**Research Paper Guidelines**

**Due**

Date set by your TA. Assignments will need to be submitted to www.turnitin.com to check for plagiarism. If your paper is 30% similar to other papers, websites, etc. or more you will receive **NO CREDIT** for this assignment.

**Objective**

This report will be formatted like a real scientific paper in writing style and content. That means all seven components of a scientific paper that we learned about in Week 1 (Title, Abstract, Intro, Methods, Results, Discussion, Citations) will be present in this report. It also means that someone who has no idea what we did in lab that day should be able to read this report and totally get it. We recommend you give this report to someone else (a parent, a friend not in Ecology lab) to make sure you accomplished this.

In the report, you’ll be comparing the data you collected in class to data from a previous semester. The data from a previous semester will be provided on the course website.

**Requirements:**

* Cover page with Paper Title, your name, and date
* 3 pages of text (not including the literature cited, figures, or tables)
* Your paper must have the following sections: Title, Abstract, Introduction, Methods, Results, Discussion, and Literature Cited.
  + See specifics for some sections below
* Times New Roman 12pt font
* Double spaced
* 1 inch margins on top/bottom; 1.25 inch margins on left/right (these are default settings in Microsoft Word)
* In-text citations required
* You must include at least 5 references (either journal articles or books)
* NO WEB PAGES!!!!

**At minimum, your report must address the following:**

**Title**

**Abstract**

**Introduction**

* Background information on *Gambusia holbrooki*
* State your research Objectives and hypotheses

**Methods**

* In paragraph form, describe your field sampling methods
* Describe all calculations used for your life history tables (including how you calculated the age of the fish)
* Make sure to tell your reader what kind of life table you constructed for *Gambusia holbrooki* and why

**Results**

* Provide a table summarizing the length and age data for *Gambusia holbrooki* collected at Hennington Pond from this semester only. Use the age classes from Example 2 of the life table lab. Do not show raw data – summary tables only!
* Provide the life table from the previous semester (it’s ok to re-create this table) as a reference for your reader.
* Generate a life table for the population of *Gambusia holbrooki* that we sampled. Use the fecundity estimates shown in Example 2 of the Life tables lab. Be sure to calculate the net reproductive rate (R0), the mean generation time (G), the intrinsic population growth rate (r), and the optimal age for sexual maturity in each table.
* Include at least one paragraph of text highlighting key findings

**Discussion**

* Discuss the differences between the *Gambusia* populations you collected and the population from a previous semester. How do these populations differ with respect to R0, G, and r. What might cause these differences?
* Discuss why chose this type of life table for *Gambusia*.
* Discuss the importance of life tables in population ecology. (Hint: this is a good place for a reference)

**Works Cited/References:**

You will have to cite **at least 5 references** from scientific journals (primary or peer-reviewed) or college level textbooks. You may use all relevant primary research papers and peer-reviewed secondary sources.

Additionally, while you may use Internet search engines to locate and download research articles, you may **NOT** cite Internet websites (including Wikipedia) and encyclopedias.

**Where to find references:**

Google scholar: [www.scholar.google.com](http://www.scholar.google.com) 🡨 look for the [PDF] link in blue to the right

Web of science through FIU Library webpage: Click the following link: <http://medlib.fiu.edu/research-and-resources/databases/index.html>. Then click the W under databases. Click Web of Science and you are free to search! Some of the following info was borrowed from the general biology teaching materials.

**Examples of how to format references in your works cited/references section**

**I. Article with 1 author:**

Last name, Initials. (Year of publication) Title of paper. Name of journal volume number : pp-pp

**Example**

Alves-Gomes JA. (2001) The evolution of electroreception and bioelectrogenesis in teleost fish: a phylogenetic perspective. Journal of Fish Biology 58:1489-1511.

**II. Article with many (3 or more) authors:**

Author 1 last name, Author 1 initials, author 2 initials author 2 last name, …,final author initials final author last name. Year. Paper Title. Journal Name. Volume(issue): start page-last page.

**Examples:**

**Two authors:**

Rypel, A. L. and C. A. Layman. 2008. Degree of aquatic ecosystem fragmentation predicts population characteristics of gray snapper (Lutjanus griseus) in Caribbean tidal creeks. Canadian Journal of Fisheries and Aquatic Sciences 65:335-339.

**Three or more authors:**

Archer, S.K, S.A. Heppell, B.X. Semmens, C.V. Pattengill-Semmens, P.G. Bush, C.M. McCoy, B.C. Johnson. 2012. Patterns of color phase indicate spawn timing at a Nassau grouper (*Epinephelus striatus*) spawning aggregation. Current Zoology 58(1):70-80.

**III. Book**

Last name, Initials. (Year of publication) Title of book. City of publication: Name of press.

**Example**

Maynard-Smith, J., D. Harper. (2003) Animal Signals. Oxford: University Press.

**IV. Chapter/Section in a book**

Last name, Initials. (Year of publication) Title of chapter. In: Title of Book (Last name of editors, Initials, eds), pp-pp of chapter. City of publication: Name of Press.

**Example**

McGregor PK, T. Dabelsteen. (1996) Communication Networks. In: Ecology and evolution of acoustic communication in birds (Kroodsma DE, Miller EH, eds), pp 401-425. Ithaca: Cornell University Press.

**Rules for Citing References in your text**

While citing references in the text, do not use footnotes. Refer to articles by the author’s last name and year of publication. Follow the examples below for specific instructions.

1. **General format**:

            Once you explained an idea, finish your sentence with a reference (Author’s last name, year of publication).

Ex: Seagrasses have been found growing at depths up to 90 meters (Duarte, 1990).

1. **Two authors**

            If your source has two authors, then include both names and the year of publication (Author’s last name and Author’s last name, year of publication).

Ex: Seagrass seeds were once ground up into a powder and used as flour for Native Americans living in southern California and Baja Mexico (Hemminga & Duarte, 2000)

1. **Three or more authors**

            If your source has three or more authors, then only include the last name of the first author, followed by et al., and year of publication (Author’s last name et al., Year of publication). *Et. al.* is an abbreviation from Latin et alii meaning, “and others”. Since alii is abbreviated, it is followed by a period and a comma. Note, there is no comma or period after the first last name. In the case of three authors or more, your in-text citation would look as follows (Bernal et al., 2007).

1. **Multiple sources**

            If you are citing more than one reference, then include each reference in the same citation, but separate them with a semicolon (Last name, Year; Last name et al., Year; Last name and Last name, Year). So, if I was talking about electric fish and wanted to cite the sources from examples below my in-text citation would look like this (Alves-Gomez, 2001; Bernal et al., 2007; Maynard-Smith and Harper, 2003).