Minnesota Wolf Hunt

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Abstract: This is a decision/dilemma case study on the commencement of the first Minnesota wolf hunt since the mid 1970's. We begin with an introduction to the issue to engage the students and set the stage for the dilemma of whether to continue, revise, or discontinue the wolf hunt in subsequent years. Next, teams of students explore background information representing one of four perspectives: hunters/trapper, indigenous groups, farmers/ranchers, wildlife advocates. All students gain a scientific/ecological perspective by experiencing an introduction to population biology concepts via a series of inquiry-based activities. Students then assemble into task forces that containing one representative from each of the four perspectives to decide on a recommendation for future wolf population management decisions in Minnesota. Wrap up includes a debrief discussion and an opportunity to write individual letters to the editor (or perhaps the DNR) offering recommendations.

Topical areas: Ecology, resource management, population dynamics, socio-environmental synthesis, systems thinking

What course(s) is this case appropriate for? Undergraduate science majors in introductory courses and non-majors (liberal studies courses) but could be used with upper-level science majors with modifications and extensions.

Education level: First- and second-year college students (introductory level)

Type/method: This is a decision/dilemma case study that uses a jigsaw approach.

Socio-Environmental Synthesis Learning Goals:
- Ability to describe a socio-environmental system, including the environmental and social components and their interactions.
    - *Describe the social and biophysical components that enter into the management decisions being made about timber wolves in Minnesota.*
    - Understand the value of different kinds of knowledge *that various groups of people possess, and value regarding the Minnesota wolf population.*
- Ability to find, analyze, and synthesize existing data.
    - Ability to evaluate quality of data, *and other information available about wolf populations and reasons for or against hunting wolves.*
    - Understand the different kinds of data used by relevant disciplines in the natural and social sciences, *such as predator and prey population data, real and estimated economic gains and losses, models projecting habitat changes, etc.*

○ Ability to integrate different types of data (interdisciplinary integration), *such as scientific, cultural, personal, and economic lines of evidence.*
● Ability to consider the importance of scale and context in addressing socio-environmental problems.
  ○ Understand that ecological and social processes often vary across differing contexts, including space, time, and conditions (e.g. economic or political), *as illustrated by changing attitudes towards wolves over time in some populations, and changing ecological forces that affect wolf populations.*
  ○ Understand that ecological and social processes interact across different scales. *For example, state boundaries and wolf hunting regional zones are human constructs.*

Objectives:
1. Recognize the Minnesota wolf hunt as a complex socio-environmental issue that includes biological, cultural, historical, social, and economic considerations.
2. To understand and apply core concepts of population biology and ecological forces that are affecting the wolf population.
3. To combine these lenses to better understand the complexity of the issue and to recognize the resulting degree of complexity of any potential decisions.
4. To provide an articulate, evidence-based recommendation for a potential decision to be made regarding hunting regulations and Minnesota's wolf population.

Introduction/Background:
Wolves were delisted from the endangered species list in Minnesota on January 27, 2012. Despite prior plans for a five-year waiting period before considering opening up a hunting season on wolves, the Minnesota Department of Natural Resources (DNR), with the authorization of the state legislature, initiated a wolf hunt in the fall of 2012, the first hunt since the mid 1970's. The quota was reached rather quickly in all areas except for northwestern Minnesota for both hunting and trapping. Populations declined more than expected following the hunt, but this could be for a variety of reasons not necessarily related to the hunt.

Students are challenged to provide a recommendation on whether subsequent wolf hunting seasons should be continued as is, revised, or discontinued. Their recommendation must be data-driven and address underlying social, economic and environmental concerns of the people of Minnesota as well as the ecological health of Minnesota's wolf populations and the ecosystems that support wolves.

Classroom Management:

I. INTRODUCE THE CASE (30 minutes)
A. Each student will read the "introductory story", which is based off of an article in a local newspaper about an "accidental" wolf hunter who was hunting deer when he came upon a large wolf and shot it.
B. All students will be introduced to a timeline of key events pertaining to the history and management of wolf populations in Minnesota, leading up the commencement of a wolf hunting season in 2012-2013.

