General writing tips
and instructions for Dr. Steinhart's classes

Top 10 common mistakes (if you read nothing else, read these):

1) Failing to follow the directions for formatting and content
2) Poor paragraph structure, usually because of poor topic sentences
3) Over use of "the" – always ask yourself if you really need it
4) Using anything but metric units
5) Infrequent use of citations – even plagiarism!
6) Not including scientific names of fishes
7) Not using the complete common names for fishes
8) Using data as if it were singular (datum **is** singular, data **are** plural)
9) Not writing complete table and figure captions or including a title AND a caption
10) Writing in a conversational style

Format:

- For all my assignments:
  - Use 1" margins (note that the default in Word is often 1.25")
  - Use 12 pt. times or times new roman font
  - Use double spacing
  - Indent the first line of each paragraph with 5 spaces or one tab
  - **Do not** include a blank line between paragraphs
  - Headings and subheadings are useful (sometimes) and should be separated from previous paragraphs by one blank line (headings do not count towards page limit).
- Title pages are not required (if you use one or not, titles do not count for the page total)
- Literature cited
  - Follow the format for Transactions of the American Fisheries Society, Guide for Authors (available on my web site)
  - You can use another format, but only if you check with me first
  - When citing in the text, remember to use "et al." when there are more than two authors (Smith, Robinson, and Stovall should be cited as Smith et al.). In the literature cited section, list all authors names (See TAFS format for examples)
  - References should be listed in alphabetical order (first) and then by year if the same authors appear multiple times
- Scientific studies (and reviews):
  - Are written and past tense, except possibly in the discussion
  - Always use metric units
  - It is ok to use BOTH metric and English where appropriate (For example, when listing size-limits, it is often encouraged to write: "A minimum-size limit of 24.5 cm (10 in) was enforced.")
  - Use acceptable abbreviations (e.g., "3 m" not "3 meters"; a list of scientific units and abbreviations can be found in the TAFS Guide for Authors)
  - Separate the number from the units with a space, except when the number/unit modifies another word
    - YES: "The maximum depth of the lake was 15 m."
    - YES: "The lake was 15-m deep." ("15-m" modifies deep)
    - NO: "The lake was 15 m deep." Or "The maximum depth was 15-m."

- Structure
    - Keep each paragraph to one main idea, but (for review papers) do not cover only one paper per paragraph.
    - Organize paragraphs by IDEAS and TOPICS, not by the papers you read.
    - Write a short outline of the main points you want to cover in your paper. Then, match up the citations that back-up, explain, or review each topic. Each of those papers should be cited in the appropriate paragraphs.
- My page and reference minimums are MINIMUMS. Doing the minimum does not get you an "A" grade. Doing anything less than the minimum results in a point deduction.

Common writing problems:

- Make sure to write to your audience
- They do not know what you are thinking - **write out everything you are thinking**
- Most of my assignments are scientific in nature – write appropriately
    - **Do not** use a conversational style
    - **Do not** tell cute stories (I know, science writing is dull)
    - **Do** support your statement with data!
- Topic sentences
    - Make sure to start every paragraph with a strong topic sentence that describes what the paragraph is about.
    - Make sure the rest follows the topic sentence and does not change subjects
- Introductory and concluding paragraphs
    - They should cover the broad topic of your paper without being too general
    - The introduction is like a topic sentence (really a paragraph) for your entire paper
    - The conclusion should tie everything together and mention the bigger picture
    - But, in both:
        - **Do not** get too flowery and cliché
        - **Do not** overstate your findings
        - **Avoid** statements that are too general and may have weak connections or support: "X is really important for fish. Global warming may affect Y."
- "Studies have shown"
    - Do not write: studies have shown, research suggests, in one study, etc.
    - State the facts from the study(s) and, then, cite those study(s):
        - **Good**: "Rainbow trout grow better in rivers than in lakes (Smith 1977)."
        - **Bad**: "In one study by Robert Smith, growth of rainbow trout was studied and found to be better in rivers than in lakes (Smith 1977)."
    - By including the citation(s) you are alerting the reader that there were indeed studies that proved your statement
- Avoid the overuse of pronouns ("it," "they," "them," "their," "its," etc.).
    - **Good**: "Bowfin have a long dorsal fin." – we know the topic is bowfin!
    - **Bad**: "They have a long dorsal fin." – what does "they" refer to?
- "The" is an overused word.
    - Every time you write "the," question if you really need it.
    - For example, "Feeding is important for the rainbow trout" would be better written as "Feeding is important for rainbow trout"
- Species names
    - Capitalize common names (this is new – AFS just approved this change)

- **Always** provide the scientific name, but only after you first mention a common name (if you use the scientific name in the abstract, you still need to use it the first time in the main body of the paper)
- **Italicize** scientific names
- Once you mention the genus, you can abbreviate the genus to just the first letter, if there are no other genera in your paper that start with the same letter (i.e., the after writing *Lepomis gibbosus*, you can just write *L. macrochirus*)
- Bass, trout, char, and salmon can be singular or plural for the same species (i.e., bass can refer to one or more largemouth bass). Basses, trouts, and chars refer to multiple species of bass, trout, and char. But, "salmons" is not a word.
- Fish refers to one species. Fishes means multiple species.

