<i>Glareola maldivarum</i> Forster, 1795

Common Name

Scientific Name

ptarmigan

- rock ptarmigan
- white-tailed ptarmigan
- willow ptarmigan

Lagopus mutus (Montin, 1776)
Lagopus leucurus (Richardson, 1831)
Lagopus lagopus (Linnaeus, 1758)

puffin

- horned puffin
- tufted puffin

Fratercula corniculata (Naumann, 1821)
Fratercula cirrhata (Pallas, 1769)

Q

R

rail, Virginia

Rallus limicola Vieillot, 1819

raven, common

Corvus corax Linnaeus, 1758

redhead

Aythya americana (Eyton, 1838)

redpoll

- common redpoll
- hoary redpoll

Carduelis flammea (Linnaeus, 1758)
Carduelis hornemanni Holböll, 1843

redshank, spotted

Tringa erythropus (Pallas, 1764)

redstart, American

Setophaga ruticilla (Linnaeus, 1758)

robin

- American robin
- rufous-tailed robin
- Siberian blue robin

Turdus migratorius Linnaeus, 1766
Luscinia sibilans (Swinhoe, 1863)
Luscinia cyane (Pallas, 1776)

rubythroat, Siberian

Luscinia calliope (Pallas, 1776)

ruff

Philomachus pugnax (Linnaeus, 1758)

S

sanderling

Calidris alba (Pallas, 1764)

sandpiper

- Baird's sandpiper
- broad-billed sandpiper
- buff-breasted sandpiper
- common sandpiper
- curlew sandpiper
- green sandpiper
- least sandpiper
- marsh sandpiper
- pectoral sandpiper
- purple sandpiper
- rock sandpiper
- semipalmated sandpiper
- sharp-tailed sandpiper
- solitary sandpiper
- spoonbill sandpiper
- spotted sandpiper
- stilt sandpiper
- Terek sandpiper
- upland sandpiper
- western sandpiper
- white-rumped sandpiper
- wood sandpiper

Calidris bairdii (Coues, 1861)
Limicola falcinellus (Pontoppidan, 1763)
Tryngites subruficollis (Vieillot, 1819)
Actitis hypoleucos (Linnaeus, 1758)
Calidris ferruginea (Pontoppidan, 1763)
Tringa ochropus Linnaeus, 1758
Calidris minutilla (Vieillot, 1819)
Tringa stagnatilis (Bechstein, 1803)
Calidris melanotos (Vieillot, 1819)
Calidris maritima (Brünnich, 1764)
Calidris ptilocnemis (Coues, 1873)
Calidris pusilla (Linnaeus, 1766)
Calidris acuminata (Horsfield, 1821)
Tringa solitaria Wilson, 1813
Eurynorhynchus pygmeus (Linnaeus, 1758)
Actitis macularia (Linnaeus, 1766)
Calidris himantopus (Bonaparte, 1826)
Xenus cinereus (Güldenstädt, 1775)
Bartramia longicauda (Bechstein, 1812)
Calidris mauri (Cabanis, 1857)
Calidris fuscicollis (Vieillot, 1819)
Tringa glareola Linnaeus, 1758

Common Name	Scientific Name
sapsucker	
red-breasted sapsucker	<i>Sphyrapicus ruber</i> (Gmelin, 1788)
yellow-bellied sapsucker	<i>Sphyrapicus varius</i> (Linnaeus, 1766)
scaup	
greater scaup	<i>Aythya marila</i> (Linnaeus, 1861)
lesser scaup	<i>Aythya affinis</i> (Eyton, 1838)
scoter	
black scoter	<i>Melanitta nigra</i> (Linnaeus, 1758)
surf scoter	<i>Melanitta perspicillata</i> (Linnaeus, 1758)
white-winged scoter	<i>Melanitta fusca</i> (Linnaeus, 1758)
shearwater	
Buller's shearwater	<i>Puffinus bulleri</i> (Salvin, 1888)
greater shearwater	<i>Puffinus gravis</i> (O'Reilly 1818)
Manx shearwater	<i>Puffinus puffinus</i> (Brünnich, 1764)
pink-footed shearwater	<i>Puffinus creatopus</i> Coues, 1864
short-tailed shearwater	<i>Puffinus tenuirostris</i> (Temminck, 1835)
sooty shearwater	<i>Puffinus griseus</i> (Gmelin, 1789)
shoveler, northern	<i>Anas clypeata</i> Linnaeus, 1758
shrike	
brown shrike	<i>Lanius cristatus</i> Linnaeus, 1758
northern shrike	<i>Lanius excubitor</i> Linnaeus, 1758
siskin	
Eurasian siskin	<i>Carduelis spinus</i> (Linnaeus, 1758)
pine siskin	<i>Carduelis pinus</i> (Wilson, 1810)
skua, South Polar	<i>Stercorarius maccormicki</i> (Saunders, 1893)
sky lark	<i>Alauda arvensis</i> Linnaeus, 1758
smew	<i>Mergellus albellus</i> (Linnaeus, 1758)
snipe	
common snipe	<i>Gallinago gallinago</i> (Linnaeus, 1758)
jack snipe	<i>Lymnocyptes minimus</i> (Brünnich, 1764)
pin-tailed snipe	<i>Gallinago stenura</i> (Bonaparte, 1830)
Wilson's snipe	<i>Gallinago delicata</i> Ord 1825
solitaire, Townsend's	<i>Myadestes townsendi</i> (Audubon, 1838)
sora	<i>Porzana carolina</i> (Linnaeus, 1758)
sparrow	
American tree sparrow	<i>Spizella arborea</i> (Wilson, 1810)
Brewer's sparrow	<i>Spizella breweri</i> (Swarth and A. Brooks, 1925)
chipping sparrow	<i>Spizella passerina</i> (Bechstein, 1798)
clay-colored sparrow	<i>Spizella pallida</i> (Swainson, 1832)
fox sparrow	<i>Passerella iliaca</i> (Merrem, 1786)
golden-crowned sparrow	<i>Zonotrichia atricapilla</i> (Gmelin, 1789)
Harris's sparrow	<i>Zonotrichia querula</i> (Nuttall, 1840)
house sparrow	<i>Passer domesticus</i> (Linnaeus, 1758)
lark sparrow	<i>Chondestes grammacus</i> (Say, 1823)
Lincoln's sparrow	<i>Melospiza lincolni</i> (Audubon, 1834)
Savannah sparrow	<i>Passerculus sandwichensis</i> (Gmelin, 1789)
song sparrow	<i>Melospiza melodia</i> (Wilson, 1810)
swamp sparrow	<i>Melospiza georgiana</i> (Latham, 1790)
white-crowned sparrow	<i>Zonotrichia leucophrys</i> (Forster, 1772)
white-throated sparrow	<i>Zonotrichia albicollis</i> (Gmelin, 1789)
vesper sparrow	<i>Poocetes gramineus</i> Gmelin 1789
starling, European	<i>Sturnus vulgaris</i> Linnaeus, 1758
stilt, black-winged	<i>Himantopus himantopus</i> (Linnaeus, 1758)

Common Name

Scientific Name

stint

- little stint
- long-toed stint
- red-necked stint
- Temminck's stint

- Calidris minuta* (Leisler, 1812)
- Calidris subminuta* (Middendorff, 1851)
- Calidris ruficollis* (Pallas, 1776)
- Calidris temminckii* (Leisler, 1812)
- Saxicola torquata* (Linnaeus, 1766)
- Aphriza virgata* (Gmelin, 1789)

stonechat

surfbird

swallow

- bank swallow
- barn swallow
- cliff swallow
- northern rough-winged swallow
- tree swallow
- violet-green swallow

- Riparia riparia* (Linnaeus, 1758)
- Hirundo rustica* Linnaeus, 1758
- Petrochelidon pyrrhonota* Vieillot, 1817
- Stelgidopteryx serripennis* (Audubon, 1838)
- Tachycineta bicolor* (Vieillot, 1808)
- Tachycineta thalassina* (Swainson, 1827)

swan

- trumpeter swan
- tundra swan
- whooper swan

- Cygnus buccinator* Richardson, 1832
- Cygnus columbianus* (Ord, 1815)
- Cygnus cygnus* (Linnaeus, 1758)

swift

- black swift
- chimney swift
- common swift
- fork-tailed swift
- Vaux's swift

- Cypseloides niger* (Gmelin, 1789)
- Chaetura pelagica* (Linnaeus, 1758)
- Apus apus* (Linnaeus, 1758)
- Apus pacificus* (Latham, 1801)
- Chaetura vauxi* (Townsend, 1839)

T

tanager

- scarlet tanager
- western tanager

- Piranga olivacea* (Gmelin, 1789)
- Piranga ludoviciana* (Wilson, 1789)

tattler

- gray-tailed tattler
- wandering tattler

- Tringa brevipes* (Vieillot, 1816)
- Tringa incanus* (Gmelin, 1789)

teal

- blue-winged teal
- Baikal teal
- cinnamon teal
- green-winged teal

- Anas discors* Linnaeus, 1766
- Anas formosa* Georgi, 1775
- Anas cyanoptera* Vieillot, 1816
- Anas crecca* Linnaeus, 1758

tern

- Aleutian tern
- Arctic tern
- black tern
- Caspian tern
- common tern
- sooty tern
- white-winged tern

- Onychoprion aleutica* Baird, 1869
- Sterna paradisaea* Pontoppidan, 1763
- Chlidonias niger* (Linnaeus, 1758)
- Hydropronge caspia* Pallas, 1770
- Sterna hirundo* Linnaeus, 1758
- Onychoprion fuscata* (Nuttall, 1834)
- Chlidonias leucopterus* (Temminck, 1815)
- Toxostoma rufum* (Linnaeus, 1758)

thrasher, brown

thrush

- dusky thrush
- eye-browed thrush
- gray-cheeked thrush
- hermit thrush
- Swainson's thrush
- varied thrush

- Turdus naumanni* Temminck, 1820
- Turdus obscurus* Gmelin, 1789
- Catharus minimus* (Lafresnaye, 1848)
- Catharus guttatus* (Pallas, 1811)
- Catharus ustulatus* (Nuttall, 1840)
- Ixoreus naevius* (Gmelin, 1789)

Common Name

Scientific Name

towhee, spotted
turnstone

Pipilo maculatus (Swainson, 1832)

black turnstone
ruddy turnstone

Arenaria melanocephala (Vigors, 1829)
Arenaria interpres (Linnaeus, 1758)

U

V

veery
vireo

Catharus fuscescens (Stephens, 1817)

Cassin's vireo
Philadelphia vireo
red-eyed vireo
warbling vireo
vulture, turkey

Vireo cassinii (Wilson, 1810)
Vireo philadelphicus (Cassin, 1851)
Vireo olivaceus (Linnaeus, 1766)
Vireo gilvus (Vieillot, 1808)
Cathartes aura (Linnaeus, 1758)

W

wagtail

eastern yellow wagtail
gray wagtail
white wagtail

Motacilla tschutschensis Linnaeus, 1758
Motacilla cinerea Tunstall, 1771
Motacilla alba Linnaeus, 1758

warbler

Arctic warbler
black-and-white warbler
blackpoll warbler
black-throated blue warbler
black-throated green warbler
Canada warbler
Cape May warbler
chestnut-sided warbler
dusky warbler
lanceolated warbler
lesser whitethroat warbler
MacGillivray's warbler
magnolia warbler
Middendorff's grasshopper-warbler
mourning warbler
Nashville warbler
orange-crowned warbler
palm warbler
prairie warbler
Sedge warbler
Tennessee warbler
Townsend's warbler
Wilson's warbler
wood warbler
willow warbler
yellow warbler
yellow-browed warbler
yellow-rumped warbler
waterthrush, northern

Phylloscopus borealis (Blasius, 1858)
Mniotilta varia (Linnaeus, 1766)
Dendroica striata (Forster, 1772)
Dendroica caerulescens (Gmelin 1789)
Dendroica virens (Gmelin, 1789)
Wilsonia canadensis (Linnaeus, 1766)
Dendroica trigrina (Gmelin, 1789)
Dendroica pensylvanica (Linnaeus, 1766)
Phylloscopus fuscatus (Blyth, 1842)
Locustella lanceolata (Temminck, 1840)
Sylvia curruca (Linnaeus, 1758)
Oporornis tolmiei (Townsend, 1839)
Dendroica magnolia (Wilson, 1811)
Locustella ochotensis (Middendorff, 1853)
Oporornis philadelphia (Wilson, 1810)
Vermivora ruficapilla (Wilson, 1811)
Vermivora celata (Say, 1823)
Dendroica palmarum (Gmelin, 1789)
Dendroica discolor (Vieillot, 1808)
Acrocephalus schoenobaenus (Linnaeus, 1758)
Vermivora peregrina (Wilson, 1811)
Dendroica townsendi (Townsend, 1837)
Wilsonia pusilla (Wilson, 1811)
Phylloscopus sibilatrix (Bechstein, 1793)
Phylloscopus trochilus (Linnaeus, 1758)
Dendroica petechia (Linnaeus, 1766)
Phylloscopus inoratus (Blyth, 1842)
Dendroica coronata (Linnaeus, 1766)
Seiurus noveboracensis (Gmelin, 1789)

Common Name	Scientific Name
waxwing	
Bohemian waxwing	<i>Bombycilla garrulus</i> (Linnaeus, 1758)
cedar waxwing	<i>Bombycilla cedrorum</i> Vieillot, 1808
wheatear, northern	<i>Oenanthe oenanthe</i> (Linnaeus, 1758)
whimbrel	<i>Numenius phaeopus</i> (Linnaeus, 1758)
whip-poor-will	<i>Caprimulgus vociferus</i> Wilson, 1812
wigeon	
Eurasian wigeon	<i>Anas penelope</i> Linnaeus, 1758
American wigeon	<i>Anas americana</i> Gmelin, 1789
woodpecker	
American three-toed woodpecker	<i>Picoides dorsalis</i> (Linnaeus, 1758)
black-backed woodpecker	<i>Picoides arcticus</i> (Swainson, 1832)
downy woodpecker	<i>Picoides pubescens</i> (Linnaeus, 1766)
great spotted woodpecker	<i>Dendrocopos major</i> (Linnaeus, 1758)
hairy woodpecker	<i>Picoides villosus</i> (Linnaeus, 1766)
wood-pewee, western	<i>Contopus sordidulus</i> Sclater, 1859
wren, winter	<i>Troglodytes troglodytes</i> (Linnaeus, 1758)
wryneck, Eurasian	<i>Jynx torquilla</i> Linnaeus, 1758

X

Y

yellowlegs	
greater yellowlegs	<i>Tringa melanoleuca</i> (Gmelin, 1789)
lesser yellowlegs	<i>Tringa flavipes</i> (Gmelin, 1789)
yellowthroat, common	<i>Geothlypis trichas</i> (Linnaeus, 1766)

9.8 Mammals of Alaska

This list identifies common and species name usage preferred by the department for mammals. It follows *Recent Mammals of Alaska* (MacDonald and Cook 2009), though in a few instances common or species names as identified in other references were preferred. Included here are indigenous species, feral introduced species, species rarely spotted in Alaska, and extinct species, so this list should not be used as a definitive list of native mammal species currently found in Alaska. Consult references listed in Appendix B for more information about these species.