II. DIVIDE INTO COMMUNITY GROUPS (1 class period, plus homework prior to class)
A. The instructor provides a brief overview of each community perspectives group:
- Hunters and Trappers
- Farmers and Ranchers
- Indigenous Groups
- Wildlife Advocates

B. Students familiarize themselves with the knowledge and perspectives about wolves demonstrated by selected community group by reading the assigned articles and doing some additional research on their own *before* they discuss these perspectives in their groups.
1. Each student reads materials assigned to their group and does some additional research, both as homework before class.
2. Groups answer scaffolded questions created for their specific community group (refer to Student Handouts).
3. Groups undertake further research to supplement the information provided.
4. Each group prepares a brief slide presentation (3 slides, 3 minutes) that conveys highlights about the community group's perspective.

III. LEARNING ACTIVITIES FOR POPULATION CONCEPTS (1 class period, plus homework)

5E lesson on population biology concepts:
ENGAGE (5 minutes)
- Ask students to write down the following bird species on a piece of paper: snow goose, bald eagle, passenger pigeon, ivory-billed woodpecker
- Tell students to ask their neighbor what they know about each bird and give them time to share ideas with each other
- Query the class about each bird, and emphasize any comments made about their populations and eventually reveal the story behind each bird:
  o snow geese populations are exploding due to changes in farming practices leaving more food available in the fields

o   bald eagles nearly went extinct due to low reproduction from DDT accumulating in their systems and thinning their egg shells

o   passenger pigeons numbered in the millions, but were also hunted by the millions. Even though we never thought they could disappear, they did go extinct after a severe ice storm wiped out many, causing a huge population crash

o   ivory-billed woodpeckers have not been spotted for years and are thought to be extinct due to habitat loss of mature hardwood forests in southeastern United States. Yet every so often there are some tantalizing "sightings" that excite birders from around the world!

- Tell students that you wish you could have them study populations the way real scientists do – by spending hours in the field searching, sampling, and recording – but scientists are limited by time and money, and will often use simulation models to predict what could happen to a population over time, and you will do the same to better understand population dynamics.

EXPLORE (30 minutes)

- Explain the rules of the toothpick simulation (see Student Handouts) that they will do with one or two partners in order to investigate possible population growth patterns. Suggest they divide up the tasks so that one person rolls the dice, another adds and subtracts individuals and resources from the population, and the third keeps track of how many rolls are being made and records the data.
- Assign different groups different amount of resource renewal rates (5, 10, 15, or 20 resources per year)
- Let them run the simulation for about 10 years.
- Have them graph their populations as a function of time on graph paper or an overhead.

EXPLAIN (30 minutes)

- Allow students time to rehearse the presentation of their results so that all group members will know what to say if questioned.
- Call up one group at a time to present their graph - starting with those who had a renewal rate of 20 resources and going on down to those with a renewal rate of 5.
- Encourage students to ask questions of the presenting group to explain why they ended up with their particular population growth pattern.
- Frequently apply the terms (*population demographics (births, deaths, immigration, emigration)*, *exponential growth patterns, logistic growth patterns, abiotic and biotic resource limitations, carrying capacity, extinction, fluctuations, environmental stochasticity, rare, abundant*) when appropriate to the graphs as they are being presented
- Point out the role stochastic events have on populations and how precarious small populations are to these events. Make a connection with human-defined threatened and endangered species.

ELABORATE (30 minutes)

Lead a discussion with students regarding the application of these concepts to the growth patterns of Minnesota wolf populations in the past, present, and future. Consider specific biotic (health of prey populations, disease, human encroachment on habitats) and abiotic limitations (climate change) on population growth. Discuss the potential role of immigration and emigration of wolves in and out of Minnesota, and explore how political boundaries do not follow natural ecosystem boundaries. Explore whether management decisions in neighboring states (and Canada) may affect Minnesota wolf populations.

Extensions (for advanced classes):
- Bring up the concept of minimum viable population size and the idea that genetic variability, age structure, and sex ratios must also be considered when evaluating the health of a natural population (expand quite a bit on this for advanced classes).
- Consider the social structure of wolves by learning more about the reproductive and hunting behaviors of wolves in the context of living in packs, and examining potential impacts if pack structures are disrupted. Video option: NOVA documentary on reintroduced wolves into Yellowstone (the behavioral focus rather than the ecosystem - Anderson Cooper)

EVALUATE (homework)

Assign the "population readings" to students which provide additional detail to support the discussion topics during the "elaborate" portion of the lesson.

