

Welcome to Your First Day!

ENV 145
Conservation Biology
Dr. Aaron L. Alford

Preview

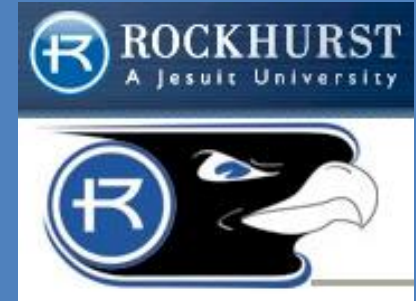
1. Introductions
2. Getting Started
3. The Scientific Method
4. Being A Good Scientist

1.

Introductions

- Education

- B.S. in Biology, 1997;
Rockhurst University
- M.S. in Biology, 2000;
University of Central
Missouri
- Ph.D. in Zoology, 2009;
Southern Illinois
University Carbondale



1.

Introductions

- Personal

- Started at DMACC in Fall 2014

- Interests

- Outdoor activities: hiking, cycling, birding
 - Reading
 - Woodworking



1.

Introductions

- Academic
 - Teaching since 1997
 - Interests
 - Grassland conservation
 - Sustainability
 - Science and Faith



2.

Getting Started

- Answers at two levels
 - Worldview level
 - Tools: beliefs and values
 - Can be subjective and objective
 - Everyday life level
 - Tools: observations and data
 - Attempt to be objective

2.

Getting Started

Q: Are top predators a beneficial part of ecosystems?

Worldview level answer: Top predators are symbols of strength and beauty, and should therefore be preserved as part of ecosystems.

Everyday life level answer: The presence of top predators influences competition among prey species, increasing biodiversity and creating ecosystems that are more resilient to environmental changes (Payne 1966).

2.

Getting Started

- Science is an everyday life activity
 - Limited to certain kinds of questions
 - Many others exist:
 - Historical
 - Literary
 - Political
 - Unable to answer worldview level questions

2.

Getting Started

- All facts require interpretation
- Everyone (even scientists!) has a worldview

3.

The Scientific Method

- Science's “worldview”
 - Empiricism
 - Parsimony
 - Universality
 - Uniformity

3.

The Scientific Method

- Scientific results have a high level of certainty, but also remain “tentative”
- Science cannot address questions of ethics, values, or faith

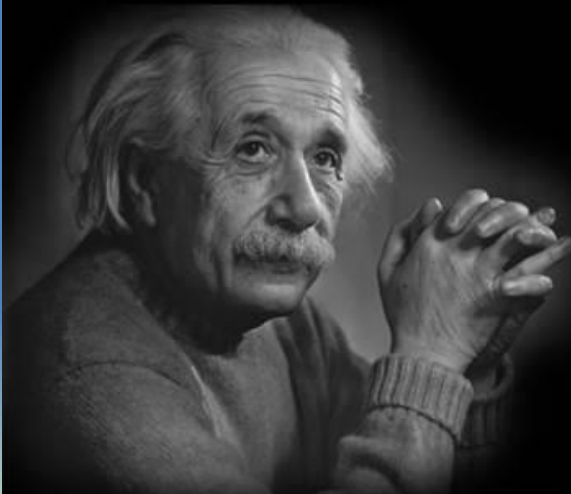
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Being a Good Scientist

- Good scientists:
 - Ask questions
 - Think critically
 - Realize they have a worldview
 - Are honest about gaps in their understanding
 - Are always learning

4.

**It's not that I'm so
smart, it's just that I
stay with problems
longer.**



Albert Einstein

German Theoretical-Physicist

(1879-1955)

QuoteHD.com

4.

Being a Good Scientist

- When disagreeing with others, scientists should:
 - Ask “Is this a worldview-level issue or an everyday life-level issue?”
 - Give the benefit of the doubt
 - Be gracious
 - Have >1 conversation
 - Aim for mutual understanding; not being right

Resources

Publications

Payne, R. T. 1966. Food web complexity and species diversity. *The American Naturalist* 100:65-75.