9

Common Name	Scientific Name
bat	
big brown bat	<i>Eptesicus fuscus</i> (Beauvois, 1796)
silver-haired bat	<i>Lasionycteris noctivagans</i> (Le Conte, 1831)
(see also <i>myotis</i>)	
bear	
black and glacier bear ¹	<i>Ursus americanus</i> Pallas, 1780
brown bear or grizzly bear ²	<i>Ursus arctos</i> Linnaeus, 1758
Kodiak bear	<i>Ursus arctos middendorffi</i> Merriam, 1896
polar bear	<i>Ursus maritimus</i> Phipps, 1774

Common Name	Scientific Name
beaver (American)	<i>Castor canadensis</i> Kuhl, 1820
bison ³	
American bison (plains bison)	<i>Bison bison</i> (Linnaeus, 1758)
wood bison	<i>Bison bison athabasca</i> Rhoads, 1898
caribou	<i>Rangifer tarandus</i> (Linnaeus, 1758)
cougar (mountain lion)	<i>Puma concolor</i> (Linnaeus, 1771)
coyote	<i>Canis latrans</i> Say, 1823
deer	
mule deer	<i>Odocoileus hemionus</i> (Rafinesque, 1817)
Sitka black-tailed deer ⁴	<i>Odocoileus hemionus sitkensis</i> (Merriam, 1898)
dolphin	
false killer whale ⁵	<i>Pseudorca crassidens</i> (Owen 1846)
northern right whale dolphin ⁵	<i>Lissodelphis borealis</i> (Peale, 1848)
pantropical spotted dolphin ⁵	<i>Stenella attenuata</i> (Gray 1846)
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i> Gill, 1865
Risso's dolphin ⁵	<i>Grampus griseus</i> (G. Cuvier, 1812)
short-finned pilot whale ⁵	<i>Globicephala macrorhynchus</i> Gray, 1846
elk ⁶	
Rocky Mountain elk	<i>Cervus canadensis nelsoni</i> Linnaeus, 1758
Roosevelt elk	<i>Cervus canadensis roosevelti</i> Linnaeus, 1758
ermine	<i>Mustela erminea</i> Linnaeus, 1758
fisher	<i>Martes pennanti</i> (Erxleben, 1777)
fox	
Arctic fox	<i>Vulpes lagopus</i> (Linnaeus, 1758)
red fox	<i>Vulpes vulpes</i> (Linnaeus, 1758)
goat, mountain	<i>Oreamnos americanus</i> (de Blainville, 1816)
hare	
Alaska hare	<i>Lepus othus</i> Merriam, 1900
snowshoe hare	<i>Lepus americanus</i> Erxleben, 1777
lemming	
brown lemming	<i>Lemmus trimucronatus</i> (Richardson, 1825)
Northern bog lemming (see voles)	
collared lemming	<i>Dicrostonyx groenlandicus</i> (Traill, 1823)
lion, mountain (see <i>cougar</i>)	
lynx (Canadian)	<i>Lynx canadensis</i> Kerr, 1792
marmot	
Alaska marmot	<i>Marmota broweri</i> Hall and Gilmore, 1934
hoary marmot	<i>Marmota caligata</i> (Eschscholtz, 1829)
marten	
American marten	<i>Martes americana</i> (Turton, 1806)
Pacific marten	<i>Martes caurina</i> (Merriam, 1890)
mink (American)	<i>Neovison vison</i> Schreber, 1777
moose ⁷	<i>Alces alces</i> (Linnaeus, 1758)
mouse	
house mouse ⁸	<i>Mus musculus</i> Linnaeus, 1758
North American deer mouse ⁸	<i>Peromyscus maniculatus</i> (Wagner, 1845)
northwestern deer mouse or Keen's mouse	<i>Peromyscus keeni</i> (Rhoads, 1894)
meadow jumping mouse	<i>Zapus hudsonius</i> (Zimmerman, 1780)
western jumping mouse	<i>Zapus princeps</i> J. A. Allen, 1893
muskox, common ⁹	<i>Ovibos moschatus</i> (Zimmermann, 1780)
muskkrat	<i>Ondatra zibethicus</i> (Linnaeus, 1766)

Common Name	Scientific Name
myotis	
California myotis	<i>Myotis californicus</i> (Audubon and Bachman, 1842)
Keen's myotis	<i>Myotis keenii</i> (Merriam, 1895)
little brown myotis (little brown bat)	<i>Myotis lucifugus</i> (LeConte, 1831)
long-legged myotis	<i>Myotis volans</i> (H. Allen, 1866)
otter	
North American river otter (not <i>land</i> otter)	<i>Lontra canadensis</i> (Schreber, 1777)
sea otter	<i>Enhydra lutris</i> (Linnaeus, 1758)
pika, collared	<i>Ochotona collaris</i> (Nelson, 1893)
porcupine (North American)	<i>Erethizon dorsatum</i> (Linnaeus, 1758)
porpoise	
Dall's porpoise	<i>Phocoenoides dalli</i> (True, 1885)
harbor porpoise	<i>Phocoena phocoena</i> (Linnaeus, 1758)
rabbit (European) ¹⁰	<i>Oryctolagus cuniculus</i> (Linnaeus, 1758)
raccoon (Northern) ¹¹	<i>Procyon lotor</i> (Linnaeus, 1758)
rat ¹²	
brown rat (Norway)	<i>Rattus norvegicus</i> (Berkenhout, 1769)
roof rat	<i>Rattus rattus</i> (Linnaeus, 1758)
seal	
bearded seal	<i>Erignathus barbatus</i> (Erleben, 1777)
harbor seal	<i>Phoca vitulina</i> Linnaeus, 1758
harp seal ⁵	<i>Pagophilus groenlandicus</i> Erleben, 1777
hooded seal ⁵	<i>Cystophora cristata</i> (Erleben, 1777)
northern elephant seal	<i>Mirounga angustirostris</i> (Gill, 1866)
northern fur seal	<i>Callorhinus ursinus</i> (Linnaeus, 1758)
ribbon seal	<i>Histiophoca fasciata</i> Zimmermann, 1783
ringed seal	<i>Pusa hispida</i> Schreber, 1775
spotted seal	<i>Phoca largha</i> Pallas, 1811
sea cow, Steller's ¹³	<i>Hydrodamalis gigas</i> (Zimmerman, 1780)
California sea lion	<i>Zalophus californianus</i> (Lesson, 1828)
Steller sea lion ¹⁴	<i>Eumetopias jubatus</i> (Schreber, 1776)
sheep	
Dall sheep	<i>Ovis dalli</i> Nelson, 1884
shrew	
Alaska tiny shrew	<i>Sorex yukonicus</i> Dokuchaev, 1997
American water shrew	<i>Sorex palustris</i> Richardson, 1828
barren ground shrew	<i>Sorex ugyunak</i> Anderson and Rand, 1945
cinereus shrew (common)	<i>Sorex cinereus</i> Kerr, 1792
dusky shrew	<i>Sorex monticolus</i> Merriam, 1890
Glacier Bay water shrew	<i>Sorex alaskanus</i> Merriam, 1900
Pribilof Island shrew	<i>Sorex pribilofensis</i> Merriam, 1895
pygmy shrew	<i>Sorex hoyi</i> Baird, 1857
St. Lawrence Island shrew	<i>Sorex jacksoni</i> Hall and Gilmore, 1932
tundra shrew	<i>Sorex tundrensis</i> Merriam 1900
squirrel	
arctic ground squirrel	<i>Spermophilus parryii</i> (Richardson, 1825)
northern flying squirrel	<i>Glaucomys sabrinus</i> (Shaw, 1801)
red squirrel	<i>Tamiasciurus hudsonicus</i> (Erleben, 1777)
vole	
insular vole	<i>Microtus abbreviatus</i> Miller 1899
long-tailed vole	<i>Microtus longicaudus</i> (Merriam, 1888)
meadow vole	<i>Microtus pennsylvanicus</i> (Ord, 1815)

Common Name	Scientific Name
vole (continued)	
northern bog lemming	<i>Synaptomys borealis</i> (Richardson, 1828)
northern red-backed vole	<i>Myodes rutilus</i> (Pallas, 1779)
singing vole	<i>Microtus miurus</i> Osgood, 1901
southern red-backed vole	<i>Myodes gapperi</i> (Vigors, 1830)
root vole	<i>Microtus oeconomus</i> (Pallas, 1776)
taiga vole (yellow-cheeked)	<i>Microtus xanthognathus</i> (Leach, 1815)
western heather vole	<i>Phenacomys intermedius</i> Merriam, 1889
walrus	<i>Odobenus rosmarus</i> (Linnaeus, 1758)
wapiti (see <i>elk</i>)	
weasel, least	<i>Mustela nivalis</i> Linnaeus, 1766
whale	
Baird's beaked whale	<i>Berardius bairdii</i> Stejneger, 1883
beluga whale (white whale)	<i>Delphinapterus leucas</i> (Pallas, 1776)
blue whale	<i>Balaenoptera musculus</i> (Linnaeus, 1758)
bowhead whale	<i>Balaena mysticetus</i> Linnaeus, 1758
Cuvier's beaked whale	<i>Ziphius cavirostris</i> G. Cuvier, 1823
fin whale	<i>Balaenoptera physalus</i> (Linnaeus, 1758)
gray whale	<i>Eschrichtius robustus</i> (Lilljeborg, 1861)
humpback whale	<i>Megaptera novaeangliae</i> (Borowski, 1781)
killer whale	<i>Orcinus orca</i> (Linnaeus, 1758)
minke whale, common	<i>Balaenoptera acutorostrata</i> Lacépède, 1804
narwhal ⁵	<i>Monodon monoceros</i> Linnaeus, 1758
North Pacific right whale	<i>Eubalaena japonica</i> Lacépède, 1818
pygmy sperm whale	<i>Kogia breviceps</i> Blainville, 1838
sei whale	<i>Balaenoptera borealis</i> Lesson, 1828
sperm whale ¹⁵	<i>Physeter macrocephalus</i> Linnaeus, 1758
Stejneger's beaked whale	<i>Mesoplodon stejnegeri</i> True, 1885
wolf, gray ¹⁶	<i>Canis lupus</i> Linnaeus, 1758
wolverine	<i>Gulo gulo</i> (Linnaeus, 1758)
woodchuck	<i>Marmota monax</i> (Linnaeus, 1758)
woodrat, bushy-tailed	<i>Neotoma cinerea</i> (Ord, 1815)
woolly mammoth ¹³	<i>Mammuthus primigenius</i> (Blumenbach, 1799)

¹ A glacier bear is a black bear. While in the past it has been called a subspecies (*U. a. emmonsii*), taxonomists consider this questionable. ADF&G considers a glacier bear a morph, a different form of black bear, not a subspecies.

² Interior brown bears are often referred to as grizzly bears, but they are the same species.

³ Plains (American) bison is an introduced species transplanted to Alaska; wood bison is a native species that ADF&G plans to reintroduce to its historical range.

⁴ The Sitka black-tailed deer *Odocoileus hemionus sitkensis* is a subspecies of the mule deer *Odocoileus hemionus*.

⁵ These species have been rarely reported in Alaska and are generally not considered resident Alaska species; they are included for writer reference.

⁶ Rocky Mountain and Roosevelt elk were introduced to Alaska.

⁷ There is currently debate among taxonomists as to whether the Alaska moose is *Alces americanus* or *Alces alces*.

⁸ The house mouse and North American deer mouse are nonnative introduced species in Alaska.

⁹ Muskoxen were extirpated in Alaska and later reintroduced from nonnative stocks.

¹⁰ The European rabbit is a nonnative introduced species in Alaska.

¹¹ The raccoon is a nonnative introduced species in Alaska.

- ¹² Rat species are a nonnative introduced species in Alaska.
- ¹³ Steller's sea cow and woolly mammoth are extinct species.
- ¹⁴ We have chosen to use *Steller* instead of *Steller's* for Steller sea lion.
- ¹⁵ There is debate about whether the correct specific name for the sperm whale is *macrocephalus* or *catadon*; we have chosen *macrocephalus*, following Rice (1998).
- ¹⁶ In Alaska, the gray wolf (often called the timber wolf) has two subspecies, *Canis lupus arctos* and *Canis lupus nubilus*. *C. lupus nubilus* inhabit Yakutat Bay south to Dixon Entrance, including all islands (except Admiralty, Baranof, and Chichagof, which have no wolves). All other wolves in Alaska are classified as *C. lupus arctos*.

9.9 Amphibians and Reptiles of Alaska

This checklist is based on the *Alaska Natural Heritage Program Amphibian and Reptile Tracking List, 2007*. Further information is available in the standard references (see Appendix B).

Common Name	Scientific Name
frog	
Columbia spotted frog	<i>Rana luteiventris</i> Thompson, 1913
Pacific chorus frog	<i>Pseudacris regilla</i> Baird and Girard, 1852
wood frog	<i>Rana sylvatica</i> LeConte, 1825
red-legged frog	<i>Rana aurora</i> Baird and Girard, 1852
nwt, roughskin	<i>Taricha granulosa</i> Skilton, 1849
salamander	
long-toed salamander	<i>Ambystoma marcodactylum</i> Baird, 1849
northwestern salamander	<i>Ambystoma gracile</i> (Baird, 1857[1859])
toad, western	<i>Bufo boreas</i> Baird and Girard, 1852
turtle	
green turtle	<i>Chelonia mydas</i> (Linnaeus, 1758)
leatherback	<i>Dermochelys coriacea</i> Vandelli 1761
loggerhead	<i>Caretta caretta</i> (Linnaeus, 1758)
Pacific ridley	<i>Lepidochelys olivacea</i> (Linnaeus, 1758)

Section 10: Punctuation Format and Abbreviations

10.1 Parentheses

Parentheses, em dashes, and commas serve similar purposes but differ in one important respect: parentheses can set off only nonessential elements, but em dashes can set off both essential and nonessential elements. Em dashes represent the most forceful type of interruption, and commas the least.

The text within parentheses must be grammatically independent of the sentence carrying it, and can be a word, a phrase, an entire sentence, a number or an abbreviation.

For parenthetical items falling within a sentence, punctuation falls outside the closing parenthesis.

Use: For Jane there is only one goal (and you know it): getting that MBA.

Do not use a period before the closing parenthesis except with an abbreviation.

Use: She prepared all the Thanksgiving dishes (turkey, stuffing, sweet potatoes, etc.).

10.2 Square Brackets

The term *brackets* is often used for square brackets [], but can also be applied to

- parentheses, or round brackets (),
- the bracket pair, often called braces or curly brackets { }, and
- angle brackets < >.

Hence the term *square brackets* is preferred. Square brackets are used in the following instances:

1. To distinguish text or letters added (by someone other than the original writer) to quoted text to clarify the original text,

Use: Cushing commented, “When Osler moved [to Baltimore], he was not risking his future.”

2. To separate an editorial comment,

Use: His diary included this note: “When I was in London I briefly met Darwynne [sic], that horrible chap who claims we are descended from monkeys.”

The notation [sic] is from the Latin for *thus*, and is used to tell the reader that the mistake was in the original quoted text. The use of [sic] presumes that the reader knows the correct form. Latin abbreviations accepted as common terms are not italicized. A more helpful notation is a correction of the error, enclosed in square brackets like [sic].

3. To enclose a parenthetical statement within a parenthetical statement enclosed by parentheses.

Use: The vaccination was given (according to current [2009] recommendations).

10.3 Braces and Angle Brackets

Braces ({}), also called curly brackets, are used in programming languages and mathematical and other specialized writing, and are not interchangeable with parentheses or brackets.

Angle brackets are used in electronic manuscript preparation to code instructions to a typesetter. They look similar to the mathematical signs for *less than* (<) and *greater than* (>), but should not be confused with them. Angle brackets should not be used to set off URLs and e-mail addresses, as they have specific meaning within some markup languages (including html).

10.4 Comma, Semicolon, and Colon Use in a Series

a. Comma use in a series

When independent clauses are joined by *and*, *but*, *or*, *so*, *yet*, or any other conjunction, a comma usually precedes the conjunction. If the clauses are very short and closely connected, the comma may be omitted if it will not cause ambiguity. If the last element is one of a pair joined by *and*, the pair should still be preceded by a serial comma and the first *and*.