Ask students to write a brief paragraph, as homework, describing the Minnesota wolf population in either the past, present, or future (as a conjecture). Have them incorporate the following terms into their paragraph and remind them to make sure that all of their statements are biological accurate: (*population demographics (births, deaths, immigration, emigration)*, *exponential growth patterns, logistic growth patterns, abiotic and biotic resource limitations, carrying capacity, extinction, fluctuations, environmental stochasticity, rare, abundant*)

Encourage them to refer to the following articles before they write their paragraph:
- http://minnesota.publicradio.org/display/web/2012/10/19/environment/dnr-wolf-survey
- http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2008_survey.pdf
- http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2013/wolfsurvey_2013.pdf
- http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2013/wolfseasoninfo_2012.pdf
- http://files.dnr.state.mn.us/fish_wildlife/roundtable/2010/wildlife/wolf_deer_impacts.pdf
- http://lacrossetribune.com/news/local/experts-state-wolf-hunt-could-have-unintended-consequences/article_29b1e628-15b8-11e2-be16-001a4bcf887a.html

IV. TASK FORCE MEETINGS (1-2 class periods)

A. Students are grouped into task forces, which are mixed groupings containing at least one representative of each of the community perspectives (i.e. one person from the hunters & trappers group, one person from the farmers & ranchers group, one person from the indigenous groups, and one person from the wildlife advocate group).

B. Each team member presents his/her community perspectives group's 3-minute presentation, followed by a short question and answer period to provide clarification about each community perspective. It is important to note this is not a role-play; each task force member has researched a different perspective, but he/she is *not assuming the role of that perspective.* Students are speaking from their own personal perspective, and (hopefully) incorporating evidence and ideas drawn from various sources during this case study.
(Note: An alternative would be to have each community make a single presentation to the rest of the class.)

C. After the community perspective presentations, the task force discusses the community perspectives, the students' personal perspectives, and works towards making a recommendation about the MN wolf hunt. Should it be continued, revised, or eliminated? Rationales should be backed up with multiple forms of evidence whenever possible. The strongest recommendation would be a group consensus, and groups should be encouraged to strive towards. The following questions offer a good starting point for discussion:
   1. Where do you see common ground between various community groups?
   2. Where do you see conflict between various community groups?
   3. What compromises might be acceptable to each community group? Are there compromises that would likely be perceived as intolerable to certain community groups?
   4. Where do you stand personally regarding the MN wolf hunt?
   5. What recommendation will your task force communicate regarding the MN wolf hunt?

D. Each task force prepares a visual presentation (e.g. PowerPoint, KeyNote, Prezi, video. etc.) that communicates their recommendation and the rationale that underpins it.

V. CLASS DISCUSSION (30 minutes)
The teacher leads a class discussion to debrief students after this learning activity. Some useful questions to use as a starting point are:
   1. Where do you see common ground between various community groups?
   2. Where do you see conflict between various community groups?
   3. What compromises might be acceptable to each community group? Are there compromises that would likely be perceived as intolerable to certain community groups?
   4. What challenges did your task force encounter in the process of coming to a compromise and making a decision together?

5. Is there other information you wished you had? Where might you find that information?
6. Did your personal beliefs impact the way you regarded the community group whose perspective you examined? Can you think of an example?
7. Did your personal perspective on the MN wolf hunt change over the course of this case study activity? If yes, how?
8. Where do you stand personally regarding the MN wolf hunt?
9. What was the most challenging aspect of this activity for you?

V. INDIVIDUAL LETTERS (homework)
For the last phase of this case study, students will write individual letters addressed to an authentic official individual or office related to wolf management in Minnesota. An address list is provided in the student handout. Students are asked to express their genuine, personal perspective about the MN wolf hunt, and to aim to provide a recommendation about whether to continue, modify, or discontinue the hunt. Students are asked to discuss trade-offs and to acknowledge one or more opposing viewpoints. Finally, students are reminded to cite evidence for their position. Each student will turn his or her letter into the course instructor, but will also be encouraged to mail it to the addressee.

Assessment Tasks and Rubrics
A. Community Perspectives Group Presentations: Highest Categories
-Community group is introduced, defined, and variation of perspectives within the community group is acknowledged.
-Pros, cons, and factors that impact the hunt from this community group's perspectives are salient and stem from authentic, credible sources of evidence.
-Presentation lasts 3 minutes
-Written text included on slides is congruent with professional standards.
-Content is accurate.
-List of authentic, credible sources that were used is provided.

