



North Pacific Research Board

- ✓ Guidelines for Preparing Final Reports and Project Synopses
- ✓ Information on Final Report Review Criteria

FINAL REPORTS

Report Submission

Please create reports using standard word-processing software such as Microsoft Word or WordPerfect (Windows platform), with all figures and tables embedded. Submit files electronically to NPRB via e-mail or, for larger projects (>10MB), via CD or DVD. Reports may also be submitted in PDF format, but should allow review comments and thus not be locked or password-protected.

Final reports may be submitted in a General or Manuscript format. We expect all final reports to meet normal scientific standards of completeness and detail that will permit an independent scientific reader to evaluate the reliability and validity of methods, data and analyses.

Conventions and Formatting (both formats)

Overall: Text should have 1.5 line spacing, be left-justified, one-inch margins on all sides, no hyphenations, 11-point Times or Times New Roman (use other serif font such as Palatino, Bookman or New Century Schoolbook if Times is not available), no headers, no single lines left alone on page top or bottom, and page numbers at the bottom center.

Scientific names: Give Latin names in full (*in italics*) after the first mention of the species name. Latin names following common names should not be separated by a comma or parentheses.

Manufacturers' names: Special pieces of equipment should be described such that a reader can trace specifications by writing to the manufacturer, e.g. "Data were collected using a solid-state data logger (CR21X, Campbell Scientific, Utah, USA)." Where commercially available software was used, details of the supplier should be given in parentheses or the reference given in full in the reference list.

Units, Symbols and Abbreviations: Authors should use the International System of Units (S.I., *Système International d'Unités*; see *Quantities, Units and Symbols*, 2nd edition (1975) The Royal Society, London). Use 'L' for liter not 'l' to avoid confusion with 'one'. Use the negative index for units, e.g. number of insects g⁻¹ dry wt (also note there is no period for wt). Probability values should be denoted as *P*.

Mathematical Material: Mathematical expressions should contain symbols, not abbreviations, and be carefully represented. If the paper contains many symbols, define them as early in the text as possible, or within the Materials and Methods section. Use Roman type for suffixes and operators such as d, log, ln and exp in Roman type; bold type for matrices and vectors; and italic for other algebraic symbols (except Greek letters). Ensure that there is no confusion between similar characters like l ('ell') and 1 ('one'). Ensure that expressions are spaced as they should appear. Equations should be identified as Eqn 1, Eqn 2, etc. and can be referenced as such later in the text.

Number Conventions:

Text: numbers from one to nine should be spelled out except when used with units, e.g. two eyes but 10 stomata and 5°C, 3 years and 5 kg.

Tables and Figures: do not use excessive numbers of digits when writing a decimal number. The level of significance implied by numbers based on experimental measurements should reflect, and not exceed, their precision; only rarely can more than three figures be justified. Be consistent within tables and figures.

General Format for Final Report Submission

Title Page

The title page (example provided at the end of this document) shall include:

- North Pacific Research Board Project Final Report;
- *Your project title;*
- *Project identification number;*
- *Author(s) with appropriate affiliation(s) (Include phone and email for primary author); and*
- *Date (month and year) of submission.*

Abstract

The abstract should have a maximum length of 250 words, and should synthesize the paper's key messages as widely as possible: it should be generic, seminal and accessible to non-specialists. The abstract should include statements in relation to the study context, objectives, methodology, results and main conclusions. If the final report consists of several chapters, the abstract shall synthesize the entire report. Explain all abbreviations and acronyms.

Key Words

Provide a short list of up to 10 key words or short phrases. Include words that identify: (1) common and scientific names of principal organisms; (2) geographic area or region; (3) processes studied (e.g., behavior, reproduction); (4) methods (e.g. modeling, monitoring); and (5) other words not covered above but useful for indexing.

