

Scientific Writing and Presentations

~ Titles and Introductions ~

NRC 601

Research Concepts in Natural Resources

Department of Natural Resources Conservation
University of Massachusetts Amherst

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Instructor: *Stephen DeStefano*

What's in a Title?

Importance of a title:

In reality, few people may read our papers, but thousands will see the title.

A good title:

Uses the fewest words possible to adequately describe the content of the paper . . . Be aware that indexing and abstracting services rely heavily on the title.

Natal dispersal in Florida sandhill cranes.

Length of the Title?

Occasionally titles are too short:

Ecology of bay-breasted warblers

Most titles that are too short are too general.

More often, titles are too long:

Long titles often begin with waste words such as "Studies on . . .", "Investigations of . . ."

Journal of Researches into the Natural History and
Geology of the Countries Visited During the Voyage
of the H.M.S. Beagle

Charles Darwin

(20 words)

Development of kelp rockfish, *Sebastes atrovirens* (Jordan and Gilbert 1880), and brown rockfish, *S. auriculatus* (Girard 1854), from birth to pelagic juvenile stage, with notes on early larval development of black-and-yellow rockfish, *S. chrysomelas* (Jordan and Gilbert 1880), reared in the laboratory (Pisces: Sebastidae).

NOAA Professional Paper NMFS 3, June 2004

Bycatch

NOAA, Marine Fisheries Review 66, 2004

Importance of Syntax

Obviously need to be grammatically correct . . .

but some mistakes are not so obvious

1. dangling participle

Determining flight patterns of migrating raptors using fixed observation towers.

Fertility control in the eastern gray kangaroo using Levonorgestrel implants.

2. noun stacking

Nest site selection by New England breeding adult northern goshawks.

Nest site selection by northern goshawks in New England.

The Title as a Label

The title of a paper is a label, not a sentence . . .

it is shorter, more terse

Avoid "assertive sentence title"

Canada lynx select old-growth forest cover for den sites.

- "improper and imprudent" [careless, indiscreet]
- the title states a conclusion that is more tentative in the paper

Hanging Titles, Titles as Questions, Humorous Titles

The title is split up and a colon is used . . .

Mourning doves and salt: is there an attraction?

Population viability of piping plovers: effects of predator exclusion.

- necessitates punctuation, scrambles indexes

Abbreviations and Jargon

Multiplex PCR identification of eastern and Allegheny woodrats in zones of contact.

Humorous????

Of BUGS and birds: Markov chain Monte Carlo for hierarchical modeling in wildlife research (Bayesian inference using Gibbs sampling [BUGS])

Miscellaneous

Running Head (RH)

- a short version of the title
- used at top of subsequent pages, an aid to readers

Habitat selection by the Texas tortoise in a managed thornscrub ecosystem

RH: Habitat selection and tortoises

Key Words

- provided by the author(s) - about 5 words that will identify your paper - typically different from words in the title

Authorship

Some journals list authors in alphabetical order.
Some labs used to place the head of the lab first.
Later this person was listed last ... a place of prestige.

Authorship should reflect who truly worked on the research and the paper.

- only those who actively contributed to the work

conception, design, collection, analysis, ms. prep.

- *order should reflect amount of input into research and writing*
- *BUT, all authors have intellectual responsibility for the results*

Authorship and Graduate Research

Typically, the graduate student is lead author on papers from the thesis or dissertation

1. "traditional" thesis - you are sole author; write "I" throughout
2. "manuscript" format - each chapter is ms.-ready for submission
 - graduate student is lead author
 - major advisor is typically second
 - additional authors could be collaborating faculty, agency personnel, etc.
 - write "we" throughout

Authorship and Graduate Research

Other circumstances

1. you finish your thesis but do not submit papers for journal review for >1 year

>>> major advisor can take over and become senior author

2. you are senior author on most papers, but major advisor takes one aspect and assumes lead role

>>> major advisor is senior author and you are junior author

Cardinal Rule: discuss this with your graduate advisor early and often

Introductions

To provide sufficient background to allow the reader to understand what it is you did

- a rationale for the study . . . define the problem(s) or question(s)

Your chance to:

- capture the reader - why should anyone read this paper?
- tell us in general what you did - the problem, the background
- tell specifically what you addressed - the objectives, the hypotheses

Introductions . . .

Overall, the introduction is usually fairly brief.

- often $\frac{1}{2}$ - 2 journal pages $1\frac{1}{4}$ - 5 type-written pages
(2.5:1 typed to journal page ratio)
- some researchers say tell us the results right up front

Abstract and Introduction are not equivalent.

Include a short review of the most pertinent literature.

Introductions . . .

1. Use past tense and active voice . . .

"We examined . . ."

2. Report scientific names (Latin binomials), often both in abstract and again in introduction . . .

"We examined structural properties of red maple (*Acer rubrum*) and several species of oak (*Quercus* spp.) . . ."

3. Abbreviations

"We used a Geographic Information Systems (GIS) . . ."

"I measured tree diameter at breast height (DBH) . . ."

Introductions . . .

State your OBJECTIVES

"Our objectives were to (1) examine . . . , (2) describe . . . , (3) measure . . . , (4) estimate . . .

Questions can come from the objectives

. . .

Hypotheses can arise from the questions

. . .