Use: The client, the lawyer, and the accountant were exiting the meeting. [comma precedes conjunction]

We cannot fly home until after the meeting, but we could leave first thing in the morning. [comma precedes conjunction]

We finished the map and Acme printed it. [comma not needed, short clauses]

The meal consisted of soup, salad, and macaroni and cheese. [last element is one of a pair joined by *and*]

In a series of elements joined by conjunctions, no commas are needed unless the elements are long.

Use: Is the book by Smith or Jones or Johnson?

You can turn right at the stop light and left when you reach the library, or left at the coffee shop up the street.

When a dependent clause precedes an independent clause, separate the clauses with a comma (Gregg 2005). The words *after*, *although*, *as*, *because*, *before*, *if*, *since*, *unless*, *when*, and *while* are among the words most frequently used to introduce dependent clauses.

- Use: Before we make a decision, we must have all the facts. [comma after introductory dependent clause]
 When the sonar estimates are in, we can make a decision about the fishery. [comma after introductory dependent clause]

When a dependent clause follows the main clause, it should not be preceded by a comma if it is restrictive (essential to the meaning).

- Use: We must have all the facts before we make a decision. [dependent clause follows independent clause]

b. Semicolon use in a series

When elements in a series have their own internal punctuation, or when they are very long and complex, they should be separated by semicolons.

- Use: Our company will be represented by Mary Jones, Director of Finance; Mark Smith, President; Joe Johnson, Vice President; and Anne Wilson, Marketing Director.
 Alaska villages currently conducting subsistence hunts of Western Arctic bowhead whales include Gambell, Savoonga, Little Diomedea, and Wales (located along the coast of the Bering Sea); Kivalina, Pt. Hope, Wainwright, and Barrow (along the coast of the Chukchi Sea); and Nuiqsut and Kaktovik (on the coast of the Beaufort Sea).

Use a semicolon to separate two closely related independent clauses in one sentence with no conjunction.

- Use: Their vision is reported to be well developed; they appear to have acute vision both in and out of water.

If you can use a period after the first main clause, and begin a new sentence with the second clause, you can use a semicolon. Also, the following transition words and phrases can be used with semicolons if the writer needs to indicate or clarify the relationship between the thoughts before and after the semicolon: *accordingly*, *consequently*, *for example*, *for instance*, *further*, *furthermore*, *however*, *indeed*, *moreover*, *nevertheless*, *nonetheless*, *on the contrary*, *on the other hand*, *therefore*, and *thus*.

- Use: We use aircraft geometry to generate survivability parameters such as radar signature; furthermore, we add performance, weapons, and avionics characteristics from the developed aircraft design to evaluate military effectiveness.

c. Colon use in a series

Use a colon after a formal statement to mean *note what follows*, or between independent clauses in cases where the second clause explains the first.

- Use: A citizen has one major responsibility: to vote.
 Our objective was clear: we had to win.

A vertical list is best introduced by a complete grammatical sentence, followed by a colon. The words *as follows*, *this*, *these*, and *thus* are often used to introduce a list. Do not put a colon after a verb or preposition.

Use: The catch was estimated using various methods:

- 1) a statewide harvest survey
- 2) a statewide charter logbook
- 3) a creel survey

Avoid: Field technicians are going to:

- 1) count fish eggs
- 2) weigh the eggs and record the data
- 3) take photos for the report

Avoid: Methods for the catch estimation are:

- 1) a statewide harvest survey
- 2) a statewide charter logbook
- 3) a creel survey

List items are not punctuated unless they are complete sentences.

Use: The proper procedure is this:

- 1) Read the lesson first.
- 2) Study each item.
- 3) Study the lesson as a whole.

In a numbered vertical list that completes an introductory sentence, each list item begins with a lowercase letter. Usually this type of list is run into the text; the vertical format should only be used if the items need to be highlighted.

In the following examples, *The herring sac roe fisheries may open contingent upon* is not a complete statement, so there is no need for a colon or semicolon after the word *upon*.

Use: The herring sac roe fisheries may open contingent upon 1) the industry notifying the department of interest in harvesting herring from a specific area, 2) the department documenting herring biomass, and 3) the department establishing a guideline harvest level.

Use: The herring sac roe fisheries may open contingent upon
 1) industry interest in harvesting herring from a specific area,
 2) the department documenting herring biomass, and
 3) the department establishing a guideline harvest level.

Avoid: The herring sac roe fisheries may open contingent upon:
 1) industry interest in harvesting herring from a specific area
 2) the department documenting herring biomass
 3) the department establishing a guideline harvest level

When the list items have their own internal commas, semicolons may be used between the items, and a period should follow the final item (see Semicolon use in a series, 10.4b).

10.5 Dashes and Hyphens

Dashes and hyphens have different appearances and uses. For hyphen use in compound words see Section 4 Compound Words, or Section 4.3 Hyphenating Nouns and Adjectives.

a. En dash

The en dash is width of the uppercase letter *N*. It is used most often for connecting numbers (See Section 8.6 Ranges). An en dash is used instead of a hyphen when one element of a compound adjective is an open (two words, not hyphenated) compound or if two or more of its elements are open compounds or are hyphenated.

Use: a hospital–nursing home connection [*nursing home* is an open compound]
 a nursing home–home care policy [both elements are open compounds]
 a quasi-public–quasi-judicial body [two elements hyphenated]

An en dash can also be used to link a city name to the name of a university that has multiple campuses.

Use: the University of Alaska Southeast–Juneau

b. Em dash

An em dash is the width of the uppercase letter *M*. It sets aside text that interrupts a sentence. The content set off within a sentence often requires two em dashes, and grammatical rules require that no more than two be used within a sentence. If it is necessary to set off additional points within that sentence, parentheses must be used. The function of the em dash is similar to that of parentheses or commas, but the em dash is the most forceful, and the comma the least forceful.

In place of commas: When a nonessential sentence element needs special emphasis, use em dashes instead of commas. This element can define, elaborate on, emphasize, explain, or summarize, and will usually be a sharp break and not the central message in the sentence. If the element itself contains commas, use em dashes to set it off.

Use: At the annual banquet, the speakers—and the food—were superb.
 Four areas—Icy Strait, Thomas Bay, Glacier Bay, and Seymour Canal—produced over 50% of 2006 commercial harvest.
 We offer the best service in town—and the fastest!

In place of parenthesis: Using em dashes to set off parenthetical information gives stronger emphasis to the sentence element.

Use: Chinook salmon—but not pink salmon—would be vulnerable at this life stage.

In place of a colon or semicolon: Using an em dash in place of a colon or semicolon signals a stronger but less formal break. As with a colon, the em dash introduces explanatory words, phrases or clauses.

Use: I will need several items for the meeting today—a copy of the June 12 letter, the contract, and yesterday’s e-mail correspondence.

Ages are designated according to the European system—an age-1.3 fish has one freshwater annulus and 3 ocean annuli.

This stands in stark contrast to the average annual harvest of 41 million fish during the 1950s—the final decade under federal management of the state’s commercial salmon fisheries.

When used in place of a semicolon, the em dash separates two closely related independent clauses.

Use: I do the work—he gets the credit!

Wilson is not qualified for the promotion—he is not an efficient manager.

10.6 Slash Marks

The forward slash should be used as a symbol for the mathematical operation of division and for other specialized uses, including the expression of rate or concentrations, e.g., 5 m/s or 20 mol/L. It should not be used in place of a comma, en dash, hyphen, or full expression.

Use: The school opened a hematology–oncology unit.

Avoid: The school opened a hematology/oncology unit.

10.7 Quotation Marks

Quotations marks should be used for the following purposes.

1. For short direct quotations (longer, extended quotations of more than two or three lines should be set apart by indentation and the use of a different font).
2. To identify hypothetical quotations.

Use: Perhaps you should have said something like, “not all of the fish successfully homed to the release site.”
3. Within the main body of text to identify the titles of articles or book chapters not formally cited with a scientific paper format.

a. Period inside quotes

Periods and commas precede closing quotation marks, whether double or single. An apostrophe at the end of a word should never be confused with a closing single quotation mark; punctuation always follows the apostrophe.

b. Quotes within quotes

Quoted words, phrases, and sentences that run into the text are enclosed in double quotation marks. Single quotation marks enclose quotations within quotations; double marks, quotations within these, and so on.

Use: “To say that ‘I mean what I say’ is the same as ‘I say what I mean’ is to be as confused as Alice at the Mad Hatter’s tea party.”

Imagine Bart’s surprise, dear reader, when Emma turned to him and said, “What ‘promise’?”

c. Punctuation outside quotations

Colons, semicolons, question marks, and exclamation points all follow closing quotation marks unless a question mark or exclamation point belongs within the quoted matter.

Use: I was asked for my “name and serial number”; I have no serial number.

Which of Shakespeare’s characters said, “All the world’s a stage”?

“Where are you?”

“Watch out!”

10.8 Abbreviations

Abbreviations should be avoided in running text except for those that are widely used in the particular context of the document. However, some commonly used abbreviations are not always appropriate in running text; for example, avoid lowercase abbreviations at the start of a sentence and do not use symbols for units of measure if not preceded by a number.

Use: Observations began at 12:01 a.m. and lasted 3 d.

We observed morning changes [not AM changes] in diet each day [not each d].

We isolated mtDNA.

Avoid: mtDNA was isolated.

Spell out months in running text even when they are parenthetical.

Use: The same methods were used to capture and mark fish in the two lakes in May–June 2001 and again in October–November 2001, except that clove oil was used during these sampling periods.

Avoid: We continued the studies in 2002 (May–Jun, Oct–Nov) again applying clove oil as an anesthetic.

10.9 Social Titles, Academic Degrees, and Abbreviated Designations

Social titles (such as *Mr.*, *Mrs.*, *Ms.*, and *Dr.*) in both general style and modern scientific style are always abbreviated and followed by a period. In almost all constructions,

the social title can be omitted with no loss of respect.

Use: We appreciate the technical support provided by Mr. Jason Guild.
We appreciate the technical support provided by Jason Guild.

Academic degrees and professional designations are always followed by a comma when they follow a personal name. The social title is always omitted when the academic degree follows a name.

Use: It is my pleasure to introduce Robin Smith, Ph.D., and Mary Jones, RN, MS.
It is my pleasure to introduce Dr. Robin Smith and Ms. Mary Jones.

a. General style

Abbreviations *Jr.* and *Sr.* are punctuated.

Use: Dexter Harrison III was appointed.
Dexter Harrison Jr. was the designee.

b. Modern scientific style

Abbreviations *Jr* and *Sr* are not punctuated, except in bibliographic references. Abbreviated designations for *Junior (Jr)*, *Senior (Sr)*, *the Second (II or 2nd)*, and *the Third (III or 3rd)* are part of the person's name; therefore, place them immediately after the name without a comma. A designation of this type precedes any academic degrees or professional designations. Use such designation only with the full personal name (given names and family name) and in bibliographic references.

Use: Dr. James Kelly Jr Dexter Harrison III, MD Patrick Elliot II MD Ph.D.
Quinn II, T. J., A. L. Johnson Jr, W. R. Thomson III, and R. T. Jones.
The trees are threatened by insects (Harrison, D., Jr. 1999).

Avoid: Dr. Kelly Jr

10.10 Italics

Italics should be used for the following purposes:

1. To designate document titles presented within the body of the text, except in literature cited sections, where titles should follow the specified format

2. The names of ships, aircraft, trains, etc.

Use: R/V *Medeia*

3. To refer to a word or phrase as a word or to identify a word that will be defined (often introduced by the expression *the word*, or *the term*)

Use: the term *anchor tag* refers to a uniquely numbered Floy t-bar tag

4. For Latin and other foreign words, including Latin binomials for species

names, except for those Latin and foreign words that are common to the reader, such as *vice versa* or *persona non grata*

Use: Sockeye salmon *Oncorhynchus nerka* and pink salmon *O. gorbuscha* were negligible components of the sport harvest.

5. To identify jargon or special terms of art that can be confused with words that have a different meaning in everyday speech

Use: ADF&G recommends removing the *stock of concern* designation from the Hugh Smith stock. [specific technical and legal meaning]

6. For the names of variables, including variables that are parts of the names of statistical tests and distributions

Use: *t*-test *F*-statistic χ^2 -distribution

7. For occasional emphasis

Section 11: Grammar

11.1 Passive and Active Voice

Active and passive voice have distinct purposes. Active voice is more direct and often preferred for nonscientific writing. In choosing between active and passive voice, a writer is choosing sentence structure that emphasizes either the doer (active voice) or what is being acted upon (passive). The choice of voice does not need to be uniform within a document; rather a mix of voices may best serve the author's purpose.

Use: (Passive) Over the last five years, research has been conducted on the calving success of the Porcupine caribou herd. (Followed by the Active voice) In 2003, ADF&G increased the bag limit for hunters.

a. Active voice

Active structure emphasizes and identifies who is doing the action and places the doer toward the beginning of the sentence. What is being acted upon is moved toward the end of the sentence (and becomes the object of the subject).

Active: The deputy commissioner approved the new training policy. [doer emphasis]

Passive: The new training policy was approved by the commissioner. [action emphasis]

The new training policy was approved. [action emphasis]

Active: We discussed salmon escapement at the meeting. [doer emphasis]

Passive: Salmon escapement was discussed at the meeting. [action emphasis]

Active: Dr. Gomez, a zoologist from the University of Alaska–Fairbanks, directed the physiology test. [doer emphasis]

Passive: The physiology test was completed at the University of Alaska. [action emphasis]

To find and consider rewriting passive sentences to make it active, look for a verb (*is, are, was, were*) next to an action word (*found, made, done, heard, recommend*) usually ending in *ed, de, nd, ne, or rd*.

b. Passive voice

Passive structure is used to emphasize what is being done and to drop mention of the doer. Scientific writing often uses passive structure in order to emphasize the action and process rather than who performed the action. Passive structure allows writers to reverse the nouns at the beginning and end of a sentence (the object becomes the subject). In scientific writing, the action or process is often more important than who performed the action.

Passive: Subsistence and personal use harvests have been estimated by means of returned permits. [action emphasis]

Active: ADF&G staff estimated subsistence and personal use harvests by means of returned permits. [doer emphasis]

Passive: Surveys have been conducted documenting subsistence harvests in the area. [action emphasis]

Active: ADF&G Divisions of Subsistence, Sport Fish, and Commercial Fisheries, and National Marine Fisheries Service have conducted surveys of subsistence harvest in the area. [doer emphasis]

When leaving out the doer of an action, make sure that it does not result in an awkward or misleading sentence:

Use: Using binoculars, scientists observed caribou.

Avoid: The caribou were observed using binoculars

11.2 Subject–Verb Agreement

Singular and plural subjects require singular and plural agreement with the verb, but agreement can be tricky when there is a prepositional phrase (of biomass; without walls) between the subject and the verb. This often makes it difficult to identify which noun or pronoun is actually the subject of the sentence.

Use: The results (subject) of the test (prepositional phrase) were (verb) unexpected.

One of the best ways to distinguish subject and verb, and therefore their agreement, is to take out the intervening phrases. If the sentence still reads correctly, then you have agreement.

Use: The results (subject) were (verb) unexpected.

If the prepositional phrase has a noun that is singular while the subject is plural, it can get confusing. There are basically two types of nouns:

1. *Noncount nouns* are words that generally are not counted, such as the words *salt*, *butter*, *soil*, and *biomass*; they are usually singular.
2. *Count nouns* are countable, such as *book*, *word*, and *computer*; they are either singular or plural.

We offer four rules to eliminate some of the hardships of subject–verb agreement:

1. Units of measurement take singular verbs because they are thought of as distinct, single units.

Use: Four feet of line was tangled.

2. The phrases *a number* and *a total* are usually plural; however, *the number* and *the total* are usually singular.

Is it *a total of 270,000 salmon* **was harvested** or **were harvested**?

