HISTORY OF STATISTICS IN ECOLOGY:
SEARCH ENGINE PROTOCOL

1. Go to Web of Science via the University of Chicago Library.
2. Click on **Advanced Search** > Copy and Paste the following Search Criteria in the search box: ((TS=("ecolog*") AND SU=Environmental Sciences & Ecology AND WC=Ecology))

    a. Under "Restrict results by languages and document types:" select **English** and **Article**.
    b. Under "Timespan" select **Custom year range** from years **1900** to **1999**.
    c. Under "Web of Science Core Collection: Citation Indexes" **keep all indexes selected** (SCI-EXPANDED, SSCI, A$HCI, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC.)

3. Press **Search**. You will see 13,613 results. Click on that number and, on the next browser, scroll down to "**Source Titles**" at the bottom of the left hand side handle. Click on the drop down and select **ECOLOGY**. Click **Refine**. You will see 1,100 results. Here is a link to the final result.
4. Here is a summary of your **search criteria that you can copy** in the top right corner of the page under the "Results" number. Be sure to copy this each time you search in a **new way**.

    You searched for: (((TS=("ecolog*") AND SU=Environmental Sciences & Ecology AND WC=Ecology))) *AND* **LANGUAGE:**(English) *AND* **DOCUMENT TYPES:**(Article)

    Refined by: SOURCE TITLES: (ECOLOGY)

    Timespan: 1900-1999. **Indexes:** SCI-EXPANDED, SSCI, A&HCI, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC.

5. Scroll to the very bottom of the first page. Set "**Show**" to **50 per page**, which means 22 pages to flip through.
6. At the top of each page, click on **Export** > **Excel** > select "**All records on page**" (e.g. 1-50 or, for faster results, up to 500 articles at a time) > under "Record Content" click on "**Full Record**" > **Export**
7. Now extract the number of citations per year for each journal. Click on **Create Citation Report** in the upper right hand corner of the webpage.
8. Scroll down to the bottom and click on the dropdown button that says "**Save to Excel File**". Click on it and extract all records (i.e. 1-500 then 501-1000 and finally 1001-1100). Rename the exports to "**yr_citations-n.xls**" where "n" can be 1,2,3…etc.
9. Now apply Manual Filtering Criteria.

FILTERING CRITERIA

1. Remove articles that are *not* studies. An article needs to contain a topic on natural research in the title. Ask yourself, *is it a direct study rather than a scientific review, meta-analysis, or opinion?*
    a. What is 'research'? Research is observations, conclusions, experiments, and/or methods.
    b. What is 'natural'? Natural is biotic and abiotic factors decentralized from humans. For example, we are not interested in 'human ecology', but the ecology of non-human life forms.
2. Remove studies that are duplicated in the search.
    a. In the exported Excel sheet(s), select the "**Article Title**" column > **Home** tab > **Conditional Formatting** > **Highlight Cell Rules** > **Duplicate Values…** > **OK**
3. Remove papers with citation counts of <= 0.
    a. Compute a new column called **CiteX. CiteX = "Times Cited, All Databases" – "Since 2013 Usage Count"**

b. Sort the data based on citation count. Press **Ctr + a** to select the data then > **Data** tab > **Sort > Sort by CiteX** > **Order Largest to Smallest** > **OK**

STOP

4. Frequent authors? Multiple publications in the same year?
5. Choose the __<what qualifier?>__ most cited papers from the decade.
    a. Qualifier = higher than 5% of all citations in the decade?
    b. We are interested in how statistical/research methods proliferated or degraded over time in ecology, so the best place to start looking would be at the most-read papers.
    c. Over time, we will probably want to read less cited papers to understand why they were cited less (maybe they didn't use certain statistical tools).