B. Individual Population Paragraph:
Was it made clear that your focus was on the past, present, or future wolf populations?
1 (yes)   0 (no)
Were each of the concepts mentioned?
2 (all)   1 (most)   0 (not mentioned)
Were the concepts applied accurately?
3 (completely)   2 (a few errors)   1 (lots of errors)   0 (not applied)
Was sufficient, credible information on wolf populations incorporated in the paragraph?
3 (yes)   2 (somewhat)   1 (minimally)   0 (no)
Was the quality of writing adequate (good sentence structure, no spelling errors)?
1 (yes)   0 (no)

C. Task Force Presentations: Highest Categories

-An authentic recommendation that reflects the task force's discussion is provided
-Recommendation is grounded in a compelling rationale stemming from several lines of evidence that can be traced reliably to multiple primary sources.
-Benefits and drawbacks of the recommendation are presented clearly.
-Presentation lasts 5 minutes
-Writing is congruent with professional standards.
-List of authentic, credible sources that were used is provided.

D. Individual Letters: Highest Categories

Rubric [25 points]
-One or more cogent, compelling arguments is offered to support the position taken.
-Support for argument(s) includes credible scientific evidence
-One or more trade off is explained.
-Multiple lines of evidence are present.
-Counter-argument(s) are considered.
-Letter is persuasive and convincing.
-Writing is congruent with professional standards.
-List of authentic, credible sources that were used is provided

Each element will be graded on a 3-point scale
        3 = complete – good to excellent
        2 = complete – fair to good
        1 = incomplete – poor to fair
        0 = missing

Modifications:
- The socio-environmental connections and complexities could be better elucidated if there is time to have students create concept maps of Minnesota wolf populations - both before and after they learn about their community perspectives towards wolves, and as an organizing and illustrative tool to help the task forces contemplate multiple lines of evidence and weigh their potential recommendations.

Extensions:
- Include population genetics concepts to enable a discussion of minimum viable population size
  - Incorporate a side case study on the wolves of Isle Royale National Park. Should they be "rescued" by introducing new genetic variation (new individuals) into the population, or should they be allowed to die out?
- Cover developing research questions and conceptual models (aspects of SESYNC 2nd Learning Goal)

- ○ What else should we find out about wolves? What is the DNR doing already as they collect information on the wolves killed in the wolf hunt? What additional information might be useful to collect?
- Incorporate geospatial and visualization tools to understand the wolf population dynamics, cultural connections, population pressures, economic consequences, and social norms.
- Include the aspect of wolves being de-listed as endangered species. See the June 7, 2013 article in The Washington Post and associated comments.

References:
1. American Association for the Advancement of Science. (1989). Systems, Chapter 11, Project 2061: Science for all Americans. Washington, CD: Author. Retrievable from http://www.project2061.org/publications/sfaa/online/chap11.htm#1
2. Novak, J.D. & Cañas, A. J. (2008). The theory underlying concept maps and how to construct and use them. Institute for Human and Machine Cognition. http://cmap.ihmc.us/Publications/ResearchPapers/TheoryCmaps/TheoryUnderlyingConceptMaps.htm
3. Stark, D, and J. Erb. 2012 Minnesota Wolf Season Report, Minnesota Department of Natural Resources http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2013/wolfseasoninfo_2012.pdf
4. Wolf Management, Minnesota Department of Natural Resources http://www.dnr.state.mn.us/mammals/wolves/mgmt.html

Wolf Population Articles
- http://minnesota.publicradio.org/display/web/2012/10/19/environment/dnr-wolf-survey
- http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2008_survey.pdf
- http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2013/wolfsurvey_2013.pdf
- http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2013/wolfseasoninfo_2012.pdf
- http://files.dnr.state.mn.us/fish_wildlife/roundtable/2010/wildlife/wolf_deer_impacts.pdf
- http://lacrossetribune.com/news/local/experts-state-wolf-hunt-could-have-unintended-consequences/article_29b1e628-15b8-11e2-be16-001a4bcf887a.html

Farmer/Rancher Articles
- "Minn. ranchers laud wolf hunt, but say it won't help save livestock" by Dan Kraker, Minnesota Public Radio, October 24, 2012 http://minnesota.publicradio.org/display/web/2012/10/24/environment/minnesota-cattlemen-laud-wolf-hunt