Use: A total of 270,000 salmon were harvested.
 A number of salmon harvested and discarded were not included.
 The total number of salmon harvested was 270,000.
 There were 270,000 salmon harvested.
 The total harvest was 270,000 salmon.

3. Noncount nouns are generally singular.

Use: MS222 was added.
 The biomass was stored.

4. Recast passive sentences to active to make agreement even easier. See Section 11.1 Passive and Active Voice for more information on passive sentences.

Passive: Two feet of soil was taken from the site.
 Active: DEC took 2 ft of soil from the site.

11.3 Bias-Free and Gender-Neutral Language

The department uses bias-free and gender-neutral language. Documents should be carefully reviewed for biased language. The phrase *gender-neutral* refers to works that make no reference at all to gender and allow us to avoid gender stereotyping. When naming a job or role, avoid the use of compound terms ending in *man* or *woman* unless the term refers to a specific person whose gender is known (for example: Chairman David Jones, Chairwoman Joan Smith...).

Avoid Using

Instead Use

chairman (as a default)	chairman or chairwoman (if known); chairperson, chair (if unknown)
craftsman	artisan
congressman	senator/representative/member of Congress
fireman	firefighter
fisherman ¹	fisher (the standard term used in the context of subsistence fishing activities), or angler (the standard term within the context of sport fishing)
manmade	manufactured, artificial
man-hour, man-month	worker-hour, worker-month, angler-hour, hunter-hour, hunting-hour
manpower	workforce, personnel, human resources, staff
policeman	police officer
sportsman	sportsperson, outdoor recreationist
waiter/waitress	waitstaff
workman	worker

¹ *Fisherman/men* is the historically-used term and is acceptable. However, writers should strive to provide gender-neutral fish harvester terms when possible. Consider using gillnetter, seiner, troller, etc. to identify commercial fishing parties, and angler instead of fisherman when referencing sport fishing activities. Fisher is the standard term used in the Division of Subsistence.

Appendix A: Units of Measure, Scientific Abbreviations, Symbols, Conversions, Variables, and Equations

These abbreviations are for scientific and technical writing, and are not applicable to general style. Technical abbreviations should be used only in conjunction with a number or in a table heading; spell out most text uses not associated with a number. If your audience is nontechnical, introduce these abbreviations (spell out in full on first use and put the abbreviation beside it in parentheses) or avoid the abbreviation entirely. Most of these technical abbreviations are international standards from *Système International d'Unités* and the CSE manual, *Scientific Style and Format* (CSE 2006).

In scientific writing, do not add *s* to a symbol for a unit of measure. Both single and plural are indicated by use of the symbol alone.

A.1 Abbreviations, Conversions, and Symbols

Weights and Measures (English)

acre ^a (0.405 ha)
cubic feet per second (0.0283 m ³ /s)
fathom ^a (1.829 m or 6 ft)
foot (30.5 cm)
gallon (3.79 L)
inch ^b
knot (0.514 m/s)
mile (1.61 km)
nautical mile ^c (1,852 m or 1.852 km)
ounce (28.4 g)
pound (0.454 kg or 454 g)
quart (0.946 L)
ton ^a (2,000 lb or 907.2 kg)
yard (0.914 m or 91.4 cm)

Prefixes

giga (10 ⁹)	G
kilo (10 ³)	k
mega (10 ⁶)	M
milli (10 ⁻³)	m
micro (10 ⁻⁶)	μ
nano (10 ⁻⁹)	n

Weights and Measures (Metric)

centimeter (0.394 in)	cm
gram (0.0353 oz)	g
hectare (2.47 acres)	ha
kilogram (2.20 lb)	kg
kilometer (0.622 mi)	km
liter ^d (0.264 gal, 1.06 qt)	L
meter (1.09 yd, 3.28 ft, 39.4 in)	m
micrometer (do not use micron)	μ m
millimeter (0.0394 in)	mm
milliliter	mL
tonne ^a (1,000 kg or 2,205 lb)	t

Time and Temperature

day	d
degrees Celsius ^f ($[\text{°F} - 32] / 1.8$)	°C
degrees Fahrenheit ^f ($[1.8 \times \text{°C}] + 32$)	°F
degrees Kelvin ^f ($K = C + 273.15$)	°K
hour (spell out for 24-hour time of day)	h
minute	min
month ^a	
second	s
week ^a	
year	y

Physics and Chemistry		Mathematics and Statistics	
<i>any atomic symbol may be used</i>		analysis of variance	ANOVA
alternating current	ac	approximately	~
ampere	A	base of natural logarithm	e
British thermal unit (1.05 J)	Btu	chi-square	χ^2
calories (should be converted to joules in the metric system, see <i>joule</i>)		coefficient of variation	CV
chemical acronyms listed in Webster's dictionary (DDT, EDTA, etc.) may be used		common test statistics	(<i>F</i> , <i>t</i> , χ^2 , etc.)
direct current	dc	confidence interval ^p	CI
footcandle (0.0929 lx)	fc	correlation coefficient (multiple) ^g	<i>R</i>
hertz	Hz	correlation coefficient (simple) ^g	<i>r</i>
hydrogen ion activity (negative log of)	pH	covariance ^c	cov
joule (0.239 gram-calories or 0.000948 Btu)	J	degree (angular or temperature) ^f	°
lux (10.8 fc)	lx	degrees of freedom	df
molar	M	logarithms	
mole	mol	base 10	log
newton	N	base x	log _x
normal	N or n	natural	ln
ohm	Ω	null hypothesis ^c	H_0
ortho	o	alternative hypothesis ^c	H_A
para	p	mean ^{c, h}	\bar{x}
pascal	Pa	minute (angular)	'
parts per million (per 10 ⁶ —in the metric system, use mg/L, mg/kg, etc.)	ppm	not significant	NS
parts per thousand (per 10 ³)	ppt, ‰	percent	%
siemens	S	population size ^g	<i>N</i>
volt	V	probability ^g	<i>P</i>
watt	W	sample size ^g	<i>n</i>
		significance probability ^{c, g}	<i>P-val</i>
		standard deviation ^h	σ or <i>s</i>
		standard error ^h (of the mean) ^g	$s_{\bar{x}}$
		variance ^c	σ^2 or <i>s</i> ²

^a No abbreviation; spell out.

^b Only used with a number preceding.

^c Should be introduced on first use (i.e., spell out in full on first use and insert the abbreviation beside it in parentheses), or spelled out throughout document.

^d In less technical contexts the symbol is often given as a lowercase *l*. This exception only applies to this symbol, not to other metric measurements.

^e Metric ton may be used instead; its abbreviation (mt) may be used, but it should be introduced.

^f Close up the space when used in conjunction with numbers expressing longitude/latitude, angles, and degrees (e.g., 45° F).

^g Symbol or abbreviation is italicized.

^h If you prefer, you may use SE for standard error, SD for standard deviation, or *var* for variance or a unique abbreviation for mean (i.e., other than \bar{x}); however, these abbreviations should be introduced on first use. Note that σ is the parameter and *s* is the estimate.

A.2 Variables and Mathematical Symbols

Use the following symbols for common mathematical symbols:

Symbol	Meaning	Remarks	Examples
+	plus, add		
-	minus, subtract		
× or •	multiplied by, times	also shown by juxtaposition of the quantities	15 <i>n</i> ; 15 × 25
/; ÷	divided by	avoid xy^{-1} ; our readership is not entirely technical, and this usage is not part of common language	x/y or $\frac{5}{9}$
Σ	sum		
≥	equal to or greater than		
≤	equal to or less than		
>	greater than		
<	less than		
±	plus or minus		

When used with numbers or variable symbols, set off common mathematical operators (plus, minus, times, and division) and all the equality and inequality symbols from variables and numerals with a space. When these symbols are modifying a number rather than serving as operators, close them up to the numeral or write them out.

a. Spacing of mathematical symbols

Mathematical symbols should not be used as a shorthand for words, to begin a sentence, or between two words in running text. Two or more mathematical operators should not appear side by side. Mathematical symbols in adjacent mathematical expressions should be separated by words or punctuation, because it may be difficult to tell where one expression ends and another begins.

Use: biomass of ≤ 500 g $(a - 1) \geq y$
 $x > y < z$ at $a = 0.05$ *but* when $a > 0.05$
 at 50 × gravity *but* 50× magnification

Use: at greater than -6 °F
 Avoid: >-6 °F or > -6 °F

Use: the target zone equals the optimum plus the...
 Avoid: the target zone = the optimum + the...

Close spaces between quantities multiplied together.

Use: 2*xy*

Close spaces between fence brackets and the variables on either side of them:

Use: $(a - 1)y$ $(4p + 4bc)(1 - a)$ $a[x]$

b. Other number standards

A mixture of numerals and spelled-out numbers can be used to express very large numbers (millions or more).

Try to avoid using text strings of individual numbers that are separated by commas or semicolons; these constructions can cause confusion.

c. Significant digits

The correct number of significant digits should be used in reported numbers. In general, the number of digits in a reported measurement implies that the true value lies within a range, the width of which is determined by the last decimal place in the measurement. Thus, a value of 5 cm implies a range of accuracy of 1 cm whereas a value of 5.3 cm implies a range of 0.1 cm. The significant digits in a computed value should not exceed that of the value in the computation with the least number of significant digits. Thus if fish lengths were measured to the nearest centimeter, average length should also be rounded to a whole centimeter.

d. Statistical findings

Include reference to the statistical method used for all relationships explained and validated in the results section through a statistical process. When reporting the results of statistical tests state the test method, associated significance probability (preferably as an equality), and, where appropriate, the degrees of freedom.

Authors should also consider and discuss biological significance of the results. It is useful for the author to note when statistically significant results have limited biological relevance (e.g., a statistical significance value of 1 cm in fish length may not have biological significance).

e. Using mathematical terms developed by others

Special terms or names for special mathematical expressions as used or defined 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.

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

A.3 Equations

Equations are sentences. The left hand side is the subject; the equal sign together with the right hand are the predicate. When you use equations, follow the same advice you have been given about how to use other kinds of sentences. First, put the equation in a paragraph with a good topic sentence that focuses the reader. Break

complex ideas up into smaller parts and introduce and explain one important idea at a time. Also, because equations express a complete thought and contain a subject and a predicate, equations need appropriate punctuation. Usually, you should put the the most important idea you want the reader to remember at the end of a paragraph. For that reason, it is often a good idea to end a paragraph that introduces notation with a key equation.

When you use equations, the point is to communicate. Use equations to visually show mathematical relationships. If you, the author, cannot quickly see the key relationships in an equation, then the equation is surely too complex for someone unfamiliar with the topic, and the equation should be restated using a series of simpler equations. If you have a lot of complex notation, the reader might appreciate having the entire notation system in a single table. With or without this kind of table, it is always a good idea to remind the reader of the meaning of your notation if it has not been used within a few paragraphs. Many readers will become confused if the equation subscripts are not unique identifiers. For example, do not use i to designate fish in one equation and then to designate set in another equation. Equations should be used to help readers understand models and mathematical relationships. Do not waste your reader's time developing equations for common things that the reader already understands. Just cite commonly used statistical techniques, such as typical standard deviation equations, using standard references.

All variable names should be in italics, and units of measurements should not. In this way the reader should know that $5m$ means five times the variable named by m , and 5 m means five meters. The names of all standard statistical tests and other statistics contain variable names (for example, t -test, χ^2 -distribution, P -val <0.01) and are italicized as are regression coefficients and acronyms when used as variable names.

Simple equations may be included in the text if the equation will fit legibly within the line spacing for the normal paragraph style. These equations should not be numbered. You may wish to number key equations so that you can refer back to them by name. If you number equations, place the equation number in parentheses aligned with the right margin of the page. Complex equations displayed in documents prepared with the two-column template may be formatted to print across both columns. If the equation exceeds a single column width, do not wrap text around the equations. An example of a formatted, numbered equation follows:

$$\text{Var}(\hat{D}_i) = \frac{\hat{D}_i(1 - \hat{D}_i)}{n_i - 1}. \quad (1)$$

When typesetting an equation, take care that the symbols translate correctly when the document is submitted for review, editing, or publication.

a. Equation checklist

1. Key concepts are introduced one at a time and fully explained before introducing new concepts.
2. It is easy to see key relationships by looking at the equations.
3. Variable names are in italics.
4. Units of measurement are in regular text.
5. The equations have the correct punctuation.
6. Mathematical ideas are consistently called by one and only one name.
7. Notation is not used for more than one thing.

b. Example equation narrative

Let x_i represent the number of long-distance strays from release group i . Let y_i denote the original release size of the cohort of tagged fish of this particular release group, making no attempt to expand or otherwise account for untagged fish. We let the value of this covariate serve as a surrogate for the number of adult salmon returning from release group i . Each release group also was associated with another covariate, which we denote as z_i , which provides the shortest over-water distance from the hatchery to the release site. In cases where the fish were directly released at the hatchery, that is non-remote releases, the value of this covariate is zero.

We assumed that the number of long-distance strays detected from release group i followed a Poisson distribution, with an underlying intensity (or rate of stray detection) as function of both observed factors of interest and quantitative measures of interest. If λ_i denotes the Poisson mean of the number of freshwater recovered tags from long-distance stray fish for release group i , we assumed that the natural logarithm of this parameter can be expressed as a linear statistical model. Because we assumed that x_i follows a Poisson distribution, then we can write the probability of recovering exactly x_i tagged fish in freshwater from release group i as,

$$f(x_i | \lambda_i) = \frac{\lambda_i^{x_i} \exp(-\lambda_i)}{x_i!}, \text{ for } x_i \text{ equal to } 0, 1, 2, 3, \dots \text{ and so on.} \quad (1)$$

We can use Equation (1) to find that $E(x_i) = \lambda_i$. Taking logarithms we find the linear model $\ln(\lambda_i) = \mu + \alpha + \beta y_i + \xi z_i + \dots$, for y and z denoting covariates of interest and α and β representing the release-specific effects, such as hatchery or release site.

Appendix B: Standard References

The following list of references are the standards to be used by the department. Each reference addresses a different area, such as correct common and scientific names of species, spelling, or word usage. Always use the latest edition available.

B.1 General References

These references provide information that is customarily, though not exclusively, applicable to our writing.

a. Spelling

The standard dictionaries for word definition and spelling (which will be followed for the majority opinion) are *The American Heritage Dictionary of the English Language*, and *Webster's Third New International Dictionary*.

The American heritage dictionary of the English language. 2006. 4th edition. Houghton Mifflin Company, Boston, MA.

Webster's third new international dictionary. 2002. G. & C. Merriam. Springfield, MA.

b. Word use

The Chicago Manual of Style is the standard used by the Council of Science Editors as well as by the editors of the *Gregg Reference Manual*. The *Gregg Reference Manual* (McGraw–Hill Book Company), by William Sabin and now in its 10th edition, is the field standard for style, usage, and grammar.

The Chicago manual of style. 2003. 15th edition. University of Chicago Press, Chicago.

Sabin, W. A. 2005. Gregg reference manual. 10th edition. McGraw-Hill, Boston.

For further guidance on gender-neutral writing, we advise *The handbook of non-sexist writing*.

Miller, C., and K. Swift. 1988. The handbook of nonsexist writing. Harper and Row, New York.

B.2 Technical References for Scientific Reporting

Now in its 7th edition, *Scientific Style and Format* (Council of Science Editors and The Rockefeller University Press) is the primary reference for scientific and technical writing.

Council of Science Editors, Style manual committee. 2006. Scientific style and format: The CSE manual for authors, editors, and publishers. 7th edition. Reston, VA.

B.3 Scientific Name References

The following references are to be used exclusively as final authority for common and scientific names of fauna and flora and for place names in Alaska.

a. Fish species

Fishes of Alaska, and *Common and Scientific Names of Fishes from the United States, Canada and Mexico*, Special Publication 29, will be followed for both scientific and common names of fishes, as well as for correct capitalization of names. For fish species of Alaska, refer to Section 9.5 Finfishes of Alaska.

