

## **Zoology 468 Wildlife Biology Principles -- Fall 2007**

### **Species Management Plan**

**Total Value: 100 points**

**Due: FIRST DRAFT: October 19 (25 pts)**

**FINAL DRAFT: November 16 (75 pts)**

### **OBJECTIVE:**

The primary objective of this assignment is to help you understand the process of producing a management plan for a particular species. In addition, this assignment will provide an opportunity to gain experience in

- searching the scientific literature for articles relevant to a particular topic
- reading *primary* scientific articles (first report of original research results)
- writing concisely in a scientific style

### **GRADING**

This assignment will be done in **small groups** (4-5 people) which will be composed randomly. Each plan will consist of 5 review parts (Habitat/Food, Population Status/Distribution, Population Processes, Behavior, Importance), allowing one person to be responsible for each part. The "Management recommendations" section should be developed collectively after reviewing the basic information on the species. Finally, a copy of the abstract of each cited source should be provided.

The first draft of the plan is due on **October 19**. This should be a complete draft! Each section will be graded (out of 25 points) and returned for revision. If a section is not turned in on time, 5 points will be deducted per day late.

The final draft of the plan is due on **November 16**. The final draft will be graded (out of 75 points), according to completeness, quality of writing, and appropriate use of literature. If a section of the final report is not turned in on time, 10 points will be deducted per day late.

### **WHAT IS A SPECIES MANAGEMENT PLAN?**

For this assignment you will work in small groups to produce a management plan (10 - 15 pages, double spaced, not counting literature cited) for a particular wildlife species (which you will be assigned) for southern Illinois. Some groups will work on species currently living in southern Illinois, and some will work on species that could be introduced or recolonize southern Illinois in the future.

This is not a long writing assignment (per person), so I am looking for **quality**: evidence that you have read the literature on your species (not just the abstracts), given a good amount of thought to what you have read, and spent time crafting your text in a scientific style that is **concise** -- saying what needs to be said in few words -- and **precise** -- using clear and unambiguous words and phrases.

Each plan will consist of the following 6 sections, each 1-3 pages long:

**Population status & distribution in Illinois and worldwide** (with some history about prior management of or human impact on the species)

**Habitat associations & food requirements**

**Population processes** (reproductive & survival rates, typical population densities, dispersal rates and distances)

**Behavior & Space Use** (including home range size, mating system, activity pattern over the day or the year)

**Importance** (benefit or damage to other species or the ecosystem, or to economic or other human values)

**Management Recommendations**

Management Objective: What should be achieved?

Management goal:

- Increase the population?
- Decrease it?
- Stabilize it?

Recommended actions:

- population: directly increase, decrease, or stabilize the population? How?
- habitat: create, improve, or degrade? How?
- people: education, incentives to leave alone, incentives to increase harvest?

Measurable Criteria for Success

Monitoring plan to ensure success is achieved

Each of the first 5 sections will be the responsibility of one group member.

The Management Recommendations section should be a collaborative effort by the group.

**Literature Sources:**

Each section should be well-supported by citing scientific literature (preferably primary articles), at least **7 articles per section**. If you can't find scientific articles about your particular species, use ones about closely related species.

**Web sources:** You may only use websites as references in one instance: websites run by state or federal governments can be used as references for species status (common, rare, threatened, endangered, etc.). Otherwise, websites and popular articles are NOT appropriate sources to cite -- you've got to dig into the scientific journals.

**Intellectual Honesty:** Your writing for this assignment should involve your own thought and composition, and proper citation of the ideas of others.

**Plagiarism** (*McMillen, V. E. 2001. Writing papers in the biological sciences, 3rd ed. Bedford/St. Martins*):

Turning in another student's work

Claiming another person's ideas as your own

Copying text verbatim from a source without citing the source or using quotation marks

*Note: verbatim text with quotation marks and citing the source is not plagiarism, but should be avoided or used very sparingly, when the precise wording of the source is important to your arguments.*

Slightly paraphrasing the writing of others, even when citing the source

**Citing Literature:** At the end of the paper will be a list of literature cited, in Journal of Wildlife Management format. Take care to follow this format, including the pattern of punctuation. Check a recent article in JWM for further examples.

Citation in text (only use "et al." when there are 3 or more authors):

Spotted owls often use second-growth forests during dispersal (Miller et al. 1997, Lahaye et al. 2001).

Literature Cited:

Lahaye, W. S., R. J. Gutierrez, and J. R. Dunk. 2001. Natal dispersal of the spotted owl in southern California: dispersal profile of an insular population. *Condor* 103:691-700.

Miller, G. S., R. J. Small, and E. C. Meslow. 1997. Habitat selection by spotted owls during natal dispersal in western Oregon. *Journal of Wildlife Management* 61:140-150.