- Data is the plural form of datum. Therefore, the data are required (not data is required).

Citations and references:

- Make sure to cite the literature you have read – when in doubt, cite!
  - Citations provide credit for the work of others
  - Citations inform the reader to where they can find more information
  - Not citing is plagiarism
  - Citing does not allow you to copy – you must write the idea in your own words
  - However, just because an author mentions a topic in their paper, it does not make it a suitable citation. For example, Smith et al. write a paper about density-dependence in cutthroat trout. In their introduction, they mention that cutthroat trout are on the decline (and they likely cite other papers for this). So, DO NOT cite Smith et al. (they did not document a decline). Instead, find a paper cited in Smith et al. that documents the decline.
  - **Don't be afraid to cite more than one paper at a time**. One paper is often just an idea, but if two or more citations support the idea, it is a more believable trend.
- Suitable citations include:
  - Primary, peer-reviewed articles from journals
  - Agency reports
  - Scientific books
  - Theses and dissertations
  - Personal communication
- Inappropriate citations include:
  - Any web site (but look for references on web sites and find and cite the source)
  - Popular books or magazines
  - Agency fact sheets/pamphlets
  - General textbooks (i.e., introductory texts in biology, physics, etc.)

Tables, figures, and statistics (if applicable):

- Statistics – make sure to report all statistical results
  - When presenting statistical results in the text, always write a clear, descriptive, plain English statement with the statistical results in parentheses afterwards
  - t-test results are presented like this ($t = 1.23$, $df = 123$, $p = 0.123$)
  - Chi-square results are presented like this ($\chi 2 = 1.23$, $df = 12$, $p = 0.123$)
  - Example 1:
    Good: Cichlids grew faster in Bog Lake than in Mud Lake ($t = 1.23$, $df = 12$, $p = 0.03$).
    - The statement alone is very clear

        - You know the pattern of growth
        - The factual statement is backed up by the statistics

      Bad: My t-test found a significant difference in cichlid growth ($t = 1.23$, $df = 12$, $p = 0.03$).
        - After reading this, you do not know if or why growth was better or worse
        - Do not state test – that is clear from reporting the statistics
        - Saying "different" means that it had to be significant: "significant" is redundant
    - Example 2:

      Good: Growth of mudskippers was no different in Brown Lake than in Clear Lake ($t = 0.23$, $df = 12$, $p = 0.35$).
        - Statement (growth was no different) is supported by statistics
        - It is clear with WHOM and WHERE growth was examined

      Bad: Growth was higher in Brown Lake, but it was not statistically different ($t = 0.23$, $df = 12$, $p = 0.35$).
        - If growth was not statistically different, then you cannot say it was different even if the means were not equal
        - Growth was higher in Brown Lake, but higher than what?
        - The statement does not make it clear WHO or WHAT was growing better
- Figures
    - Are placed after the tables with figure captions are placed **below** the figure
    - Figures **should not have titles**, that is what the caption is for
    - Make sure captions are complete – dates, location, and what the figure shows
    - Label all axes, including metric units
    - If you use error bars, make sure to identify what the error bars show (e.g., $\pm$ SD)
    - Do not use color in figures
    - Make figures large – have them stretch across the width of the page
    - They are figures (Figure 1, Figure 2, etc.), not "graphs"
    - Figures are numbered in the order they are referenced in the text.
    - In the text, **DO NOT** write "Figure 1 shows that bass are big." Instead write "Bass were big (Figure 1)."
    - In general, figures are preferable to tables
- Tables
    - **Do not copy and paste** tables from Excel – make the table directly in Word
    - Tables are placed after the text and literature cited with captions placed above the table
    - Write complete and descriptive captions (not "Table 1. This table shows…")
    - Tables are numbered in the order they are referenced in the text.
    - In the text, DO NOT write "Table 1 shows the number of fish caught by year." Instead write "Catches varied by year (Table 1)."
    - Do not repeat data in tables and in figures (use figures if possible)
    - Small amounts of data should be included in the text, not a tiny table
    - An example of a good table format:

Table 1. Total catch by fish species in Clear Lake, Wisconsin, during 1995-1997.

Year	Yellow perch	Walleye	Crappie	Brook trout
1995	123	123	123	123
1996	123	123	123	123
1997	123	123	123	123