Project 2 – Research proposal for the restoration of a damaged community

* Select a community that has been damaged and develop a plan to restore that community.
* Prepare a complete research proposal to restore a damaged community using the format below. The proposal should be written as if you are requesting funding for the restoration project from an agency such as the US Department of Agriculture, US Army Corps of Engineers, the US Environmental Protection Agency, or the US National Science Foundation.
* In order to complete Project 2, consult journal articles and books that are related the community you selected and address various approaches and methods for restoration. Correspondence with persons who are involved with the damaged community and/or have knowledge of an in-progress restoration project of the community may be valuable for your project. (Tip: In addition to journal articles and books, carefully review the references cited in those sources for additional relevant information.)
* Limit your Project 2 document to 10 double-spaced pages (1” margins, 12 Pt. Arial font), exclusive of any graphs, flow and conceptual diagrams, cited literature, and the budget.
* For the flow diagrams, use the “Shapes” function in Word (used the flow diagram shapes and arrows). You can also use the auto-shapes function in PowerPoint to create your flow diagrams (and then insert the diagrams into the Word document). For the budget, use the provided Excel spreadsheet.
* The Excel budget document is an actual budget spreadsheet used for research proposals at the University of Idaho. While not all categories will apply to your particular restoration project, complete the budget as best you can for a realistic budget for your project.
* Insert all figures, tables, and budget to the end of your document (i.e., do not insert these in the body of the text). In the text, refer to your figures and tables as, Figure 1, Table 1, etc.

**Use the following section titles for Project 2**

**Title**

**Your name and major department**

**Abstract (limit: 500 words)**:

**Primary objectives (the bulleted objectives)**

**Introduction**

Include:

* Historical and other background information on the community (include the key ecological structural and functional components of the community)
* The nature of the disturbance or damage, e.g., the type and extent of the disturbance or damage, what caused the damage, when the damage was caused and by what, how much of the original community remains, etc.
* Geographic location (including the type of land ownership (e.g., private, federal land – park, Forest Service, refuges, etc. – state lands, etc.)
* Climate type: Summarize the climate in the area of the study. Your summary should include a technically correct – with the appropriate terminology – description of the climate (review the interactive lesson on [Climate](http://www.webpages.uidaho.edu/restorationecology/study.htm) for examples), and identify the key climatic elements that will affect the restoration project (e.g., drought, high rainfall, high temperatures, etc.). Complete this section by creating a graph that illustrates the climate in the area of the study (Tip: Review the graphical illustration of climate – the section on Climate descriptions in the interactive lesson on Climate). Add this graph to the end of the project document; refer to the diagram in the text as, e.g., “Figure 2.”
* A systems flow diagram on the disturbed community (add to the end of the project document; refer to the diagram in the text as, e.g., “Figure 1.”
* Approach to restoration: Provide the rationale for your approach to the restoration

**Methods**

Include:

* Details on the methods and techniques that you will use for the restoration.
* Why you selected these methods and techniques (e.g., provide support, e.g., from the published literature, for your selections)
* How you will accomplish the objectives of the project
* A detailed systems flow diagram of the restoration plan. This diagram should include all of the methods for restoration as well as anticipated project issues (use the driving variable or decision maker icon – the diamond-shaped icon to this). For example, if seeding is to occur on a particular date, but several days of high winds occur – how will this affect your project timeline and costs? Or, if excessive rainfall occurs during the days you have contracted for an earth mover – how a delay affect progress and costs?
* Equipment and supplies needed (include a justification for each major item; vehicles, earth movers, seed, seedlings, soil amendments, etc.)
* Personnel required (justify each major category of personnel: graduate students, day labor, project leader (yourself), persons for planting and monitoring, etc.)

**Project schedule**

Provide a realistic timeline for the completion of each phase of the project (include the major tasks, methods, expectations, etc.), and an estimate of when the community will be full restored. Rather than text, use a bar graph style called a Gantt graph (Tip: [Internet search for Gantt graph, then select images](https://duckduckgo.com/?q=Gantt+graph&ia=web)) to summarize your project schedule.

**Expected results**

When completed what will the structure of the community and how will it function (e.g., will the community require long-term management, will there be perpetual costs for maintaining the community,

**Budget**

Use Excel spreadsheet provided to complete your project budget (use your best estimates – but realistic values for supplies, personnel, equipment, etc.). Select a category on spreadsheet and then click on the drip-down arrow to select a specific item. For example, for Travel, select Airfare-Out of State, then select the drop-down arrow to the right to display various selections. Note that items in your budget will be increased by an indirect cost rate. Such rates vary with institution; the rates provided in the spreadsheet are those at the University of Idaho. (Tip: Make several copies of the original spreadsheet so that you can experiment with completing the budget.)

Although the spreadsheet appears complex, completion is facilitated by drop-down boxes and formatted columns for cost calculations. Thus, try to work with the spreadsheet in different ways so that you become familiar with the budget.

The Excel spreadsheet was developed by Professor Alistair Smith and Ms. K, Knock, and is a spreadsheet used for research grants at the University of Idaho.

**Literature citations**

Report your cited references in the style of the journal, [*Ecology*](https://esajournals.onlinelibrary.wiley.com/journal/19399170). Tip: review the literature cited section of several articles to determine how to properly cite various publications, e.g., journals, books, chapters in books, bulletins, etc.

Suggested references (see [course web site for a detailed reference list](http://www.webpages.uidaho.edu/restorationecology/documents/Restoration%20ecology%20Book%20References.pdf))

Archibold, O. W. 1995. Ecology of world vegetation.

Barbour, M. G. and W. D. Billings. 2000. North American terrestrial vegetation. Second edition.

Smith, R.L. and T.M. 2015. Elements of Ecology, 9th Edition.

Walter, H. 1985. Vegetation of the earth and ecological systems of the geo-biosphere.