### **Resources for Literature Searching**

web of science: <http://portal.isiknowledge.com/>

click on bar labeled "Web of Science", then select "General Search")

For other search databases, go to: <http://www.lib.siu.edu/resources/lifesciences>

**Remember that some search databases (especially Lexis/Nexis) can provide articles that are NOT scientific articles. You need to make sure that the source is appropriate for this assignment.**

## WHAT IS A SCIENTIFIC ARTICLE?

A scientific article reports the results of an original research project, and is published in a peer-reviewed journal or book. A scientific article does not simply report on someone else's research or on an event, but presents new information. *Peer-reviewed* means that the article is reviewed by experts in the field, who decide whether the article is sufficiently rigorous, novel, and important to be published. Scientific journals typically indicate that they are peer-reviewed on one of the opening pages of each issue. Important hallmarks of a scientific article are:

- statements of fact are supported by data or by citing previous articles

example: "The mountain lion (*Puma concolor*) is the largest native cat in Canada (Smith 1968)... We found that male mountain lions (mean mass = 90 kg) were larger than females (mean mass = 75 kg)."

- a list of cited publications (previous articles and books) is at the end of the article
- methods are described enough detail that another scientist could repeat the study
- data are presented in tables or graphs
- the paper is written by the scientists who performed the research
- the paper is written for other scientists, in a concise academic style

The following are NOT characteristics of scientific articles:

- statements of fact are presented without supporting data or citations

example: "The puma, or mountain lion, is a powerful predator that feeds on deer, elk, and other large mammals. Although some people are afraid of them, these ghosts of the forest rarely attack humans."

- people are quoted

example: When asked about the impact of this study, Dr. Federline replied "Our research has opened new avenues of inquiry in the study of coprophagy."

- published sources are not provided, except as "further reading"
- methods are not presented in detail, few data are presented
- the writing style is informal and geared toward the general public
- the paper is written by a journalist, professional writer, or the author is anonymous