Citation

Provide a recommended citation for the final report, e.g.:

Morado, J.F., P.C. Jensen, L. Hauser, V. Lowe, K. Califa, N. Roberson, C. Shavey, and D. Woodby. 2005. Species identity and life history of *Hematodinium*, the causative agent of Bitter Crab Syndrome in northeast Pacific snow (*Chionieetes opilio*) and Tanner (*C. bairdi*) crabs. North Pacific Research Board Final Report 306, xx p.

Table of Contents

Provide a detailed Table of Contents that includes tables, figures, and appendices.

Study Chronology

This brief chronology should include references to any prior project numbers or related projects, changes in the title of the project or report over time, and reference to progress reports or other reports which contributed to this final report.

Introduction

State the reason for the work, the context, and the hypotheses being tested.

Objectives

In this section, we ask you to concisely explain the ‘bottom line’ of how you achieved the objectives you were funded to achieve. This section should also provide a roadmap to the rest of your report for the benefit of reviewers, NPRB staff, your colleagues, and any other readers who want to explore in more detail how you achieved your objectives.

Please refer back to your approved original Statement of Work, and list each objective as written in the Statement of Work. Then, in a standalone paragraph for each objective, tell us how you achieved that objective. Also, to guide the reader, give references (e.g. page numbers, subheads etc) to the relevant sections of the rest of the report for further detail.

If you were unable to achieve one or more objectives, you should provide a brief explanation here

Methods

Include sufficient detail that would allow another investigator to repeat the work, including a clear description of the study area, sample collections, processing and statistical analyses.

Results

State the results, including all statistics, drawing attention to important details in tables and figures. Project results that do not support or are unrelated to the conclusions should also be included. Avoid duplication between figures and tables.

Tables and figures should be numbered and placed on the page after they are first mentioned, or be embedded in the text. Refer also to photographic illustrations as Figures. Table titles and figure captions should include dates, species names, locations, etc.

Discussion

Point out the importance of the results and place this in the context of previous studies and in relation to the application of the work. Include alternative interpretations of the results if applicable; discuss whether the study hypotheses were upheld or disproven; note where there are unanswered questions. Where appropriate, set out recommendations for management or policy.

Conclusions

This shall be a brief, clear statement of the conclusions that are apparent from the discussion. Specifically describe how study objectives laid out in your statement of work were addressed and, if applicable, reasons why you may not have met certain milestones initially outlined. Identify major unanswered questions.

Publications

List all citations of peer-reviewed publications that resulted in whole or part from this NPRB-funded project, as well as a list of journal manuscripts in review, submitted or in preparation (include proposed journal name and projected date of submission).

Outreach

Provide a list of all outreach activities performed for this project, divided into the following categories: Web page developed; Exhibits/demonstration project developed; Conference presentations; Community Meetings; Presentations at Festivals/Events; Workshop Participations; Presentations in Schools (K-12,

undergraduate); Press Articles (Newspaper/Journal/Newsletter); Factsheets Produced; Video Produced; Radio/Television Interviews.

Acknowledgments

Be brief and include other funding agencies if appropriate.

Literature Cited

List all publications cited in the text alphabetically by author name. In the text, refer to the author's last name and year of publication, e.g.: "Since Brown (1986) has shown that..." or "This is in agreement with results obtained later (Chou 1997)". For citations for three or more authors, use *author et al.* in the text. Use commas to separate multiple references in one parenthesis. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates in the text exactly matches those in the reference list. References should be made in the following forms:

- ***Reports:*** Brown, B.E. 1986. Human-induced damage to coral reefs. UNESCO reports in Marine Science No. 40, UNESCO, Paris.
- ***Proceedings:*** Chou, L.M. 1997. The status of southeast Asian coral reefs. Proceedings of the 8th International Coral Reef Symposium 11, 317-322.
- ***Book chapter:*** Loya, Y. 1978. Poltless and transect methods. *In* D. R. Stoddart, R.E. Johannes (Editors) Coral reefs: research methods, pp. 197-217. Paris:UNESCO.
- ***Articles:*** Osterberg, C., Percy, W., and Kujala, N. 1964. Gamma emitters in a Fin Whale. *Nature* 204:1006-1007.
- ***Online references:*** You may reference information available online in a similar fashion to the above categories, but in doing so ensure that:
 - i. fully authenticated web addresses are included in the reference list, along with titles, years and authors of the sources being cited;
 - ii. the websites or information sources have sufficient longevity and ease of access for others to locate the citation;
 - iii. the information is of a scientific quality at least equal to that of peer reviewed information available in learned scientific journals;
 - iv. "hard" (printed) literature sources are used in preference where they are available.

