

Capstone Project Guidelines

All students taking the Graduate Certificate in Fisheries or Wildlife Management are required to complete a capstone project. The capstone project is essentially an extended term paper that can be based on a literature review and/or new research data. There is a set curriculum for the capstone that is delivered in FW 506: Projects taught by Dr. Susie Dunham.

Each capstone project will be designed by the student and his or her mentor; as such, we expect there to be considerable variety in the types of projects and subjects covered. All students should meet the following learner outcomes:

Identify a fisheries or wildlife resource, ecology, or conservation issue that requires sound science to provide advice to management.

Outline the principle components of their project, including problem identification, background information, management issues, potential solutions, and recommendations for dissemination of information and management alternatives.

Synthesize available data and **apply** information to development of management alternatives.

Demonstrate proficiency in literature review and evaluation of primary research, through development of a complete bibliography.

Interpret his or her mentor's and course instructor's advice and comments to improve the final product for submission.

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| Purpose | To contribute to the field of fisheries or wildlife management with a product that reflects the principles and applications you have learned in your classes. |
| Format | Format is choice of student and mentor. Final projects can be in any communication format – a written report or “white paper”, a documentary, or even a podcast. Podcasts or video productions require a written script supported by a primary literature review. |

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| Data Collection and Analysis | <p>Use methodology appropriate to the practice of fisheries management. This can include scientific research methods, application of analytical tools such as GIS or remotes sensing, literature review and/or the collection of material for extension and outreach materials.</p> |
| Standard expected | <p>The project report must effectively communicate findings, results and/or outreach materials to an audience of fisheries or wildlife management practitioners. You can work on a project of relevance to your employer, but work submitted for the course should be new material completed during the certificate course of study. The project content must be well researched, relevant to its target audience, reliable and academically defensible.</p> |
| Length and Time Commitment | <p>The length of the research project is not an indication of quality. Actual length will depend on the topic, methods and final product as agreed with the student's mentor. A project must be succinct as possible and effectively communicated to its target audience. Most written projects range from 5,000 to 10,000 words excluding references and appendices. As a 3-credit course, the expectation for your time commitment is a total of 90-100 hours of work on research, analysis, writing, editing and final product production.</p> |
| Supervision | <ul style="list-style-type: none"> • All students should identify a "Project Mentor". Dr. Dunham can help you identify potential project mentors, and we will provide information to that person so she or he knows what is expected. Your employer or supervisor can serve as your mentor. • As part of your Program of Study, please email fw.gradadvising@oregonstate.edu to notify Dr. Dunham when you decide which term you will enroll in FW 506. This will allow us to plan for adequate oversight of your project. You must submit a short project proposal to Dr. Dunham before you will be allowed to register for the course. |

Credits

- You must obtain a written evaluation of your final product from your project mentor to receive credit for FW 506 (3 credits). Your project will also be evaluated by the course instructor who will provide feedback on its overall quality and merit.
- If your project cannot be completed during a single term, you can choose to take a grade of Incomplete. Incomplete courses must be completed within one year to receive credit.
- You'll set a timeline for your project when you enroll in FW 506. By Finals Week, you must submit either your final capstone project or a progress report and revised timeline for completing the project.

Writing your Project – Note: some of this information is also available in the course syllabus but is extended here.

Final projects can be in any communication format – a written report or “white paper”, a documentary, or even podcast. Videos and podcasts do require a written script that includes supporting references from the primary literature. Regardless of format, though, the project needs to meet high academic standards. The following are basic guidelines for Mentors and students.

1. Establish a topic and clearly address it from the beginning of the work and stay focused. Prepare a one to two-page project proposal that outlines your project and share this proposal with your mentor and FW 506 course instructor. If you change aspects of your project let your mentor and the course instructor know and discuss the change before making it. See the FW 506 Canvas site for details about this process.
2. The Oregon State University Libraries provide access, delivery and reference services that support the research of needs of students taking courses through Ecampus. The [Ecampus library services page](#) is an excellent resource. Also be sure to visit the FW 506 course Canvas site frequently.
3. Structure your project carefully. You need a clear introduction, a well-structured body of the essay and a high-impact conclusion. Most written projects follow some variation of the following:
 - Abstract/Executive Summary. A short summary of what you did, why you did it, what you found and why this matters.
 - Introduction & research question(s). This explains what your research is about, why it is important and identifies the research questions you are trying to answer.
 - Background and method. This section or sections provides the foundation for your research. What does the peer reviewed literature say about the topic, what information is there in other reports and papers? How you are going about conducting your research explained in enough detail so it could be repeated by someone else. You should also describe similar studies and what they found.
 - Results or case study. Use diagrams and tables to summarize what you found and highlight the most significant aspects of your findings.