- "Guide for Minnesota Farmers & Ranchers Living in Wolf Territory", Minnesota Department of Agriculture, http://www.mda.state.mn.us/grants/disaster/wolf.aspx
- "A Howling Success: Now that they are no longer listed as endangered, how will wolves fare in Minnesota? by John Myers, Minnesota Conservation Volunteer (May/June 2012), Minnesota Department of Natural Resources http://www.dnr.state.mn.us/volunteer/mayjun12/wolves.html
- "Protecting livestock from wolf packs with nonlethal (and colorful) means" by By Ron Meador 03/07/13, Earth Journal, MinnPost http://www.minnpost.com/earth-journal/2013/03/protecting-livestockwolf-packs-nonlethal-and-colorful-means
- "Frequently Asked Questions about Wolf Management" by L. David Mech, Biological Resources Division, U. S. Geological Survey (Updated 2007 by Jess Edberg) http://www.wolf.org/wolves/learn/wow/regions/United_States/Minnesota_Subpages/ERecoveryandManagement1.asp

Hunter/Trapper Articles
- "For Twin Cities hunter, wolf was a big surprise" by: Doug Smith, Star Tribune, November 6, 2012, http://www.startribune.com/printarticle/?id=177406351
- "Minnesota wolf hunt: How one man made his catch By Dave Orrick, St Paul Pioneer Press, 12/15/2012, http://www.twincities.com/ci_22194932/ultimate-catch
- "Wolf-killing by the numbers: Trappers outdo hunters — and stir public outrage", by Ron Meador, 12/18/12, MinnPost, http://www.minnpost.com/environment/2012/12/wolf-killing-numberstrappers-outdo-hunters-and-stir-public-outrage
- "A Wildlife manager's perspective of Minnesota's first gray wolf hunting season", by Tom Rusch, Minnesota North Outdoors (not currently online; pdf only)
- "Are Hunters Good Wildlife Stewards When It Comes To Wolves? Not According To This Study, by Kurt Repanshek, August 19, 2011, National Parks Traveler, http://www.nationalparkstraveler.com/2011/08/are-hunters-goodwildlife-stewards-when-it-comes-wolves-not-according-study8582
- "Gone hunting wolves" by Neil LaRubbio, 12/03/12, High Country News, http://www.hcn.org/blogs/goat/gone-hunting-wolves, "TV Host and His Choice of Game Diminish Pleasure of the Hunt" by James Gorman, 8/20/12, New York Times, http://www.nytimes.com/2012/08/21/science/lack-of-nuance-diminishestelevised-wolf-hunt.html?_r=0
- "23,000 People from 33 States Apply for Minnesota Wolf Hunting Permits; Unrestricted Hunting Starts Soon in Wyoming" by John R. Platt, Sept. 11, 2012, Scientific American, http://blogs.scientificamerican.com/extinction-countdown/2012/09/11/minnesota-wolf-hunting-permits-unrestricted-wyoming/
- "Frequently Asked Questions about Wolf Management" by L. David Mech, Biological Resources Division, U. S. Geological Survey (Updated 2007 by Jess Edberg) http://www.wolf.org/wolves/learn/wow/regions/United_States/Minnesota_Subpages/ERecoveryandManagement1.asp

Indigenous Groups Articles

- "Ojibwe bands ban wolf hunting – but only on Indian-controlled lands," by Dan Kraker, Minnesota Public Radio, October 31, 2012. http://minnesota.publicradio.org/display/web/2012/10/31/environment/ojibwe-ban-wolf-hunting
- "Minnesota Wolf Hunt Desecrates Ojibwe Creation Symbol" by Georgianne Nienaber, Huffington Post, November 14, 2012. http://www.huffingtonpost.com/georgianne-nienaber/minnesota-wolfhunting_b_2112944.html
- "Minnesota Wolf Policy Should Include Ojibwe Values" by Clint Carroll, Star Tribune, March 13, 2013. http://www.startribune.com/printarticle/?id=197677461
- "Traditional Ecological Knowledge: The Third Alternative (Commentary)" by Raymond Pierotti and Daniel Wildcat, in Ecological Applications, 10(5) (Oct., 2000), pp 1333-1340. http://www.jstor.org/stable/2641289
- "Wolf Legend and Lore" by Dax Damon, in the Lodge of Sungmanitu-Isna, http://1onewolf.com/lakota/Wolf/folklore.htm
- Wolf Fact Sheet, http://www.wolf.org/wolves/learn/wow/regions/United_States/Minnesota_Subpages/ERecoveryandManagement1.asp