**BY GROUP**

Group #	Last Name	First Name	Species
1	Large	Corey	Nutria ( <i>Myocastor coypu</i> )
1	Wyatt	Lauren	Nutria ( <i>Myocastor coypu</i> )
1	Brautigam	Kathryn	Nutria ( <i>Myocastor coypu</i> )
1	Ceglinski	Benjamin	Nutria ( <i>Myocastor coypu</i> )
2	Thomas	Abby	Hoary bat ( <i>Lasiurus cinereus</i> )
2	Ratterman	Nathan	Hoary bat ( <i>Lasiurus cinereus</i> )
2	Govoni	Daniel	Hoary bat ( <i>Lasiurus cinereus</i> )
2	Richardson	Allison	Hoary bat ( <i>Lasiurus cinereus</i> )
3	Cooper	Susan	Bobcat ( <i>Felis (Lynx) rufus</i> )
3	Sudaj	Heather	Bobcat ( <i>Felis (Lynx) rufus</i> )
3	Braun	Nathan	Bobcat ( <i>Felis (Lynx) rufus</i> )
3	Gangi	Evan	Bobcat ( <i>Felis (Lynx) rufus</i> )
4	Segelhorst	James	House finch ( <i>Carpodacus mexicanus</i> )
4	Nejmanowski	Gregory	House finch ( <i>Carpodacus mexicanus</i> )
4	Hammersley	Jordan	House finch ( <i>Carpodacus mexicanus</i> )
4	Stroh	Rob	House finch ( <i>Carpodacus mexicanus</i> )
5	Campanella	Joseph	Southern bog lemming ( <i>Synaptomys cooperi</i> )
5	Donahue	Trevor	Southern bog lemming ( <i>Synaptomys cooperi</i> )
5	Brown	Seth	Southern bog lemming ( <i>Synaptomys cooperi</i> )
5	MacKenzie	Mary	Southern bog lemming ( <i>Synaptomys cooperi</i> )
5	Hill	Toren	Southern bog lemming ( <i>Synaptomys cooperi</i> )
6	Limpers	Joseph	Bullfrog ( <i>Rana catesbeiana</i> )
6	Varner	Dana	Bullfrog ( <i>Rana catesbeiana</i> )
6	Haake	Timothy	Bullfrog ( <i>Rana catesbeiana</i> )
6	Porter	Daniel	Bullfrog ( <i>Rana catesbeiana</i> )
6	Rivera	Renee	Bullfrog ( <i>Rana catesbeiana</i> )
7	Haan	Damon	American bittern ( <i>Botaurus lentiginosa</i> )
7	Molloy	Brendon	American bittern ( <i>Botaurus lentiginosa</i> )
7	Hebert	Catherine	American bittern ( <i>Botaurus lentiginosa</i> )
7	Widowski	Paul	American bittern ( <i>Botaurus lentiginosa</i> )
7	Birky	Nicholas	American bittern ( <i>Botaurus lentiginosa</i> )
8	Torres	Francesca	Ringneck duck ( <i>Aythya collaris</i> )
8	Gunn	Laura	Ringneck duck ( <i>Aythya collaris</i> )
8	Hills	James	Ringneck duck ( <i>Aythya collaris</i> )
8	Lowery	Shannon	Ringneck duck ( <i>Aythya collaris</i> )
8	Wakamiya	Sarah	Ringneck duck ( <i>Aythya collaris</i> )
9	Distatte	Sandy	Broad headed skink ( <i>Eumeces laticeps</i> )
9	Albers	Jacob	Broad headed skink ( <i>Eumeces laticeps</i> )
9	Umemura	Yoshihiro	Broad headed skink ( <i>Eumeces laticeps</i> )
9	Ing	David	Broad headed skink ( <i>Eumeces laticeps</i> )
9	Corcoran	Jeffrey	Broad headed skink ( <i>Eumeces laticeps</i> )
10	Hubert	Jay	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
10	Beynon	Adam	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
10	Gluckleder	Nicholas	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
10	Ippensen	Alex	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
10	Mikolajczyk	Adam	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
11	Campanella	Brittney	Tiger salamander ( <i>Ambystoma tigrinum</i> )
11	Reh	Alex	Tiger salamander ( <i>Ambystoma tigrinum</i> )
11	Wilcoxon	Cassandra	Tiger salamander ( <i>Ambystoma tigrinum</i> )
11	Thompson	Rachel	Tiger salamander ( <i>Ambystoma tigrinum</i> )
11	Swift	Thomas	Tiger salamander ( <i>Ambystoma tigrinum</i> )
12	Koropchak	Sara	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
12	Nance	Kevin	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
12	Novelli	Joseph	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
12	Yee	Kathy	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
12	Jansen	Amber	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
13	Lippmann	Kiersten	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
13	Bueltmann	Samantha	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
13	Buitrago	Camilo	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
13	Bogard	John	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
13	Jarosinski	Adam	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
14	Vandermyde	Jodi	Mourning dove ( <i>Zenaida macroura</i> )
14	Pratt	Laura	Mourning dove ( <i>Zenaida macroura</i> )
14	Stroud	Janice	Mourning dove ( <i>Zenaida macroura</i> )
14	Thompson	Rachele	Mourning dove ( <i>Zenaida macroura</i> )
14	Carr	Bret	Mourning dove ( <i>Zenaida macroura</i> )
15	Corrigan	Brittney	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
15	Lamer	Mary	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
15	Keeley	Louis	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
15	Lannan	Melissa	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
15	Litchy	Alison	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
16	Conlee	Marion	Barn owl ( <i>Tyto alba</i> )
16	Mitacek	Timothy	Barn owl ( <i>Tyto alba</i> )
16	Van Vossen	Ashley	Barn owl ( <i>Tyto alba</i> )
16	Brueggemann	Andrea	Barn owl ( <i>Tyto alba</i> )
16	Adams	Justin	Barn owl ( <i>Tyto alba</i> )