Mecklenburg, C. W., T. A. Mecklenburg, and L. K. Thorsteinson. 2002. *Fishes of Alaska*. American Fisheries Society, Bethesda, MD.

Nelson, J. S., E. J. Crossman, H. Espinosa-Pérez, L. T. Findley, C. R. Gilbert, R. N. Lea, and J. D. Williams. 2004. *Common and scientific names of fishes from the United States, Canada and Mexico*. 6th edition. American Fisheries Society, Special Publication No. 29, Bethesda, MD.

b. Aquatic invertebrate species

Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Mollusks, 2nd edition (also available on CD), American Fisheries Society, Special Publication 26; and *Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Decapod Crustaceans*, American Fisheries Society, Special Publication 17, are the standards for scientific and common names of aquatic invertebrates. For invertebrate species of Alaska, refer to the list in Section 9 of this guide.

Turgeon, D. D., J. F. Quinn Jr., A. E. Bogan, E. V. Coan, F. G. Hochberg Jr., W. G. Lyons, P. M. Mikkelsen, R. J. Neves, C. F. E. Roper, G. Rosenberg, B. Roth, A. Scheltema, F. G. Thompson, M. Vecchione, and J. D. Williams. 1998. *Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks*. 2nd edition. American Fisheries Society, Special Publication No. 26, Bethesda, MD.

Williams, A. B., L. G. Abele, D. L. Felder, H. H. Hobbs, R. B. Manning, P. A. McLaughlin, and I. P. Farfante. 1989. *Common and scientific names of aquatic invertebrates from the United States and Canada: decapod crustaceans*. American Fisheries Society, Special Publication No. 17, Bethesda, MD.

c. Bird species

For birds of Alaska, refer to Section 9.7 Birds of Alaska. This list was developed using primarily the following reference.

Gibson, D. D., S. C. Heinl, and T. G. Tobish Jr. 2009. *Checklist of Alaska birds*. 15th edition. University of Alaska Museum, Fairbanks, AK.

Section 9.7 does not include birds on the checklist that are considered unsubstantiated in Alaska. For non-Alaska bird species, use the *Checklist of North American*

Birds, prepared by the Committee on Classification and Nomenclature of the American Ornithologists' Union. This is the standard used for the spelling of bird names.

The American Ornithologists' Union. 1988. Check-list of North American birds. 7th edition. American Ornithologist Union, Washington, D.C.

However, note that we do not follow their practice of capitalizing all common names of birds; instead, we follow the widespread nomenclatural custom of using capitals for only that part of a common name that is an established proper name (e.g., Pacific loon, common loon).

For information about terms for bird ages, see the *North American Bird Banding Manual* section on codes and the following references written by Peter Pyle.

Gustafson, M. E., J. Hildenbrand, and L. Metras. 1997. The North American bird banding manual (Electronic Version). Version 1.0.

Pyle, P. 1997. The identification guide to North American birds. Part I. Columbidae to Ploceidae. Slate Creek Press, Bolinas, CA.

Pyle, P. 2008. Identification Guide to North American birds, Part II: Anatidae to Alcidae. Slate Creek Press, Point Reyes Station, CA.

d. Mammal species

For mammals of Alaska, use the list in Section 9.8 of this guide. This section was developed primarily using *Recent Mammals of Alaska*, especially for land mammals.

MacDonald, S. O., and J. A. Cook. 2009. Recent mammals of Alaska. University of Alaska Press, Fairbanks, AK.

For marine mammals, we follow Rice (1998).

Rice, D. W. 1998. Marine mammals of the world: systematics and distribution. Society for Marine Mammalogy, Special Publication No. 4, Lawrence, KS.

For non-Alaska mammals, use *Mammal species of the world*.

Wilson, D. E., and D. M. Reeder, editors. 2005. Mammal species of the world: A taxonomic and geographic reference. 3rd edition. Johns Hopkins University Press, Baltimore, MD.

The American Society of Mammalogists has an online reference list of mammal species. Other references include the online information provided by the American Society of Mammalogists, the Alaska Natural Heritage Program (AKNHP) Mammals Tracking List, 2007, and the *National Audubon Society field guide to North American mammals*:

Whitaker, J. O., Jr. 2000. National Audubon Society field guide to North American mammals. Revised edition. National Audubon Society field guide series. New York: Knopf.

e. Plant species

Flora of Alaska and Neighboring Territories, A Manual of the Vascular Plants (Stanford University Press, Stanford, California) by Eric Hultén is the standard for scientific names of Alaska plants; it also includes detailed line drawings.

Hultén, E. 1968. *Flora of Alaska and neighboring territories: a manual of the vascular plants*. Stanford University Press, Stanford, CA.

For information on plants outside Alaska, *Plants of the Pacific Northwest coast: Washington, Oregon, British Columbia & Alaska* is based on Hultén, and includes photographs as well as line drawings.

Pojar, J., and A. MacKinnon. 1994. *Plants of the Pacific Northwest coast: Washington, Oregon, British Columbia & Alaska*. Lone Pine Publishing, Vancouver, British Columbia.

For seaweed, the following references are recommended.

Abbott, I. A., and G. J. Hollenberg. 1976. *Marine Algae of California*. Stanford University Press, Stanford CA.

Druehl, L. D. 2000. *Pacific seaweeds: A guide to common seaweeds of the West Coast*. Harbour Publishing, Madeira Park, British Columbia.

Gabrielson, P. W., T. B. Widdowson, S. C. Lindstrom, M. W. Hawkes, and R. F. Scagel. 2000. *Keys to the benthic marine algae and seagrasses of British Columbia, Southeast Alaska, Washington and Oregon*. Department of Botany, University of British Columbia, Phycological Contribution No. 5, Vancouver.

Garza, D. A. 2005. *Common edible seaweeds in the Gulf of Alaska*. Alaska Sea Grant SG-ED-46, Fairbanks, AK.

Lamb, A., and B. P. Hanby. 2005. *Marine life of the Pacific Northwest: A photographic encyclopedia of invertebrates, seaweeds, and selected fishes*. Harbour Publishing, Madeira Park, British Columbia.

Mondragon, J., and J. Mondragon. 2003. *Seaweeds of the Pacific coast*. Sea Challengers, Monterey, California.

O'Clair, R. M., S. C. Lindstrom, I. M. Brodo, K. M. Hocker, and P. S. Holley. 1996. *Southeast Alaska's rocky shores: seaweeds and lichens*. Plant Press, Auke Bay, AK.

O'Clair, R. M., and S. C. Lindstrom. 2000. *North Pacific seaweeds*. Plant Press, Auke Bay, AK.

Scagel, R. F., P. W. Gabrielson, D. J. Garbary, L. Golden, M. W. Hawkes, S. C. Lindstrom, J. C. Oliveira, and T. B. Widdowson. 1989. *A synopsis of the benthic marine algae of British Columbia, Southeast Alaska, Washington and Oregon*. Reprinted 1993 with minor changes and corrections. Department of Botany, University of British Columbia, Phycological Contribution No. 3, Vancouver.

f. Place Names

Dictionary of Alaska Place Names by Donald J. Orth is recognized by ADF&G as the standard for place names within Alaska.

Orth, D. J. 1971. *Dictionary of Alaska place names*. U.S. Government Printing Office, U.S. Geological Survey, Professional Paper 567, Washington, D.C.

g. Amphibians

Hodge, R. P. 1976. Amphibians and reptiles in Alaska, the Yukon, and Northwest Territories. Alaska Northwest Publishing Co., Anchorage, AK.

Good online references for Alaska amphibians include *Amphibians and Reptiles of Alaska, a Field Handbook*, by S. O. MacDonald, published in 2003 and available online through the Alaska Natural Heritage Program, and the online *Amphibian and Reptile Tracking List* kept by the Alaska Natural Heritage Program.

Other amphibian references include the online standard common and current scientific names list kept by the Center for North American Herpetology on its website, and the online list *Amphibian Species of the World 5.3*, an online reference provided by the American Museum of Natural History.

B.4 Cultural References

Alaska Native Language Center
University of Alaska Fairbanks
Box 757680
Fairbanks, AK 99775
(907) 474-7874 [voice]
(907) 474-6586 [fax]

B.5 Map References

The *Alaska Atlas & Gazetteer* contains detailed topographic maps. Map detail commonly includes secondary and unimproved roads; trails; elevation contours; lakes and streams; boat ramps; recreation; land cover such as forests, wetlands, and agriculture; and other public access sites.

Alaska Atlas & Gazetteer. 2007. 6th edition. DeLorme Publishing Company, Yarmouth, ME.

Anadromous Waters Catalog: Alaska Department of Fish and Game maintains anadromous waters data and a fish distribution database as well as revision to and publication of the *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* and its associated *Atlas*. The *Catalog* and *Atlas* currently contain about 16,000 streams, rivers, or lakes around the state which have been specified as being important for the spawning, rearing, or migration of anadromous fishes. Based upon thorough surveys of a few sample drainages, it is believed that this number represents less than 50% of the streams, rivers, and lakes actually used by anadromous species. The *Atlas* shows cartographically the location, name, and number of these specified water bodies, the anadromous fish species using these water bodies, and the fish life history phases for which the water bodies are used (to the extent known).

Copies of the entire *Atlas of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes* are available for examination at the ADF&G Division of Sport Fish offices in Anchorage, Fairbanks, and Douglas. Copies are also available for viewing at the Alaska State Library in Juneau and the Alaska Resources Library and Information Services in Anchorage. Copies of regional volumes of the *Atlas* are located at ADF&G offices in Anchorage, Bethel, Cold Bay, Cordova, Craig, Delta Junction, Dillingham, Douglas, Dutch Harbor, Glennallen, Haines, Homer, Ketchikan, King Salmon, Kodiak, Nome, Palmer, Petersburg, Sand Point, Sitka, Soldotna, Tok, Wrangell, and Yakutat.

B.6 Fish Pathology References

Common diseases of wild and cultured fishes in Alaska, and *Diseases of wild and cultured shellfish in Alaska* are available from your publications staff.

Myers, T. E. 2007. Common diseases of wild and cultured fishes in Alaska. Alaska Department of Fish and Game, Fish Pathology Laboratories, Juneau.

Myers, T. E., and T. Burton. 2009. Diseases of wild and cultured shellfish in Alaska. Alaska Department of Fish and Game, Fish Pathology Laboratories, Juneau.

Appendix C: Reference Formatting

C.1 Basic Guidelines for References

All sources listed as references must be mentioned at least once in the text, tables, figures, or appendices of the report. A bibliography, by contrast, provides a list of references that pertain to the report subject, but may or may not pertain to specific report text.

If a figure or table in a report uses data from another agency, list which data came from which agency underneath the figure or table.

Use: Source: Halibut data, IPHC. Sablefish data, ADF&G.

Most of the examples provided in this guide are based on standards set forth by the *Chicago Manual of Style* (CMS 2003) and journals of *The American Fisheries Society* (AFS 2006). The construction of a citation can vary from guide to guide, but the basic and required elements for a complete citation remain the same across guides. These examples are guidelines to providing accurate citation information in an easily identifiable format.

C.2 Citing Original Data Sources

When referencing historical data, it is the author's responsibility to provide the information so that the reader can find the original source of the data. For data not collected as part of the current report project, the report in which the data were originally collected should be cited. If the source is not a published document, provide an in-text reference to the source, with explanation that identifies the location and authority of that source.

If the report is the first place where data or estimates are published, the author must include a methods section to clarify the data collection and methodology. If the Division of Commercial Fisheries collects weir counts, and the counts are reported in a report covering a different topic, the author must explain the how, when, and where of the weir operations in the methods section, or cite a published report on the project. Original estimates should not be modified; instead the data should be provided with explanation. If a certain aerial survey is believed to be inaccurate because of bad water conditions, do not provide an alternate estimate based on a different method. If there is reason to doubt an estimate, or if the estimate is not comparable to other historical data, do not present the estimate, or present the estimate with a disclaimer footnote. Source information should never be summarized without explanation. Do not mix types of estimates that are not comparable. Do not put estimates of harvest or

effort derived from Statewide Harvest Survey data in the same column with estimates from a creel survey; present the estimates in two separate columns.

C.3 Standards for Citing Sources Within the Text

a. Published reports

Basic text references. Use the *name year* convention. Use this form after a statement is made referencing the citation.

Use: Arctic grayling are believed to be present (Jones 1989).

Citation reference occurring within the sentence. Include only the year of publication within the parenthesis.

Use: Jones (1989) claims that Arctic grayling are present.

Author's name in the possessive case. The citation immediately follows the word modified.

Use: Bernard's methods (1989) are the test used to determine if Arctic grayling are present.

Two coauthors cited. List both names in the text reference.

Use: Arctic grayling are believed to be present (Jones and Smith 1989).

Three or more coauthors. List the primary author followed by et al.

Use: Some investigators thought that no Arctic grayling were present (Jones et al. 1990).

Multiple reports by the same author in text citations. Separate the years with a comma; citations to multiple reports by multiple authors are separated by a semicolon.

Use: (Jones 1989, 1992; Smith 1993).

Multiple authors with the same last name. Include the author initials in the reference.

Use: Some researchers investigated the Arctic grayling disappearance (D. Jones 1989; E. A. Jones 1989).

Multiple works by the same author(s). List the works chronologically by year of publication with the oldest date first, and separate dates with a comma.

Use: Studies indicate that grayling are present (Jones 1996, 1998).

When there are more than two dates included, list them in a series.

Use: Studies indicate that grayling are present (Jones 1996–1998).

Different reports by the same author in the same year. Clarify the reports with an alphabetic designation.

Use: (Jones 1989a, 1989b)

Multiple references to reports with different authors. Group all citations by the same author chronologically. These grouped citations can be ordered either chronologically or alphabetically at author's choice, but must be consistently ordered within a report.

Use: (Jones and Smith 1989; Alt 1990–1992; Jones 1993)
(Alt 1990–1992; Jones 1993; Jones and Smith 1989)

No clearly identifiable author, only an editor. Cite the editor's name(s) in place of the author.

Use: (Jones 1981)

A reference to a very specific section of a lengthy book or other document. Note the pertinent page or pages. The exact format is the author's choice, but must be consistent throughout the report.

Use: (Jessen 1978, equation 5.8, page 128)
(Jessin 1978: 128)
(Jessin 1978, page 128)
(Jessin 1978, pages 128-132)

Otherwise do not include page numbers.

b. Legal citations

Legal citations have naming conventions. The core of a citation includes the title number, section number, and identifying code number.

Use:	Alaska Statute:	(AS 16.05.020) or (AS.16.5.320(a))
	Alaska Administrative Code:	(5 AAC 56.070)
	U. S. Code:	(42 U.S. Code § 201)
	Code of Federal Regulations:	(43 CFR § 17.8)
	Statutes at Large:	(114 Stat. 3088)

For references to current law, the year is unnecessary. However, for statutory provisions undergoing changes, the date may be necessary. For example, if an author is comparing several versions of the same regulation, (e.g., the Board of Fisheries amends language in an existing regulation), cite the year in the text with the regulation to distinguish the versions.

Regulation summaries published by ADF&G are not listed in the references cited; instead, use a footnote.

Use:

¹ ADF&G. 1991. 1991-1992 Cook Inlet/Prince William Sound commercial fishing regulations. Alaska Department of Fish and Game, Juneau.

A formal Memorandum of Understanding (MOU) is a legal document between multiple parties. The identifying features of the understanding are a listing of the parties, the text, and dated signatures. A citation to a MOU is provided in text, and must include those elements. If no title is provided in the original document, extract one from the subject matter. The first listing of the MOU provides all the details in text (a footnote is more appropriate if there are many parties, or if the title is a somewhat lengthy extrapolation from the subject). It is often helpful to assign an acronym to that entry, so that subsequent references can be abbreviated.

