

Critical Analysis: Experimental Design

Attached you will find 2 of the following reports from student projects done as coursework for the University of Costa Rica Rainforest Adventure Program. These student reports represent actual experimental field projects performed with the help of naturalists in Costa Rica. Your task is to read, highlight, summarize, critically analyze, and compare the 2 reports.

Highlight terms you do not understand and define in the margin
Summarize in 1–2 sentences

Critical Analysis: Include the following points

- Statement of hypothesis or purpose
- Selection of variables
- Control and experimental groups
- Data recording
- Results
- Conclusion
- Was the hypothesis supported or not?
- Did the conclusion reflect the experimental results
- Did the authors examine sources of error? (describe)
- Did the authors suggest improvements?
- Suggest your own improvements

Comparison: Include the following points:

- Selection of topic
- Sample size
- Data presentation
- Data interpretation

Variation in Seed and Fruit Production in *Manicaria saccifera*

Andrea Sweigart, Melissa Larson, Anthony Smith
http://www.study-abroad-costa-rica.com/study_abroad_projects_fall96_06.htm

Hummingbird Floral Selection in *Heliconia danielsiana*

Caitlin Roper, Kevin Brunn, Melissa Larson, Andrea Sweigart, Chrissy Witt
http://www.study-abroad-costa-rica.com/study_abroad_projects_fall96_01.htm

The Interaction between Ants, *Acacia* Trees, and Bird Nests in Santa Rosa National Park

Christine Witt, Mike Bernstein, Chris Gutshall, Caitlin Roper
http://www.study-abroad-costa-rica.com/study_abroad_projects_fall96_03.htm

Fish Diversity in Four Different Sites in Laguna Tortuguero Estuary

Chris Gutshall, Mike Bernstein, Caitlin Roper
http://www.study-abroad-costa-rica.com/study_abroad_projects_fall96_04.htm

Site Differences in Aquatic Insect Diversity in a Tropical Premontane River

Anthony Smith, Chris Gutshall, Caitlin Roper, Crissy Witt
http://www.study-abroad-costa-rica.com/study_abroad_projects_fall96_05.htm

Differences in Species Richness of *Arecaceae* Between the Osa Peninsula and Isla del Caño

Matt Skroch and Julien Ross
http://www.study-abroad-costa-rica.com/study_abroad_projects_spring97_01.htm

Demography of *Zamia fairchildiana*, a Rare Cycad

Heather Fritz and Christina Jarvis
http://www.study-abroad-costa-rica.com/study_abroad_projects_spring97_02.htm

Seed Variation and Seedling Establishment in *Manicaria saccifera*

Julien Ross, Mathew Krehbiel, and Benjamin Iten
http://www.study-abroad-costa-rica.com/study_abroad_projects_spring97_03.htm

Analysis of the Strebliid Butterfly Community on *Glossophaga soricina*, *Carollia brevicada*, and *Desmodus rotundus* from the Sendero Cave of Santa Rosa National Park

Matthew Krehbiel and Heather Fritz
http://www.study-abroad-costa-rica.com/study_abroad_projects_spring97_04.htm

A Comparison of Euglossine Bee Species Diversity Between Isla del Caño, a Costa Rican Offshore Island, and the Adjacent Mainland

Matthew D. Krehbiel and Philip J. Nagel
http://www.study-abroad-costa-rica.com/study_abroad_projects_spring97_05.htm

Determining the Effect of "Human Herbivory" on Populations of *Manicaria saccifera*: A Preliminary Study

Pamela Toman, Christina Jarvis, and Philip J. Nagel
http://www.study-abroad-costa-rica.com/study_abroad_projects_spring97_06.htm

Forest Fragmentation and Florivorous Insect Diversity Found on *Pithecellobium saman*, a Tropical Dry Forest Tree

Philip J. Nagel and Matt Skroch
http://www.study-abroad-costa-rica.com/study_abroad_projects_spring97_07.htm