Most official web sites from organizations such as professional societies, government bodies or reputable NGOs will likely satisfy these criteria.

Manuscript Format for Final Report Submission

You may instead choose to submit your final report in Manuscript format. This format contains many of the same elements as the General format but allows investigators to insert published or submitted manuscripts, or manuscripts in preparation as chapters of their final report. In order to avoid conflict with future publications, please insert a note on unpublished chapters stating that citation is not allowed without author permission. Final reports in Manuscript format shall have the following structure (details are same as those for the General format unless otherwise noted):

- ***Title Page***
- ***Abstract:*** synthesis of all chapters

- **Key Words:** one list for the full report
- **Citation**
- **Table of Contents**
- **Study Chronology**
- **Introduction**
- **Overall Objectives:** as identified in the full approved proposal
- **Manuscripts** (labeled Chapters 1 through x)
- **Conclusions:** more extensive than Conclusions listed above, this section should be an overall discussion, bringing the different components of your work together and relating it back to the statement of work
- **Publications:** list all publications as above, including the ones that form part of this report
- **Outreach**
- **Acknowledgements**
- **Literature cited:** list only those references not listed in the chapters, i.e., those used in the **Introduction** or **Conclusions**.

PROJECT SYNOPSES

A short (approximately 300-500 words) project synopsis is required to enable NPRB to effectively communicate research efforts to the public. Please write this synopsis in non-technical language and focus on allowing the reader to see “at-a-glance” what the project was about. The synopsis should include information on:

- a. **Introduction:** “Mini-abstract”; project background
- b. **Why we did it:** Why this project was undertaken
- c. **How we did it:** How this project was conducted (methods)
- d. **What we discovered:** Results of the research
- e. **What’s next?** How this research could or should continue
- f. **Outreach** (same as for the final report)
- g. **The Big Picture:** The “take-away” message about the project. If a person reads only one part of the synopsis, this should be it.
- h. **NPRB Research Interest:** Explain what makes this research relevant to the Science plan and overall mission of the NPRB.

After completion of editing and layout work by NPRB staff, the final version of the synopsis will be available in print and online as an outreach tool for both NPRB and investigators. A sample synopsis with comments and descriptions is provided below.



North Pacific Research Board *Project Synopsis*

**PROJECT
414**



FUR SEALS: OCEAN TRAVELERS

The abundance of northern fur seals (*Callorhinus ursinus*) in the Bering Sea—almost one million animals—makes them the most numerous species of marine mammal in Alaska. These animals are highly migratory; adult females spend eight months each year far south of Alaska in the North Pacific. During the breeding season (July through October), they move northward to rookeries on the Pribilof Islands in the Bering Sea and to Bogoslof Island in the eastern Aleutians.



WHY WE DID IT

Fur seal populations in the Bering Sea have been plummeting since the 1950s. Today, pup production on the Pribilofs is just 25% of what it was 50 years ago. Leading hypotheses for the decline are that climate change or commercial fisheries have had negative impacts on fur seal prey, leading to nutritional limitation of the seals; and/or that predation by killer whales has increased. We wished to help find explanations for this important conservation and ecosystem issue.



HOW WE DID IT

Two contrasting rookery sites, St. Paul Island (declining abundance, continental shelf habitat) and Bogoslof Island (increasing abundance, oceanic habitat), provided a natural system in which to investigate the consequences of different foraging strategies on fur seal health. We compared fur seal diets, foraging ranges, attendance patterns, growth, and physiological condition during the summer lactation period at the two locations. We fitted fur seals with satellite transmitters to track them, weighed and measured them, and collected blood, milk, and blubber samples in the fall of 2004 and in the summer and fall of 2005.