Use: On August 8, 2000, collaborative, regional and interagency-based management was formalized by a Memorandum of Understanding between Norton Sound regional and local organizations, Alaska Department of Fish and Game, and U.S. Fish and Wildlife Service, *Norton Sound Research and Restoration Memorandum of Understanding* (NS MOU). [title, date, and parties]

Alaska Department of Fish and Game strives to coordinate research and management of the species, as per the December 20, 1979 Memorandum of Understanding between the Alaska Board of Fisheries and the North Pacific Fishery Management Council recommending the development of complementary management regimes. [date and parties, but no title]

c. Personal communications and unpublished documents

Personal communications, unpublished data or reports, and sources not available to the reader should be documented within the text, in a footnote, or as a source note in a table. These are not included in the *References Cited*. In parenthetical citation after the information presented, the terms *personal communication* or *unpublished data*, are used after the name(s) of the persons concerned, following a comma. Avoid *et al.*

Personal communications. Citation guidance has been carefully established for a category originally defined as *personal communications*. In its simplest form, this citation format was designed to cover a direct communication of information from a person close to the subject, not otherwise published. That guidance (in text documentation, including all essential information necessary to verify the material) in our age of ready communication using multiple sources, has expanded to cover many new kinds of source material. Among the personal communication format publications identified by *Chicago Manual of Style* are memos, e-mail communications, data files, working papers, letters, meeting presentations, and non peer-reviewed material.

The personal communication citation format should include the credentials, the affiliation of the source, a clear identifier of the kind of material presented, and the date and location of the author or material.

Use: The study was interrupted by the influx of volcanic ash (R. W. Smith, Sport Fish Biologist, ADF&G, Anchorage, personal communication).

In a telephone conversation with the author on November 4, 2006, Sergeant Smith reported that... [within running text]

Note: George Jones, e-mail message to author, December 6, 2004. [Source note in a table]

Unpublished documents. Use *unpublished* for reports or papers that are not destined for distribution. Include the location where the information can be accessed. Confirm and provide the location and availability of all the unpublished source documents or data. The citation for an unpublished document must include the following essential components: the author or authority for the information, his or her job title, date, identification of the type of information, and its location.

Unpublished reports and data that are primarily housed in a specific agency location should be included as parenthetical in text citations similar to personal communications.

Use: This problem was identified as early as 1940 (unpublished Bureau of Fisheries manuscript obtained from Jack Helle, Auke Bay Fisheries Lab, Juneau, Alaska).
(R. Smith, W. Jones, G. Masters, and R. Benton, 2003, unpublished data)

If you are referring to a specific project, cite the project (not the author) in the text, and footnote it. In the footnote, list the project name, project leader, and date and year.

Use: When the weir was removed on July 29 during the Nelson Lagoon commercial salmon fishery project, an estimated 56,000 female sockeye salmon¹ had been counted, meeting the management escapement objective of 50,000–110,000 female fish.

¹ Philip Tschersich, North Alaska Peninsula fishery management biologist. Nelson Lagoon commercial salmon fishery project, unpublished data, 2007.

d. In prep and In press

In Prep. Use *In prep* (italicized with no period after *prep*) to cite ADF&G reports and manuscripts that have been drafted and are intended for publication but are not yet finalized. If it is certain the report will be published, include it in the *References Cited* listing; if publication is uncertain, include it as an in text citation only, using the format of a personal communication.

In press. Use *In press* for manuscripts that are approved for publication and are in the printing process. *In press* should not be used for publications forthcoming through the ADF&G publication series because our process is unique and not appropriately described by that phrase. For ADF&G publication series use *In prep*. *In press* is typically used for an article or book, submitted and accepted for formal publication, but that has not yet reached the publication date.

C.4 Standards for List of References Cited

This is the standard for departmental publications. If you are writing for a specific scientific journal you will need to follow their stated citation standards.

a. Standard references cited format for ADF&G scientific and technical series publications

1. List references alphabetically by author. When multiple references cited are by the same author(s), order the references alphabetically by author, then chronologically by year of publication, with the oldest date first. When multiple references are cited by the same author(s), have the same title and the same publication year, order the references by the data year in the report title, starting with the oldest first.
2. List author last name, followed by a comma, and author initials or name(s) as they appear in published report. Initials are separated by a single space.
3. List coauthors with initials or name first, followed by last name. Final coauthor is separated by “and,” followed by a period, then one space to lead into publication year.
4. List year of publication. Follow this with one space. If the publication has not yet been published, list the date as *In prep* followed by a period.
5. List title of the report. For titles only the first word, proper nouns, proper adjectives, and the first word of a subtitle after a colon should be capitalized. Follow the title with a period and one space.
6. List publisher followed by a comma, and publication series, followed by a comma.
7. List place of publication, followed by a period. A Division of Commercial Fisheries Regional Information Report will be cited in the following style:

Use: Stewart, R. 2003. Techniques for installing a resistance board weir. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-26, Anchorage.

A document soon to be published will be cited in the following style:

Use: Wadle, J., G. Spalinger, and J. Dinnocenzo. *In prep*. Kodiak management area herring sac roe fishery harvest strategy for the 2010 season. Alaska Department of Fish and Game, Fishery Management Report, Anchorage.

b. Sample standard references cited formats

Periodical. Weekly or monthly magazines, even if numbered by volume and issue, are usually cited by date only.

Use: McKinnell, S. A., A. J. Thompson, E. A. Black, B. L. Wing, C. M. Gutherie Jr, J. F. Koerner, and J. H. Helle. 1997. Atlantic salmon in the North Pacific. *Aquaculture Research* 28(9): 145–157.

Periodical with a URL. When the electronic version is static and based on a print version of an article, the citation does not necessarily require the date of access.

Use: Pritchard, V. L., K. Jones III, and D. E. Cowley. 2007. Genetic diversity within fragmented cut-throat populations. *Transactions of the American Fisheries Society* 136:606-623. <http://afs.allenpress.com/perlserv/?request=get-abstract&doi=10.1577%2FT06-038.1> (Accessed June 2007).

Reference with agency or governmental department or division as author. Include state or appropriate country at the end of an agency or university citation address only when needed to locate the city.

Use: USDA (United States Department of Agriculture). 1992. Kenai River landowner's guide. Prepared by the U. S. Department of Agriculture, Soil Conservation Service (SCS) for the Kenai Soil and Water Conservation District, Kenai, Alaska.

Pages cited within a work, that has an editor and a translator.

Use: Rumyantsev, A. I., and M. A. Darda. 1970. Summer herring in the eastern Bering Sea. Part V: 409–421 [In] *Soviet fisheries investigations in the northeastern Pacific*. Edited by P. A. Moiseev. Translated by Israel Program for Scientific Translation, Jerusalem, 1972.

Edited works.

Use: Humphreys, R. D., S. M. McKinnel, D. Welch, M. Stocker, B. Turriss, F. Dickson, and D. Ware, editors. 1994. Pacific stock Assessment Review Committee (PSARC) annual report for 1993. *Canadian Manuscript, Report of Fisheries and Aquatic Sciences*, No. 2227.

Work within a publication with editors.

Use: Eggers, D. M., and D. E. Rogers. 1987. The cycle of runs of sockeye salmon *Oncorhynchus nerka* to the Kvichak River, Bristol Bay, Alaska: cyclic dominance or depensatory fishing? Pages 343–366 [In] H. D. Smith, L. Margolis, and C. C. Wood, editors. *Sockeye salmon *Oncorhynchus nerka* population biology and future management*. Canadian Special Publications of Fisheries and Aquatic Science No. 96, Ottawa.

Published proceedings/conferences/symposiums. Volume and number are shown in this citation as well.

Use: Hilborn, R., T. P. Quinn, D. E. Schindler, and D. E. Rogers. 2003. Biocomplexity and fisheries sustainability. *Proceedings of the National Academy of Sciences* 100 (11):6564–6568.

Rusch, D. H., et al., editors. 1998. *Biology and management of Canada geese: Proceedings of the international Canada goose symposium, held April 23–25, 1991, Milwaukee, WI.*

Dissertations and theses.

Use: Matlock, G. C. 1984. A Texas red drum management plan. Doctoral dissertation, Texas A&M University, College Station.

Consultant reports.

Use: Jones and Stokes Associates Inc. 1987. Southcentral Alaska sport fishing economic study. Final research report, November 1987 (JSA86-0413), Sacramento, CA. Prepared for the Alaska Department of Fish and Game, Division of Sport Fish, Research and Technical Services, Anchorage.

Books.

Use: Mayr, E. 1963. Animal species and evolution. The Belknap Press of Harvard University Press, Cambridge, MA.

Fisheries Rehabilitation, Enhancement and Development Division Reports.

Use: Alt, K. T. 1979. Inventory and cataloging of sport fish and sport fish waters of western Alaska. Alaska Department of Fish and Game. Federal Aid in Fish Restoration, Annual Performance Report, 1978–1979, Project F-9-11, 20 (G-I-P), Juneau. [http://www.sf.ADF&G.state.ak.us/FedAidpdfs/fredF-9-11\(20\)G-I-P.pdf](http://www.sf.ADF&G.state.ak.us/FedAidpdfs/fredF-9-11(20)G-I-P.pdf)

C.5 References Cited Format for Electronic Sources

When including Internet sources the author must consider the constant change in presentation of Web material. Internet citations need to be as thorough as references to paper publications, and should include the following information.

1. Author, editor, or name of institution standing in place of author.
2. Title, including subtitle if there is one.
3. Facts of publication including date.
4. A URL for Internet sources or, for other electronic sources, an indication of the medium consulted (e.g., DVD, CD-ROM).

This combination of information should supply the background necessary to access the source of the citation in the event that the URL is no longer current. If a citation is missing any required information, the convention is to provide clarifying information within square brackets. For Web sites, the date, title or place of production may not be clearly published in the site; however, they may be necessary to clarify the citation. Example: A citation to ADF&G commercial catch statistics published on the Web site may contain the title [2003 preliminary Alaska commercial salmon catches]. The brackets indicate that the information is provided for clarification, and that there is no title bar for the page.

Although an access date is often considered an optional addition to the reference, it is wise to include such date when the material is time sensitive. The access date should be provided parenthetically at the end of the reference, and verified as close to the publication date as possible.

Use: NWT (Northwest Marine Technology). 2003. Mark IV instruction manual automated coded wire tag injector. www.nmt.us/products/cwt/mkiv/mkiv_manual.pdf (Accessed November 2007).

a. Uniform resource locators

Avoid editing URLs for style. URLs are case sensitive and punctuation and format has specific meaning within some markup languages.

Online information or documents cited in your publication may, over time, be moved or deleted from the Web. Readers will then be unable to reference your citations. For this reason, online documents cited should also be saved as hard copy and as part of your backup files. If your online source is also available in print, reference the print source instead, as it is more stable.

If a link ceases to exist before publication, include the information parenthetically at the end of the citation.

Use: NWT (Northwest Marine Technology). 2004. Could the coded wire tag affect the navigation and homing of salmonids? <http://www.nmt-inc.com/Applications/CWT/Straying.pdf> (Accessed March 2, 2004, site currently discontinued).

Permanent source identifiers may become a more commonly found element as the availability of electronic sources grows. This will ease electronic source citations—providing a permanent locator for the source. A *DOI*, or *digital object identifier*, is available for some online periodicals and when provided it should be included in the citation.

Use: Fontaine, K. M., J. R. Cooley, and C. Simon. 2007. Evidence for paternal leakage in hybrid ceriodical Cicadas (Hemiptera: *Magicicada* spp.) Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs. www.plosone.org/article/doi/10.1371/journal.pone.0000892

b. Databases

Start the citation with the author, followed by the year, title of the database edition, place of publication, publisher, URL, access date, and any necessary notes [Notes.]

Use: (ADF&G) Alaska Department of Fish and Game. 2010. Alaska sport fishing survey results, 1996–2008. ADF&G Division of Sport Fish, Alaska Statewide Harvest Survey project. <http://www.sf.ADF&G.state.ak.us/statewide/FishingSurvey/index.cfm> (Accessed April 5, 2010).

When a database contains secure or confidential information, the URL cannot be provided.

Use: Statewide electronic fish ticket database. 1st edition. Alaska Department of Fish and Game, Division of Commercial Fisheries. 1985 to present. (Accessed November 21, 2009). [URL not publicly available as some information is confidential.]

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Index

A

- abalone/abalones 68
- abbreviations, *See also acronyms*
 - abbreviated designations 113
 - academic degrees 113
 - caribou herds, Alaska 21
 - compass directions 22
 - days of week 22
 - latitude/longitude (lat/long) 23
 - mathematics and statistics 120
 - months 23
 - periods, with 17
 - physics and chemistry 120
 - prefixes 119
 - scientific 119
 - sex 24
 - social titles 113
 - temperature 119
 - time 119
 - weights and measures 119
- above-mentioned 25
- academic degrees 113
 - Doctor of Philosophy degree 22
- acronyms 16–24, *See also individual listings*
 - ADF&G divisions and sections 17
 - agencies, national and international 19–21
 - agencies, Native 19–21
 - agencies, other 19–21
 - agencies, State of Alaska 18
 - agencies, U.S./federal 18–19
 - a or an, preceded by 16
 - aquaculture associations 19–21
 - caribou herds, Alaska 21
 - commissions 19–20
 - first reference 16
 - initialisms 16
 - miscellaneous 22–24
 - news releases (NR) 16
 - organizations, national and international 19
 - organizations, Native 19–21
 - organizations, other 19–21
 - organizations, U.S./federal 18–19
 - overuse 16
 - periods, with 17
 - plurals 17
 - State of Alaska 18
 - the, preceded by 16
 - U.S./federal 18–19
- Actiniidae, list of species 89
- active voice 116
- addendum/addenda 70
- add-on 25
- ADF&G logo, when to use 12
- adipose-clipped 25
- adult, salmon life stages 63
- affect/effect/impact 47
- age at maturity/age-at-maturity 25
- age class 25, 36
- agenda/agendas 70
- age terms 25
- age-weight-length (AWL) 22, 25
- aging/ageing 47
- Alaska Administrative Code, citing within the text 133
- Alaska/Alaskan 47
- Alaska culture, standard references 129
- Alaska Panhandle 44
- Alaska Resources Library and Information Services (ARLIS) 11, 12
- Alaska State Library 11, 12
- Alaska Statute, citing within the text 133
- alevin/alevins 68
- alevin, salmon life stages 63
- alga/algae 68
- allocate/apportion 48
- all right/alright 48
- all-terrain 25
- alternate/alternative 48
- among/between 48
- amphibians and reptiles, list of species 106
- amphibians, standard references 129
- and/or 48
- anemones, list of species 89
- angle brackets 108
- angler-day/angler-hour 25
- apostrophes 17, 71, 76

apportion/allocate 48
 appraise/apprise 48
 aquatic invertebrate species, standard refer-
 ences 126
 archiving requirements, publications 10–11
 Arctic/arctic 41
 areawide 25
 articles, content and distribution require-
 ments 12
 artisan/craftsman 118
 as/because/since 48
 as/like 49
 assure/ensure/insure 49
 Athabaskan/Athabaskan/Athapaskan 49
 at-risk 25
 Attorney General/attorney general 41, 46
 audio/film/video, content and distribution
 requirements 12
 audiotape 25
 average/mean/median/midpoint 49
 awhile/a while 50