- Discussion and conclusion. Here is where you describe the importance of your findings, the strengths and weaknesses of your study, areas for further investigation by someone else or you in the future, etc. Your concluding pages should highlight the main implications of what you found for fisheries or wildlife management.
- References (see below).
- Appendices. Here is where you put additional information, details and results that are too long to include in the main text or are of less relevance to your key findings.

If you are constructing an outreach product for your capstone project, you should provide written documentation of the following:

- Problem you are explaining and its background (include references)
 - Audience
 - What the product is and how it will be disseminated
 - Plans for evaluation of effectiveness – did you get the message across?
4. Writing style is important – this should be a professional document. Refer to writing guides such as Strunk and White’s Elements of Style. Proofread for spelling and grammar – again and again and again. If you are an inexperienced writer, you should have your draft paper edited by someone before sending it to your mentor to review, and you may need to have the final draft professionally edited. You will likely need to do at least two drafts before finalizing your product.
5. Reference your work appropriately, throughout the document and in your bibliography. The OSU Library has resources for how to cite appropriately. Do not use web sites as primary sources of information unless you can find no other source. It’s OK to use a footnote or endnote style of reference. You must include a citation in every sentence that includes information sourced from an article or other reference. You can’t just put a citation at the end of a paragraph. For example:

Multi-criteria methods are not based on monetary valuations like cost-benefit analysis, but on a more general weighting system (Kiker et al. 2005). The weighting system reflects preferences about the importance of differing outcomes such as environmental protection, economic efficiency or social well-being (Harte and Lonergan 1995; Leung 2006).

Your course instructor (Dr. Dunham) will be tough on your referencing

and citation lists. Referencing correctly is important for two reasons: (1) to give your own arguments greater weight by supporting them with references from peer reviewed journals and other sources; and (2) to acknowledge the source of a fact and/or other writers' thinking and the influence they have had on you. The 2nd area is where students often run into plagiarism issues when they get lazy about citing properly.

All podcast and videos must have a script that is referenced appropriately and in the recorded version appropriately acknowledges the contribution of others.

Supervision

All students should identify a "Project Mentor" who can help you develop your project and provide critical review. This person may be a faculty member, a courtesy faculty member, faculty at another institution, or a working professional. Dr. Dunham can advise you on how to identify a project mentor, and will provide information to that person so she or he knows what is expected. It is then up to you and your project mentor to agree upon a set of intermediate deliverables (outlines, abstracts, reference lists, drafts). The FW 506 Canvas site provides a structure for this that you can follow if you choose. You must obtain a written evaluation of your final product from your project mentor to receive credit for FW 506. Your project will also be reviewed by the Course Instructor (Dr. Dunham) who will provide feedback on its overall quality and merit.

Timeline

Start thinking about project ideas early in your Program. You may want to run your ideas for a project past the Course Instructor (Dr. Dunham), who can also provide ideas for appropriate people to approach about serving as your project mentor.

As part of your Program of Study, please notify the FW 506 course instructor (Dr. Dunham) when you decide which term you would like to enroll in FW 506. This will allow us to plan for adequate oversight of your project. You must submit a short proposal to Dr. Dunham before you will be allowed to register for FW 506.

Although the course (FW 506) is only for one term, it is sometimes difficult to complete a project from start to finish in 11 weeks, particularly if you have a job, other classes, or family obligations. You can take an incomplete for the course (with your project mentor's

agreement and instructor approval), but a better plan is to get started on the basic information gathering and structure of your project before you actually register for FW 506. Incomplete courses must be completed within one year to receive credit.

Work with your project mentor on a plan of work and detailed timeline with specific milestones and check-in dates. That way, you'll know if you are falling behind schedule and need to re-evaluate the project plan. Be sure this plan is communicated clearly to Dr. Dunham in the project proposal that you'll submit prior to FW 506 registration.