**BY NAME**

<b>Last Name</b>	<b>First Name</b>	<b>Group #</b>	<b>Species</b>
Adams	Justin	16	Barn owl ( <i>Tyto alba</i> )
Albers	Jacob	9	Broad headed skink ( <i>Eumeces laticeps</i> )
Beynon	Adam	10	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
Birky	Nicholas	7	American bittern ( <i>Botaurus lentiginosa</i> )
Bogard	John	13	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
Braun	Nathan	3	Bobcat ( <i>Felis (Lynx) rufus</i> )
Brautigam	Kathryn	1	Nutria ( <i>Myocastor coypu</i> )
Brown	Seth	5	Southern bog lemming ( <i>Synaptomys cooperi</i> )
Brueggemann	Andrea	16	Barn owl ( <i>Tyto alba</i> )
Bueltmann	Samantha	13	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
Buitrago	Camilo	13	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
Campanella	Brittney	11	Tiger salamander ( <i>Ambystoma tigrinum</i> )
Campanella	Joseph	5	Southern bog lemming ( <i>Synaptomys cooperi</i> )
Carr	Bret	14	Mourning dove ( <i>Zenaida macroura</i> )
Ceglinski	Benjamin	1	Nutria ( <i>Myocastor coypu</i> )
Conlee	Marion	16	Barn owl ( <i>Tyto alba</i> )
Cooper	Susan	3	Bobcat ( <i>Felis (Lynx) rufus</i> )
Corcoran	Jeffrey	9	Broad headed skink ( <i>Eumeces laticeps</i> )
Corrigan	Brittney	15	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
Distatte	Sandy	9	Broad headed skink ( <i>Eumeces laticeps</i> )
Donahue	Trevor	5	Southern bog lemming ( <i>Synaptomys cooperi</i> )
Gangi	Evan	3	Bobcat ( <i>Felis (Lynx) rufus</i> )
Gluckleder	Nicholas	10	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
Govoni	Daniel	2	Hoary bat ( <i>Lasiurus cinereus</i> )
Gunn	Laura	8	Ringneck duck ( <i>Aythya collaris</i> )
Haake	Timothy	6	Bullfrog ( <i>Rana catesbeiana</i> )
Haan	Damon	7	American bittern ( <i>Botaurus lentiginosa</i> )
Hammersley	Jordan	4	House finch ( <i>Carpodacus mexicanus</i> )
Hebert	Catherine	7	American bittern ( <i>Botaurus lentiginosa</i> )
Hill	Toren	5	Southern bog lemming ( <i>Synaptomys cooperi</i> )
Hills	James	8	Ringneck duck ( <i>Aythya collaris</i> )
Hubert	Jay	10	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
Ing	David	9	Broad headed skink ( <i>Eumeces laticeps</i> )
Ippensen	Alex	10	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
Jansen	Amber	12	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
Jarosinski	Adam	13	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
Keeley	Louis	15	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
Koropchak	Sara	12	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
Lamer	Mary	15	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
Lannan	Melissa	15	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
Large	Corey	1	Nutria ( <i>Myocastor coypu</i> )
Limpers	Joseph	6	Bullfrog ( <i>Rana catesbeiana</i> )
Lippmann	Kiersten	13	Alligator snapping turtle ( <i>Macrochelys temminckii</i> )
Litchy	Alison	15	Greater prairie chicken ( <i>Tympanuchus cupido</i> )
Lowery	Shannon	8	Ringneck duck ( <i>Aythya collaris</i> )
Mackenzie	Mary	5	Southern bog lemming ( <i>Synaptomys cooperi</i> )
Mikolajczyk	Adam	10	Prairie king snake ( <i>Lampropeltis calligaster calligaster</i> )
Mitacek	Timothy	16	Barn owl ( <i>Tyto alba</i> )
Molloy	Brendon	7	American bittern ( <i>Botaurus lentiginosa</i> )
Nance	Kevin	12	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
Nejmanowski	Gregory	4	House finch ( <i>Carpodacus mexicanus</i> )
Novelli	Joseph	12	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )
Porter	Daniel	6	Bullfrog ( <i>Rana catesbeiana</i> )
Pratt	Laura	14	Mourning dove ( <i>Zenaida macroura</i> )
Ratterman	Nathan	2	Hoary bat ( <i>Lasiurus cinereus</i> )
Reh	Alex	11	Tiger salamander ( <i>Ambystoma tigrinum</i> )
Richardson	Allison	2	Hoary bat ( <i>Lasiurus cinereus</i> )
Rivera	Renee	6	Bullfrog ( <i>Rana catesbeiana</i> )
Segelhorst	James	4	House finch ( <i>Carpodacus mexicanus</i> )
Stroh	Rob	4	House finch ( <i>Carpodacus mexicanus</i> )
Stroud	Janice	14	Mourning dove ( <i>Zenaida macroura</i> )
Sudaj	Heather	3	Bobcat ( <i>Felis (Lynx) rufus</i> )
Swift	Thomas	11	Tiger salamander ( <i>Ambystoma tigrinum</i> )
Thomas	Abby	2	Hoary bat ( <i>Lasiurus cinereus</i> )
Thompson	Rachel	11	Tiger salamander ( <i>Ambystoma tigrinum</i> )
Thompson	Rachele	14	Mourning dove ( <i>Zenaida macroura</i> )
Torres	Franchesca	8	Ringneck duck ( <i>Aythya collaris</i> )
Umemura	Yoshihiro	9	Broad headed skink ( <i>Eumeces laticeps</i> )
Van Vossen	Ashley	16	Barn owl ( <i>Tyto alba</i> )
Vandermyde	Jodi	14	Mourning dove ( <i>Zenaida macroura</i> )
Varner	Dana	6	Bullfrog ( <i>Rana catesbeiana</i> )
Wakamiya	Sarah	8	Ringneck duck ( <i>Aythya collaris</i> )
Widowski	Paul	7	American bittern ( <i>Botaurus lentiginosa</i> )
Wilcoxon	Cassandra	11	Tiger salamander ( <i>Ambystoma tigrinum</i> )
Wyatt	Lauren	1	Nutria ( <i>Myocastor coypu</i> )
Yee	Kathy	12	Northern flying squirrel ( <i>Glaucomys sabrinus</i> )