B

backcountry 25
 backtrack 25
 backwater 25
 baseline 26
 Bay/bay 41, 44
 beach seine 37
 bear-baiting/bear baiting 26
 bear/bears/Ursids 68, 102
 bear-viewing/bear viewing 26
 beaver/beavers 68
 because/since/as 48
 before-mentioned 25
 benefit-cost 26
 between/among 48
 bias-free language 118
 bids, publications 7–8
 bio (words) 26
 birds, list of species 90–102
 bird species, standard references 126
 bird watcher 26
 bi/semi 50
 bi (words) 26
 bison 68, 103, 105

bivalves, list of species 85
 Board/board 41, 46
 boat day 26, 36
 booklets, content and distribution require-
 ments 12
 books, content and distribution requirements
 12
 bottomfish 26
 bottomwater 26
 braces 108
 break up/breakup 26
 broad-leaved 26
 brochures, content and distribution require-
 ments 12
 broodstock 26
 brood year 26, 36
 buck/bucks 68
 burbot/burbots 68, 87
 bush/rural 41, 50
 buyback 26
 bycatch/harvest/incidental catch/take 50

C

calf 50
 cannot 26
 capital improvement projects 41
 capitalization help 41–46
 captions, writing 5
 capture-mark-recapture 26
 capture-mark-resight (CMR) 22, 26
 caribou 68, 103
 caribou herds, Alaska 21
 carryover 26
 cataloging requirements, publications 10
 catch-and-release 26
 catch-at-age 26
 catcher-only 26
 catcher–processor 26
 catcher–seller 26
 catch per unit effort/catch-per-unit-effort
 (CPUE) 22, 26
 Celsius (degrees), conversion formula 119
 centerline 26
 Central Alaska 41, 46
 Central/central 41, 46
 Central Region 41

- chairman/chairwoman/chairperson/chair 118
- char/chars 68, 88
- charter boat/charterboat 26
- checkstation 26
- Chinook salmon 41
- ages 81
 - colloquial name, use of 85
 - common name, use of 84
- chi-square 26, 120
- chlorophyll a/chlorophyll-a 26
- cisco/coscoes 68, 88–89
- clam/clams 68, 85–86
- cleanup/clean up 26
- clearcut 26
- clear water/clearwater 26
- coastline 26
- coastwide 26, 36
- cod/cods 68, 87–88
- coded wire tag/coded-wire-tag (CWT) 22, 26, 36
- Code of Federal Regulations, citing within the text 133
- cold water/coldwater 26
- colloquial names, salmon species 85
- colon use in a series 109
- commas
- dates, use with 76
 - in a series, use 108
- commercial product or vendor name, use of 13
- Commissioner/commissioner 41, 46
- common property 27
- common property harvest 64
- Community Development Quota 22
- complement/compliment 51
- compose/comprise 51
- compound words, *See also individual listings*
- commonly used 25–40
 - fishing gear 37
 - hyphenation 38–40
- comprise/compose 51
- concern/stock/stock of concern 51
- conflict of interest 13
- Congress 41
- congressman/member of Congress 118
- Constitution/constitution 41
- content requirements, publications 12
- continual/continuous 51
- conversions
- temperature 119
 - weights and measures (English) 119
 - weights and measures (Metric) 119
- copyright
- ADF&G copyright notice 14–15
 - ADF&G copyright policy 14
 - ADF&G Standard Operating Procedure III-401 Copyright Policy 14
 - registration 15
 - Standard Operating Procedure III-401 14
- correspondence, general 3, 72
- cost-benefit 26
- cost blocks 8–9, 12
- cost-effective 27
- cost-recovery/cost recovery 27
- cost recovery harvest 64
- Council/council 41, 46
- co (words) 26
- coyote/coyotes 68, 103
- crab/crabs 69, 86
- crabmeat 27
- crab pot 37
- crabs, list of species 86
- craftsman/artisan 118
- criterion/criteria/criterions 70
- crossbreed 27
- crossroad 27
- cross-sectional area 36
- cub(s) of the year 27
- curly brackets 108
- curricula, content and distribution requirements 12

D

- Dall sheep 104
- dandyline/dandylining/dandyliner 37
- database 27
- data/data point 52, 70
- data set 27, 36
- dates 75–76
- days of week, abbreviations 22

- deadloss 27
 deep-sea 27
 deep water/deepwater 27
 deer 69, 103
 degrees Celsius, conversion formula 119
 degrees Fahrenheit, conversion formula 119
 degrees Kelvin, conversion formula 119
 degrees symbol, spacing when used with numbers 120
 Delta Bison Range 41
 deme/stock 67
 Department/department 42, 46
 different from/different than 52
 dip net/dipnet/dipnetter 37
 Director/director 41, 42, 46
 disclaimer 13
 discreet/discrete 52
 distribution requirements, publications 10–11, 12
 distributions, use of italics 115
 District/district 42
 Division/division 42, 46
 divisionwide 27, 36
 doe/does 69
 Dolly Varden 88
 dominant/predominant 52
 Donut Hole 42
 downrange 27
 downriver 27
 downstream 27
 drainage 42
 drainagewide 27, 36
 drift gillnet/drift gillnetter 37
 driftnet/driftnetter 37
 dual-channel recorder 36
 dual-frequency 36
 duck/ducks 69, 92
 Dungeness 42
- E**
- each other/one another 52
 early run/early-run 27
 ear tag 27
 eartagged 27
 East/east 42, 46
 Eastside/east side/eastside 27, 42, 46
 echinoderms, list of species 86
 ecotourism 27
 eelgrass 27
 effect/impact/affect 47
 e.g./for example 23, 52
 egg, salmon life stages 63
 egg take/egg-take 27
 elect 27, 42
 electrofishing 27
 electronic slide presentations, content and distribution requirements 12
 elk 69, 103, 105
 e-mail 27
 embryo, salmon life stages 63
 em dash 111–112
 Emergency Order/emergency order 42
 emergency order (EO), content and distribution requirements 12
 emergent fry, salmon life stages 63
 en dash 78, 111
 en route 27
 ensure/insure/assure 49
 equations 122–123
 checklist 124
 in text 123
 narrative, example 124
 notation system 123
 numbered, format 123
 punctuation 123
 unique identifiers 123
 variable names 123
 escapement 58
 escapement biomass 58
 Eskimo 53
 esocids, list of species 87
 esocids/pike 69, 87
 et al. 23
 etc. 23
 even-year 27
 ex-/former 53
 experimental fishery/fish population sampling/sample fishery/test fishery 53
 exvessel 27
 ex- (words) 27, 42, 53

F

- factor of/-fold/percentage/times 53, 59
 Fahrenheit (degrees), conversion formula 119
 family and order names 85
 farther/further 54
 fauna/faunas 69
 fax 42
 federal aid 42
 federal aid contracts 42
 Federal/federal 42
 fertilized egg, salmon life stages 63
 fewer/lesser 54
 field test/field-test 27
 fieldwork 27
 film/video/audio, content and distribution requirements 12
 filter feeder/filter feeding 27
 finclip 28
 finfish 28
 finfishes, list of species 87–89
 fingerling/fingerlings 69
 fireman/firefighter 118
 firsthand 28
 First Nation, First Nations 42
 fiscal year (FY) 23, 42
 federal fiscal year (FFY) 23
 Fish and Game Fund 42
 fisherman/fishermen/fisher 118
 fishery 42
 fishery/fisheries 70, 71
 fish farming 28, 36
 fish/fishes 69
 fishing gear
 miscellaneous 37
 net (words) 37
 seine (words) 37
 trap (words) 37
 troll (words) 37
 fishing through the ice/ice fishing 55
 fish ladder 28, 36
 fish meal 28, 36
 fish pass 28, 36
 fish pathology, standard references 130
 fish population sampling/sample fishery/test fishery/experimental fishery 53
 fishpound 37
 fish species, standard references 126
 fish trap/fish-trap 37
 fishway 28
 fish wheel 28, 36, 37
 fixed-wing 28
 flightseeing 28
 floodplain 28
 floodwater 28
 flora/floras 69
 flounder/flounders 69, 87
 flyers, content and distribution requirements 12
 fly-fishing 28
 fold/percentage/times/factor of 53
 follow-up 28
 food/bait fishery 28
 food chain 28
 foot snare/foot-snaring 28
 forage fishes, list of species 87
 forestland 28
 forgo/forego 54
 fork length 28
 former/ex- 53
 former/latter 56
 formula/formulas 70
 forum/fora 70
 fox/foxes 69, 103
 freeze-up 28
 fresh water/freshwater 28
 freshwater-rearing, salmon life stages 63
 fry, plural 69
 fry, salmon life stages 63
F-test 27
 full time/full-time 28
 Fund/fund 42
 fungus/fungi/funguses 69
 furbearer/furbearers 28, 69
 further/farther 54
 fyke net 37
- G**
- gamete, salmon life stages 63
 gauge/gage 54
 gender-neutral language 118
 general correspondence 3

general fund 43
 general style 72, 76, 78, 114
 genus/genera 70
 geoduck/geoducks 69, 85
 gillnet/gillnets 37, 69
 gillnet/gillnetter 37
 goat/goats 69, 103
 goodness of fit/goodness-of-fit 28
 goose/geese 69, 93
 Governor/governor 43, 46
 grammar 116
 active voice 116
 bias-free and gender-neutral language 118
 passive voice 116
 subject-verb agreement 117–118
 grasslands 28
 grayling/graylings 69, 88
 greenbelt 28
 groundfish 28
 groundfishes, list of species 87
 groundwater 28
 grouse/grouses 69, 94
 guides, content and distribution requirements 12

H

halibut/halibuts 69, 87
 hand-held 28
 handline/handheld line 55
 handmade 28
 hand troll/hand troller 37
 handwritten 28
 hard-on-bottom 28
 hare/hares 69, 103
 harvest/incidental catch/take/bycatch 50
 harvest per unit effort/harvest-per-unit-effort (HPUE) 23, 28
 harvest stock 28
 hatchery-produced 28
 hatchery stock 28
 haulout/haul out 28
 haul seine/haul seiner 37
 headwaters 29
 herd 43
 caribou herds, Alaska 21
 herring/herrings 69, 87

herring pound 37
 herring sac roe fishery/sac roe herring fishery 29, 55
 high-profile 29
 high-ranking 29
 high seas 29, 36
 historic/historical 55
 homemade 29
 home page 29, 36
 home port 29, 36
 hook and line/hook and a line 55
 hooks
 fish hook 54
 multiple hook 54
 single hook 54
 treble hook 54
 hunt 43
 hybrid crosses 55
 hydroacoustic 29
 hyphenation, *See also individual listings*
 complex phrases without hyphens 40
 compound adjectives 38
 established compound nouns 39
 fishing gear 37
 general and technical compound words 25–36
 meaning-dependent 39
 phrasal adjectives 40
 hypothesis/hypotheses 70

I

icebound 29
 icecap 29
 ice field 29
 ice fishing/fishing through the ice 55
 ice-free 29
 ice-out 29
 ice pack 29
 idiomatic use, numbers 72, 74
 i.e./that is 23, 55
 immature, salmon life stages 63
 impact/affect/effect 47
 imply/infer 55
 incidence/prevalence 56
 incidental catch/bycatch/take/harvest 50
 in-depth 29

index/indices/indexes 70
 Indian/Native 56
 Individual Fishing Quota 23
 infer/imply 55
 informational and educational publications
 11, 12
 in-house 29
 initialisms 16
 inperiod 29
 In prep, citing sources within the text 135
 In press, citing sources within the text 135
 inriver 29
 in season/inseason 29
 inshore 29
 Inside Passage 43
 in-state/instate 29
 instream 29
 insure/assure/ensure 49
 interim-use permit 29
 Interior Alaska 43
 International Standard Book Number 9, 12
 Internet 43
 inter (prefix) 29
 interpretive signs, content and distribution
 requirements 12
 intertidal 29
 Inupiaq/Inupiat 56
 in utero 29
 irrespective/regardless 56
 italics, use of 114
 emphasis 115
 jargon 115
 Latin words 114
 names of ships, aircraft, trains 114
 variables 115
 its/it's 56
 ivermectin 43

J

jargon 36, 115
 jig line/jig/jigging/jig fishing/jig fisher 37
 juvenile 63, 81

K

Kelvin (degrees), conversion formula 119

L

lakeshore 29
 land-and-shoot 29
 land-based 29
 land birds 29
 landform 29
 landing net 37
 landlocked 29
 landowner 29
 larva/larvae 69
 late run 29
 latitude/longitude (lat/long) 80
 abbreviation 23
 latter/former 56
 lay/lie 57
 lay off/layoff 29
 legal citations, citing sources within the text
 133
 Alaska Administrative Code 133
 Alaska Statute 133
 Code of Federal Regulations 133
 Memorandum of Understanding 134
 Statutes at Large 133
 U. S. Code 133
 legal size/legal-size 29
 Legislature/legislature 43
 length-at-age 29
 length-weight 29
 lesser/fewer 54
 Libraries
 Alaska Resources Library and Information
 Services 11, 12
 Alaska State Library 11, 12
 Library of Congress 15
 lie/lay 57
 life cycle 30
 life form 30
 life history 30, 36
 life stage 30, 36
 life stages, salmon 63–64
 adult 63
 alevin 63
 egg 63
 embryo 63
 emergent fry 63

- fertilized egg 63
 freshwater-rearing 63
 fry 63
 gamete 63
 immature 63
 juvenile 63
 maturing 63
 ocean rearing 63
 ovum 63
 parr 63
 sac fry 63
 smolt 63
 spawning fish 63
 subadult 63
 like/as 49
 like/likely 57
 limited entry 30
 logo, ADF&G 12
 long distance/long-distance 30
 longline/longliner 37
 long term/long-term 30
 Lower/lower 43, 46
 low-lying 30
 lynx/lynxes 69, 103
- ## M
- macrohabitats 30
 mail-out 30
 mainstem 30
 mammals, list of species 102–105
 mammal species, standard references 127
 man-hour/man-month 118
 manmade/manufactured/artificial 118
 maps, standard references 129
 mark–recapture 30
 mark–recovery 30, 36
 marten/martens 69, 103
 mathematical symbols 119–121
 spacing 121
 mathematical terms developed by others,
 using 122
 maturing, salmon life stages 63
 mean/median/midpoint/average 49
 median/midpoint/average/mean 49
 megalopa/megalopae/megalopas 69, 70
 megalops 69, 70
 meltwater 30
 memorandum/memoranda/memorandums
 70
 Memorandum of Understanding 134
 Metridiidae, list of species 89
 microhabitats 30
 mid 30, 36
 Middle/middle 46
 mid eye to tail fork 30, 36
 midpoint/average/mean/median 30
 mink/minks 69, 103
 minnow trap/minnow-trap 37
 mixed stock 30, 36
 model releases 5
 modern scientific style 73, 76–77, 78–79,
 114
 mollusk/mollusks 69, 86
 mollusks, list of species 86
 months, use of abbreviations 23
 moose 69, 103
 moving average 30, 36
 mudflat 30
 multiple or unidentified species, how to
 designate 84
 multi (words) 30
 muskox/muskoxen 69, 103, 105
 muskrat/muskkrats 69, 103
 muzzleloader 30
 muzzleloading 30
- ## N
- names of ships, aircraft, trains, etc. 114
 Native/Indian 56
 Native/native 43
 nearshore 30
 net pen/net-pen 30
 net, types
 dip net 37
 drift gillnet 37
 driftnet 37
 fyke net 37
 gillnet 37
 landing net 37
 set gillnet 37
 setnet 37
 test net 37