The Big Picture



Results from the first year of this multi-year study found that female northern fur seals from declining rookeries on St. Paul Island on the Bering Sea continental shelf had to forage further and longer and lost more mass, resulting in smaller pups at weaning, than did females at the thriving rookeries on Bogoslof Island in the ocean basin of the eastern Aleutians.

NPRB Research Interest



Northern fur seals are of particular research interest because of the overlap of their foraging grounds and diets with the location and targets of major commercial fisheries of the Bering Sea. Fisheries-related reductions in local abundance or dispersion of schools of their prey could be costly to these foraging marine mammals.

FUNDING SUMMARY

Principal Investigators:

Alan Springer,

UAF School of Fisheries
and Ocean Science

Rolf Ream,

National Marine
Mammal Laboratory

Sara Iverson,

Dalhousie University
Department of Biology

Collaborators:

Brian Fadely,

National Marine
Mammal Laboratory

Alison Banks,

UAF School of Fisheries
and Ocean Sciences

Jeremy Sterling,

National Marine
Mammal Laboratory

Year funded

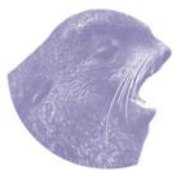
2004

Research period

September 2004–
October 2005

Budget

\$241,025



RESEARCH THEME

Marine Mammals

(Contin-

MISSION OF THE NPRB

Building a clear understanding of the North Pacific, Bering Sea and Arctic Ocean ecosystems that enables effective management and sustainable use of marine resources

WHAT WE DISCOVERED

We found that the place where fur seals forage during the summer makes a big difference in the biology of both females and pups. Females from St. Paul Island that foraged over the shallow continental shelf spend more time (seven days) and travel further (350 km) than those on Bogoslof Island that forage in the deep ocean basin (150 km in 2.5 days). As a result, St. Paul females lost more mass more quickly than those on Bogoslof, and their pups weighed less. Pups on Bogoslof were heavier by the time they were weaned; with a higher fat content likely giving them a better chance of survival.

WHAT'S NEXT?

As this multi-year study funded by NPRB and other agencies continues, further analyses of diet, body composition, foraging location and dive depth data will help us better understand how females acquire and expend energy, and how they allocate resources to their pups. Longitudinal studies of individual fitness through complete annual cycles will shed light on the importance of environmental conditions in the Bering Sea compared to those in the North Pacific, where northern fur seals spend most of their time. Ultimately, results from this and future related studies will benefit the conservation of fur seals, the rational management of commercial fisheries, and aid our understanding of the many effects of climate change on marine ecosystems.

OUTREACH

Conference presentations

- © Marine Mammal Society Biennial Meeting (poster), Dec. 2005, by J. Sterling
- © Marine Science in Alaska 2005 Symposium, by S. Iverson

Community meetings

- © St. Paul Island, July 2005, by S. Iverson, A. Springer, J. Sterling, and B. Fadely
- © Unalaska Island, July 2005, by Rolf Ream

Presentations at festivals and events

- © Sitka Whalefest, November 2005, by B. Fadely

Presentations at schools

- © Belmont Hill School, grades 7–12, in Boston, MA, by A. Banks
- © University of Alaska Fairbanks, Rasmuson Fisheries Foundation, by A. Banks

Press articles

- © *Smithsonian Magazine*
- © *New York Times*
- © *Anchorage Daily News*
- © *Fairbanks Daily News-Miner*
- © *Dutch Harbor Fisherman*

MORE | <http://project.nprb.org>

Download reports associated with this project and learn more about fur seal research funded by NPRB.