You may also be interested in listening to this elder's words concerning the wolf hunt. Published on Jan 28, 2013

- Keweenaw Bay Indian Community (KBIC) elder Earl Ojiingwaanigan speaks about the Ojibwe beliefs concerning the wolf during the public comment period of the Jan. 14, 2013, Western Upper Peninsula Citizens Advisory Council (Dept. of Natural Resources) meeting in Houghton, Michigan. He explains that the Ojibwe (Anishinaabe) people consider the wolf a brother and a teacher and that the recent Michigan Senate Bill 1350 allowing a hunting season for the wolf is wrong. (Video by Allan Baker for Keweenaw Now)

  Part 1
  http://www.youtube.com/watch?v=a0jLFAQtc2Y
  Part 2
  http://www.youtube.com/watch?v=aWz-m8oGErM

- Protecting Our Brother the Wolf - Rally against MN Wolf hunting & trapping, by Soren Sorensen, published Feb. 7, 2013. http://www.youtube.com/watch?v=cxKwX99Yl2c

Wildlife Advocates Articles
- "Howling for Wolves Fact Sheet" by Howling for Wolves
  http://www.howlingforwolves.org/about-gray-wolf
- "MN Wolf Brief" by Howling for Wolves http://www.howlingforwolves.org/about-gray-wolf
- "Restoring the Grey Wolf" by the Center for Biological Diversity,
  http://www.biologicaldiversity.org/campaigns/gray_wolves/infographic.html
- "A wolf, along Hwy 61, revisited" by Cheryl K. Ostrom, Star Tribune, November 12, 2012 http://www.startribune.com/opinion/commentaries/179010211.html
- "In northern MN, a campaign against feeding wolves" by Dan Kraker, Minnesota Public Radio, August 22, 2013
  http://minnesota.publicradio.org/display/web/2013/08/22/environment/campaign-against-feeding-wolves
- "Wolf advocates post how-to manual for saboteur", Minnesota Public Radio, August 13, 2013
  http://minnesota.publicradio.org/display/web/2013/08/13/environment/wolf-sabotage-guide
- "Thinking Like a Mountain" by Aldo Leopold http://www.eco-action.org/dt/thinking.html
- "Setback for groups opposed to the Minnesota Wolf Hunt" by Doug Smith and Abby Simons, Star Tribune, May 28, 2013 http://www.startribune.com/local/209218781.html
- "MN Gray Wolves eBooklet" by Howling for Wolves
  http://www.howlingforwolves.org/about-gray-wolf

Additional Resources:
1. Watch live wolves on live webcam at the International Wolf Center in Ely:
   http://www.wolf.org/wolves/webcams/webcam.asp
2. International Wolf Center's YouTube channel:
   http://www.youtube.com/user/IntlWolfCenter
3. Watch DNR comment on wolf hunt http://youtu.be/jajCZbtUkV0
4. "Green Fire" is a documentary on Adolf Leopold which covers his epiphany following his shooting a wolf http://www.aldoleopold.org/greenfire/
5. Resources for DNR Perspective:
   http://www.dnr.state.mn.us/mammals/wolves/mgmt.html
6. Watch or read "Never Cry Wolf", along with this scholarly publication about the legitimacy of the book:
   a. "Never Cry Wolf: Science, Sentiment, and the Literary Rehabilitation of Canis Lupus" by Karen Jones, The Canadian Historical Review 84 (1), March 2003.

7. Visit a local zoo to see wolves (e.g. Red River Zoo in Fargo, ND)

8. Interview various people about their experiences. For example: Farmers, ranchers, hunters, trappers, DNR biologists, Enforcement officers
9. Interview an Ojibwe elder about the wolf in their culture and tribe's decision to ban the wolf hunt on reservation lands.
10. Watch this TED talk: George Monbiot: For more wonder, rewild the world http://www.ted.com/talks/george_monbiot_for_more_wonder_rewild_the_world.html?source=email#.Ui85LxuoZeN.email (posted September 2013)