- trammel net 37
- new-shell/old-shell 30
- newsletters, content and distribution requirements 12
- news release, content and distribution requirements 12, 16
- News Release/news release 43
- newsworthy 30
- non-Alaskan 30, 36
- nonindigenous 30, 36
- nonlocal 30, 36
- non-Native/nonnative 30, 36
- nonnavigable 30, 36
- non (prefix) 30, 36
- nonresident 30, 36
- nonrural 30, 36
- northern 44, 46
- northern Alaska 44, 46
- northernmost 30
- northern Pacific Ocean 44, 46
- North/north 42, 43
- North Pacific Rim 43
- North Slope 43
- northwest/northwestern 44
- numbers
- adjacent in sentence 73
 - ages, Pacific salmon 81
 - apostrophe, use with years 76
 - cardinal numbers 72, 73
 - commas, use with date 76
 - correspondence 72
 - decimal 73, 77
 - en dash, use with 78
 - figure of speech, use as 72
 - fractions 77
 - general style 72, 76, 78
 - hyphenation 38, 73, 74, 80, 81
 - idiomatic use 72, 74
 - in a series 72
 - informational and educational publications 72
 - latitude and longitude 80
 - modern scientific style 73, 76, 78
 - money 72
 - ordinal numbers 75
 - percent
 - correct use 53
 - definition 59
 - table, use of symbol in 59
 - proportions or ratios 72
 - ranges 78–80
 - sentence, at the beginning of 73
 - significant digits 122
 - spaces between, with variable and units of measurement 120–123
 - spell out, in which instances 72, 73, 75
 - symbols, use with 78–80, 121
 - time 72, 76
 - variables, use with 121
 - zero and one 74
- O**
- ocean-rearing, salmon life stages 63
- octopuses and squids, list of species 87
- octopus/octopuses/octopi 69, 87
- odd-year 31
- Office of Equal Opportunity statement 10, 12
- off-road 31
- offshore 31
- off-site 31
- oilfield 31
- old growth/old-growth 31
- old-shell/new-shell 30
- on board/onboard 31
- one another/each other 52
- ongoing 31
- online 31
- onshore 31
- on-site 31
- original data sources, citing 131–132
- otter/otters 69, 104
- outmigrate/outmigrating/outmigration 31
- overfish 31
- overharvest 31
- overwinter 31
- ovum/ova 70
- ovum, salmon life stages 63
- P**
- Pacific halibut 58, 63, 69

- Pacific herring 58, 63, 69
- Pacific Northwest 44
- Pacific Rim 44
- Pacific salmon
- ages 81–82
 - colloquial names 85
 - common names 88
 - plural 69
- Pacific salmon ages
- juvenile 81
- pan-and-tilt transducer 36
- Panhandle, Alaska 44
- parallel-beam study 36
- parameter 58
- parentheses 107
- parent year/parent-year 31
- parr, plural 69
- parr, salmon life stages 63
- part-time 31
- passive voice 116–117
- passthrough 31
- paycheck 31
- payday 31
- pellet group/pellet-group 31
- percent
- correct use 53–54
 - defined 59
 - table, use of symbol in 59
- percent/percentage/percentage points 58
- permanent fund 44
- personal communications, citing sources
- within the text 134
- personal use 31
- phenomenon/phenomena 70
- photo illustrations 5
- pike/esocids 69, 70, 87
- place 128
- place names, standard references 128
- plankter/plankton/plankters 69, 70
- plant/release/stock/transplant 59
- plant species, standard references 128
- plurals
- acronyms 17
 - animals, fishes, and related terms 68–69
 - apostrophes 71
 - general terms 70
- podcasts, content and distribution requirements 12
- point of sale/point-of-sale 31
- policeman/police officer 118
- policymaker 31
- postaudit 31, 36
- posters, content and distribution requirements 12
- postfire 31, 36
- posthunt 31, 36
- postrecruit 31, 36
- postseason 31, 36
- poststatehood 31, 36
- pot lift 31, 36
- power troll/power troller 37
- preaudit 31, 36
- predominant/dominant 52
- preemergent/preemergence 31
- preharvest 31
- prerecruit 31, 36
- prerelease 31
- preseason 31, 36
- present-day 31
- presmolt 31
- prestatehood 31, 36
- prevalence/incidence 56, 59
- principal/principle 59
- printing, *See publications: printing requirements*
- proofread 31
- publications
- archiving 10
 - bids 7–8
 - captions 5
 - cataloging 10
 - conflict of interest 13
 - content requirements 12
 - cost blocks 8–9, 12
 - distribution requirements 10, 12
 - images, use of 4
 - International Standard Book Number 9, 12
 - model releases 5
 - Office of Equal Opportunity statement 10, 12
 - photo illustrations 5–6

- printing requirements 7
 procedural requirements 7–10
 procurement requirements 7–8
 production 8
 right to privacy 4
 staff photos 6
 types and standards 3–4
 publications, content and distribution requirements
 articles 12
 audio/film/video 12
 booklets 12
 books 12
 brochures 12
 copyright notice 14
 curricula 12
 electronic slide presentations 12
 emergency orders 12
 flyers 12
 guides 12
 informational and educational 4, 11–12
 interpretive signs 12
 journal articles and professional papers 4
 newsletters 12
 news release 12
 podcasts 12
 posters 12
 scientific and technical 4, 11
 Public Communications Section 3, 9, 10, 17
 punctuation format and abbreviations 107
 abbreviated designations 113
 academic degrees 113
 angle brackets 108
 braces 108
 colon use in a series 109
 comma use in a series 108
 em dash 111
 en dash 111
 equations 122–124
 mathematics and statistics 120
 parentheses 107
 physics and chemistry 120
 prefixes 119
 quotations, punctuation outside 113
 quotation use 112–113
 quotes, period inside 112
 quotes within quotes 113
 semicolon use in a series 109
 slash marks 112
 social titles 113
 square brackets 107
 time and temperature 119
 variables and mathematical symbols 121–122
 weights and measures 119
 purse seine/purse seiner 37
 put-and-take 31
P-value 31, 120
- ## Q
- quasi 32, 36, 59
 quotation marks 112–113
 period inside 112
 punctuation outside 113
 quotes within quotes 113
 quotes, *See publications: bids*
- ## R
- Radio 36
 radio collar/radiocollar 32, 36, 60–61
 radio tag/radiotag 32, 36, 60–61
 radiotelemetry/radiotelemetric 32, 60–61
 radiotracking/radiotracked 32, 36, 60–61
 radio wave 32, 36, 60
 radio- words 32, 36, 60–61
 adjectives spelled with a hyphen 61
 representing a process 60
 signifying objects 60
 rain forest 32
 raise/rise 61
 random 61
 range, numbers 78–80
 Range/range 44
 raptor/raptors 69
 recolonize 32, 36
 reef fish 32
 references cited
 basic guidelines 131
 databases 139
 electronic sources 138

examples 136–137
 standard format 136
 uniform resource locator (URL) 139
 references, in text
 In prep 135
 In press 135
 legal citations 133
 original data sources 131
 personal communications 134
 published reports 132
 unpublished documents 134
 references, standard 125–130
 Alaska culture 129
 amphibians 129
 aquatic invertebrate species 126
 bird species 126
 fish pathology 130
 fish species 126
 mammal species 127
 maps 129
 placenames 128
 plant species 128
 scientific reporting 125
 spelling 125
 word use 125
 Refuge/refuge 44
 regardless 62
 regardless/irrespective 56
 regard/regards 61
 Region/region 44
 regionwide 32, 36
 regulatory year (RY) 24
 reintroduce/introduce 59
 relation/relationship 62
 release/stock/transplant/plant 59
 reptiles and amphibians, list of species 106
 respectively 62
 return-at-age 32
 return/run 62
 returns per spawner/returns-per-spawner 32
 ridge top 32, 36
 right of way 32
 right to privacy 4
 rise/raise 61
 riverbank 32
 river basin 44, 46

riverbed 32
 river mile 32, 36
 river mouth/river-mouth 32, 44, 46
 River/river 44, 46
 river system 44, 46
 roadside 32
 rockfish/rockfishes 69, 87–88
 rod and pole/rod and reel 62
 rod hour 32, 36
 roundtrip 32
 rulemaking 32
 rump fat 32
 runoff 32
 run of origin/run-of-origin 32
 run/return 62
 run/run biomass 58
 rural/bush 41, 50

S

sac fry, salmon life stages 63
 sac roe 32, 36
 sac roe herring fishery/herring sac roe fish-
 ery 29, 55
 salmon ages 81
 salmonids, list of species 88
 salmon life stages 63
 adult 63
 alevin 63
 egg 63
 embryo 63
 emergent fry 63
 fertilized egg 63
 freshwater-rearing 63
 fry 63
 gamete 63
 immature 63
 juvenile 63
 maturing 63
 ocean-rearing 63
 ovum 63
 parr 63
 sac fry 63
 smolt 63
 spawning fish 63
 subadult 63
 salmon (ocean) ranching 32, 36

- salmon, Pacific
 ages 81
 colloquial names 85
 common names 84
 plural terms 69
 salt marsh 32
 salt water/saltwater 32
 same-day-airborne 32, 36
 sample fishery/test fishery/experimental
 fishery/fish population sampling 53
 sandbar 32
 scale pattern 32, 36
 scientific reporting, standard references 125
 scuba 44
 seabed 32
 seabird 32
 sea duck 33, 36
 seafloor 32
 sea-fresh 33
 seagoing 33
 sea level 33
 sea life 33
 sea lion/sea lions 69, 104, 106
 sea lion, Steller 104, 106
 seal/seals 69, 104
 sea run/sea-run 33
 seawater 33
 Section/section 44
 seedstock 33
 seine, types
 beach seine 37
 haul seine 37
 purse seine 37
 semi/bi 50
 bi (words) 26
 semicolon use in a series 109
 semiremote 33, 36
 set gillnet 37
 set gillnet/set gillnetter 37
 setnet/setnetter 37
 sex selective/sex-selectivity 33
 sex, symbols 24
 shallow-water 33
 sheep 69
 sheep, Dall 104
 shell-aging 33, 36
 shellfish 33
 shellfishery 33
 shellfish, list of species 85–87
 shorebased 33
 shorebird 33
 shoreline 33
 short-lived 33
 short term/short-term 33
 shrimp/shrimps 69
 shrimps, list of species 86–87
 side-scan sonar 36
 sightability 33
 significant digits 122
 since/as/because 48
 size selective/size-selectivity 33
 skip molt/skip-molt 33
 slash marks 112
 smolt, salmon life stages 63
 smolt/smolts 69
 snowbound 33
 snow cover 33
 snowdepth 33
 snowfall 33
 snowfield 33
 snow line 33
 snowmachine 33
 snowmelt 33
 snowpack 33
 soak-hour 33
 social titles, punctuation 113
 socioeconomic 33
 soft shell/soft-shell 33
 sonar (words) 33, 36, 64, *See also individual listings*
 Sound/sound 44
 Southcentral/southcentral 44, 46
 Southeast/southeastern 44, 46
 southernmost 33
 South/south 42, 44
 spawned-out 33
 spawning fish, salmon life stages 63
 spawn on kelp/spawn-on-kelp 33, 64
 special harvest area (SHA) 24, 64
 species
 multiple or unidentified 84
 plural, mix of species 69, 70

- sp./spp., use of 84
 species names 83–106
 Actiniidae 89
 amphibians and reptiles 106
 anemones 89
 birds 90–102
 bivalves 85–86
 colloquial names, salmon species 85
 common names, proper use 84
 common names, salmonids 88
 crabs 86
 echinoderms 86
 esocids 87
 finfishes 87–89
 first introduction 83–84
 forage fishes 87
 groundfishes 87–88
 in report titles 83
 italics 114
 mammals 102
 Metridiidae 89
 mollusks 86
 salmonids 88
 shellfish 85–87
 shrimps 86–87
 squids and octopuses 87
 subspecific names 83
 whitefishes 88
 spelling, standard references 125
 spike-fork 33
 split-beam 36
 sport fish/sport fishing 33
 sportsman/sportsperson 118
 sp./spp. 84
 square brackets 107
 squids and octopuses, list of species 87
 squid/squids 69, 87
 standard references
 Alaska culture 128
 amphibians 128
 aquatic invertebrate species 126
 bird species 126
 fish pathology 130
 fish species 126
 mammal species 126
 maps 128
 placenames 128
 plant species 128
 scientific reporting 125
 spelling 125
 word use 125
 standby 33
 State/state 45, 46
 statewide 33, 36
 statistical findings 122
 statistical tests 115
 Statutes at Large, citing within the text 133
 Steller sea lion 104, 106
 stock 45
 stock/deme 67
 stock of concern/concern/stock 51
 stock of origin 33, *See also run of origin*
 stock/transplant/plant/release 59
 stratum/strata/stratums 70
 streambank 33
 streambed 33
 streamflow 34
 stream life/stream-life 34
 streamside 34
 Styrofoam 45, *See also commercial product or vendor name, use of*
 subadult 34
 subadult, salmon life stages 63
 subalpine 34
 subarea 34
 subdistrict 34, 45
 subject-verb agreement 117–118
 sublegal 34
 subpopulations 34
 subspecies 34
 subtidal 34
 summertime 34
 Super Cub 34, 45
 symbols, list of 119–121
 symposium/symposia/symposiums 70
 system-wide 34
- T**
- tag–recovery 34, 36
 take/bycatch/harvest/incidental catch 50
 Tanner crab 45
 tar balls 34, 36

- taxon/taxa 70
 temperature
 abbreviations 119
 conversion formulas 119
 terminal harvest area (THA) 24, 64
 test fishery/experimental fishery/fish population sampling/sample fishery 53
 test net/test-net 37
 that/which 64
 thermal-chart recorder 36
 thermal mark(ing) 34, 36
 tidal flat 34
 tideland 34
 tidemark 34
 tide pool 34
 tidewater 34
 tideway 34
 timberline 34
 time
 abbreviations 76–77
 spell out 76
 time frame 34, 36
 timeline 34, 36
 time of day
 12-Hour System 76
 24-Hour System 77
 time series 34, 36
 times/-fold/percentage/factor of 53
 total population 58
 toward/towards 65
 townet 34
 trade-off 34
 trammel net 37
 trans-Alaska pipeline 45
 transplant/plant/release/stock 59
 trapline 34
 Treaty/treaty 45
 tree line 34
 treetop 34
 trout/trouts 69, 88
t-test 34, 123
 turn around/turnaround 34
- U**
- ultrasound 34
 underescapement 34
 underway 34
 unidentified or multiple species, how to designate 84
 units of measure 119
 unitwide 34, 36
 unoiled 34
 unpublished documents, citing sources within the text 135
 Upper/upper 43, 45, 46
 upriver 34
 up to date/up-to-date 34
 U.S./Canada 34
 U. S. Code, citing within the text 133
 U.S./United States 65
- V**
- Valley/valley 45
 variables
 numbers, spacing, italics, use with 79
 statistical tests and distributions, use with 115
 video/audio/film, content and distribution requirements 12
 Village/village 45, 46
 village/villager 65
 virion/virions 70, 71
 virus/viruses 70, 71
 Visqueen 45
- W**
- waiter/waitress/waitstaff 118
 walrus/walruses 69, 105
 wastewater 35
 water bird(s) 35
 water body 35, 36
 waterborne 35
 watercourse 35
 watercraft 35
 waterfowl 35
 waterfowl, plural terms 69
 waterland 35
 watershed 35
 weasel/weasels 69, 105
 webmaster 35
 web page 35

- Web site/website 35
 weir 45
 western Alaska 45, 46
 west side 42, 45, 46
 westside 35
 Westward 45, 46
 West/west 42, 45, 46
 whale/whales 69, 105
 which/that 64
 while 66
 whitefishes, list of species 88–89
 who 66
 who/whom 66
 wide-beam echoes 36
 widespread 35
 wildfire 35
 wildlife 35
 wild stock 35
 wild type/wild-type 35
 windswept 35
 wintertime 35
 with 66
 wolf/wolves 70, 105
 wolverine/wolverines 70
 word use, standard references 125
 workday 35
 worker-hour/worker-month 35, 118
 workload 35
 work station 35, 36
 World Wide Web (WWW) 24, 45
- X**
- Xerox 46, *See also commercial product or vendor name, use of*
- Y**
- year class 35, 36
 year-round 35
 yolk sac/yolk-sac 35
 young-of-year (YOY) 24, 35
 Yupik/Yup'ik 67
- Z**
- zero and one, when to spell out 74
 zoea/zoeas 70

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