Above: Sampling female fur seal at St. Paul in November 2004. From right: Sara Iverson, Brian Fadely, Alison Banks. (Alan Springer)



Above: Transporting captured female fur seal at St. Paul in November 2004. From right: Jeremy Sterling, Alison Banks, Rolf Ream. (Alan Springer)

North Pacific Research Board

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Example title page:

NORTH PACIFIC RESEARCH BOARD PROJECT FINAL REPORT

Species identity and life history of *Hematodinium*, the causative agent of Bitter Crab Syndrome in northeast Pacific snow (*Chionieetes opilio*) and Tanner (*C. bairdi*) crabs

NPRB Project 306 Final Report

J. Frank Morado¹, Pamela C. Jensen¹, Lorenz Hauser², Vanessa Lowe¹, Katy Califf¹, Nancy Roberson¹, Christie Shavey¹ and Doug Woodby³

¹ National Oceanic & Atmospheric Administration, National Marine Fisheries Service, Alaska Fisheries Science Center, Resource Assessment & Conservation Engineering Div., 7600 Sand Point Way NE, Seattle, WA 98115. (206) 999-9999, frank@noaa.gov.

² Marine Molecular Biotechnology Laboratory, School of Aquatic & Fishery Sciences, College of Ocean & Fishery Sciences, University of Washington, 1122 NE Boat St., Box 355020, Seattle, WA 98195

³ Alaska Department of Fish & Game, P. O. Box 25526, Juneau, AK 99802-5526

August 2005

NPRB FINAL REPORT REVIEW CRITERIA

NPRB seeks to fund research that results in high quality science and substantial contributions to our understanding of marine ecosystems and fisheries research management. While we strongly encourage investigators to publish their results in peer-reviewed journals, we also aim to ensure that final contract reports meet programmatic goals as well as high scientific standards comparable to those found in journal publications.

The results of **programmatic** and **scientific** reviews will help us determine whether a project has met its programmatic milestones and scientific goals. We will use this evaluation to decide if a contract can be considered closed and paid in full, or if revisions are needed. We expect any necessary revisions to be submitted within 30 days of receipt of the review.

Programmatic Review Criteria

- **Formatting:** Does the report follow the required format and contain all relevant information?
- **Timelines:** Were progress reports submitted throughout the study and on time? Were no-cost extensions granted? Was the final report submitted on time?
- **Objectives:** Were the objectives as outlined in the approved statement of work met? If not, is there a satisfactory explanation and did the research as performed still produce a valuable outcome for the NPRB.
- **Education and Outreach:** Based on the funds available, project duration and the research topic, was there an appropriate effort to conduct education and outreach for this project? If this research is relevant to local and/or subsistence communities, was an effort made to bring research results back to the appropriate locations?
- **Metadata and data:** Has a schedule been worked out with the NPRB Data-systems Manager to transfer metadata (following NPRB metadata standards) and data to the NPRB in a timely fashion?
- **Project Synopsis:** Does the synopsis properly summarize the project, reflect the most relevant findings, and describe its significance to the mission of the NPRB?

Scientific Review Criteria

- **Presentation:** Does the report tell a cohesive story? Is a tightly reasoned argument evident throughout? Do the title, abstract, key words, introduction, and conclusions accurately and consistently reflect the major point(s) of the project? Is the writing concise, easy to follow, and interesting?
- **Length:** What portions of the project should be expanded, condensed, combined, or deleted?
- **Methods:** Are they appropriate, current, and described clearly enough to allow someone else to repeat the work?
- **Data presentation:** When results are stated in the text, can one easily verify them by examining tables and figures? Are any results counterintuitive? Are all tables and figures necessary, clearly labeled, well planned, and readily interpretable?
- **Statistical design and analyses:** Are they appropriate and correct? Can the reader readily discern which measurements or observations are independent of which other measurements or observations? Are replicates correctly identified? Are significance statements justified?
- **Interpretation:** Are conclusions supported by the findings and described clearly and concisely?
- **Broader context:** Are the current findings put into broader context? Is other relevant work in this field appropriately referenced? Is the relevance of this research described, and is necessary future research, if applicable, outlined?