Developing the Research Question

Developing the Research Question is an ongoing and iterative process throughout the period of research:

- Determine an initial question or set of objectives
- Search the literature and find out what’s been done in the area
- Expand your search to include related topics and explore the literature broadly
- Interdisciplinary work requires reading and talking to people across disciplines
Developing the Research Question

- FOCUS your thinking and your topic
- Narrow your question/objectives based on:
  - What’s important
  - What’s interesting to you
  - What’s doable in the time and budget you have
- Finalize the question and objectives
- Write the background section outlining the literature review
- Develop an initial reference section

Developing the Research Question

- Determine an initial question or set of objectives
  - Your Advisor should be a help here
  - Your own interests and background may lead you down a path
  - Go to the library and look at recent theses in the area, particularly the last sections as they often outline the next areas of research needed
  - Don’t be afraid to look at work outside of your advisor’s niche, many environmental problems require interdisciplinary approaches and people with many backgrounds may be working in the area
Developing the Research Question

Search the literature
- Electronic databases available through the library website are the key
- Books in the area are great for background but rarely up-to-date enough
- Search different keywords that might be applicable
- Develop an initial list of papers to read
- READ – Printing or copying is not reading
- Ask questions of knowledgeable people if you don’t understand

Developing the Research Question

Expand your search
- When you find particularly appropriate papers, look at the reference sections and work backward
- Look at theses and dissertations in the library
- Read broadly enough to get a “big picture” view of the problem, what’s been done, what related research has happened in other disciplines
Developing the Research Question

FOCUS your thinking

- Here’s the key to success, at some point in the process, you’ve probably broadened out so that you’re confused
  - There may be multiple interesting questions/directions
  - You may feel lost in the literature
  - You want to do too much, your questions are too broad
- It’s key at this point to focus

Developing the Research Question

FOCUS your thinking

- You may find that you need a meeting with your advisor and/or committee to go through the list of things that you think are interesting avenues to explore
- They will help you to narrow and focus
- Then go back to the literature and develop depth in this area – make sure you have found and read the relevant literature
Developing the Research Question

Narrow your question/objectives

- It’s key to focus down on a clear, well defined, achievable set of objectives and get concurrence with your advisor and committee
- Think about:
  - What’s important
  - What’s interesting to you
  - What’s doable in the time and budget you have
- Some interesting things may have to be left for the next students

Finalize the question and objectives

- If you haven’t done it before, put things in writing and share with your advisor and committee
- Leverage your time and energy – write sections useable in your thesis - this gives you a jump start on your thesis
Developing the Research Question

Write the background section
- Go through the literature in the area to provide a background to the question
- Clearly state the research question and the objectives of the research.
- Share with your committee and get comments and revise as necessary
- One key to success is to keep everyone in the loop – make sure you all agree at each stage

Developing the Research Question

Develop an initial reference section
- The easiest time to write each section of the thesis is when you are actively doing that work
- Pick a style now
  - Ask your advisor
  - Look at the journals you are most likely to submit a paper too
  - Chicago is a good default style for environmental science
Developing the Research Question

Develop an initial reference section
- Keep the reference section up-to-date as you go along.
- You can always drop references you don’t use later.
- Trying to reconstruct a reference a year or two later is much harder than dropping unused references.
- Ultimately, only include those that you cite in the text.

Developing the Research Question

As I said, this is the first step but you work on this and refine it throughout your project
- Write as you go, it will make your life so much easier when you are close to being done with the project
- Keep your advisor and committee in the loop as things change