Pilot Study Report

The purpose of the pilot study is to evaluate the feasibility of your proposed research project. It should provide answers to the following questions:

1. Are your hypotheses plausible and relevant?
2. Does your study area(s) provide a system suitable for evaluating your hypotheses?
3. Will wildlife behavior in your study area allow you to address your research question?
4. Is your sampling design practical?
5. How large must your samples be? Will your intended sample sizes be adequate? (i.e., statistical power analysis)
6. Are your plot sizes, shapes, and other characteristics appropriate?
7. Will your intended study methods work?

For your pilot study, you should conduct your project in miniature. Collect some data from each kind of site, sample, etc. that will be included in your actual study. You should use the same methods that you plan to use in your actual study. Use these data to answer the questions above and to conduct a statistical power analysis. Your report should contain the following parts. Please attach a copy of your project proposal to your pilot study report.

1. Name(s).
2. Title. (5 points)
   (list species or groups of species to be studied, if not identified in title)
3. Question. (5 points)
   State explicitly what question(s) your research will address.
4. Hypotheses. (5 points)
   State your hypotheses about the question. You must state at least two. Frame your hypotheses in an “If …, then …, because … ” format.
5. Study Design and Methods. (30 points)
   5.1 Describe where you collected your pilot data. Be specific!
   5.2 Did you follow the sampling protocol described in your proposal? If not, please explain and justify any deviations.
   5.3 Was your sampling design practical? Were you able to collect the intended data within the time and effort you budgeted?
   5.4 Did your sampling methods work? Explain any methodological revisions necessary.
   5.5 Are your data forms effective? What changes do you need to make?
   5.6 Are your plot sizes, shapes, and other characteristics appropriate? Do your plots effectively represent (include) entities that you are trying to measure?
6 Power Analysis.  (30 points)

Conduct a statistical power analysis for the study design in your proposal. Use data from your pilot study to estimate all parameters (means, variances, frequencies, etc.). Results of your power analysis, which you should include in your report, should answer one or both of the following questions.

How large must your samples be (to provide adequate statistical power)?

Will your intended sample sizes provide adequate statistical power?

For some methods of data analysis (e.g., multimodel inference), you should evaluate your study design using alternatives to power analysis. If your project involves alternatives to testing statistical null hypotheses, please consult your instructor for advice.

If you need information, references, or software for analysis of statistical power, you may find your statistics text and the following sources helpful.

General information and practical advice:
http://davidmlane.com/hyperstat/power.html (and links therein)
http://www.psycho.uni-duesseldorf.de/aap/projects/gpower/how_to_use_gpower.html

Links to free power analysis packages:
http://statpages.org/#Power
http://www.psycho.uni-duesseldorf.de/aap/projects/gpower/
http://hotspur.psych.yorku.ca/SCS/Online/power/index.html

7 Pilot Study Interpretation.  (25 points)

Assess your research proposal using results of your pilot study. If the pilot study revealed problems with your proposal, you should describe the following in this section.
(1) Problems you encountered,
(2) Changes you intend to make to solve those problems,
(3) Ways that your changes will solve or marginalize the problems.

In this section, you also should answer the following questions.

7.1 Will wildlife behavior in your study area allow you to address your research question?

7.2 Does your study area(s) provide a system suitable for evaluating your hypotheses?