Project 1 – A critical review of a study on the restoration of a disturbed ecosystem

* Prepare an in-depth critical analysis of the case study of restoration project from the published literature
* In order to complete Project 1, you may need to consult additional journal articles and books that are related to the study you selected (Tip: Carefully review the references cited in the journal article for your study. These will assist you in finding any related articles).
* Limit your Project 1 document to five double-spaced pages (1” margins, 12 Pt. Arial font), exclusive of any graphs, flow and conceptual diagrams, and cited literature. Add the graphs, tables, and illustrations to the end of the document (after the references) and refer to these as, e.g., Figure 1, Table 1, etc., in the text of your document.
* Use the section titles in this document
* 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 after the references section).
* When you send your final Project 1 document, include a copy (“pdf” format) of the original journal article for the study you analyzed.

**Project 1 title**

**Citation of your selected study:**

[Author(s), year, title, journal/book/proceedings, etc.: follow the citation format of the journal, Ecology]

**Study summary**:

[Copy/paste the abstract from the journal article, but reformat text to 12 pt. Arial font]

**Primary objectives**

[Determine the primary objectives of the study and write them below in your own words]

**Ecosystem: Pre-disturbance condition** (Limit: two paragraphs)

For the undisturbed and climax ecosystem of the study, summarize the key and major structural elements (canopy architecture and layers, vegetation cover, leaf area index, etc.) and functional processes (major nutrient cycles, energy flows, hydrological aspects, trophic levels, etc.) of the ecosystem for the study you selected to analyze. Complete this section by creating a systems ecology flow diagram of the ecosystem to illustrate the structural and functional aspects of the ecosystem.

References such as those below are excellent sources of information on the structure and function of ecosystems:

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.

**Ecosystem: Type and extent of the disturbance** (Limit: two paragraphs)

For the disturbed ecosystem, summarize how the key and major structural elements and functional processes have been altered. Complete this section by creating a systems ecology flow diagram of the disturbed ecosystem to illustrate how the structural and functional aspects of the ecosystem have been affected. (Tip: Use the flow diagram from the undisturbed ecosystem, and then illustrate where and how the ecosystem has been disturbed and altered.)

**Geographic location**

In addition to the geographic location, include the type of land ownership (e.g., private, federal land – park, Forest Service, refuges, etc. – state lands, etc.)

**Climate type** (Limit: One paragraph)

[Review the interactive lesson on Climate on the course website for information on climate types]

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 (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 (for guidance on the graphical illustration of climate, consult the section on Climate descriptions in the interactive lesson on Climate).

**Restoration plan** (Limit: three paragraphs)

Summarize how the researchers approached the restoration (e.g., an experimental approach, an empirical approach, trial and error, etc.), including the methods and the basis for the methods, time line, type and extent of post-restoration management required. Include a flow diagram of the restoration plan.

**Execution** (Limit: two paragraphs)

Analyze the methodology of the study. Include the key methods, the basis for selecting the methods, key cultivation methods (e.g., earth moving equipment, soil amendments, irrigation, etc.) time-line, costs, equipment, etc. Include a flow diagram of the methodology used in the study.

**State of the restoration:** (Limit: three paragraphs)

Critically analyze the success of the restoration in establishing the structure and function of the undisturbed ecosystem. Include an analysis of how the costs of the restoration compare to its success: are the costs one-time or are they based on continual management, how is recreational and commercial use of the land affected, etc. Use your flow diagram for the undisturbed ecosystem to illustrate the success of the study (e.g., indicate where the study was successful and where the study failed).

**References**

Cite the references you used in the format of the journal, [*Ecology*](https://esajournals.onlinelibrary.wiley.com/journal/19399170).

**Note**. Add flow diagrams, graphs, tables, and illustrations at the end of your document.