

Fusing Science and Ethics: Tools for Natural Resource Educators

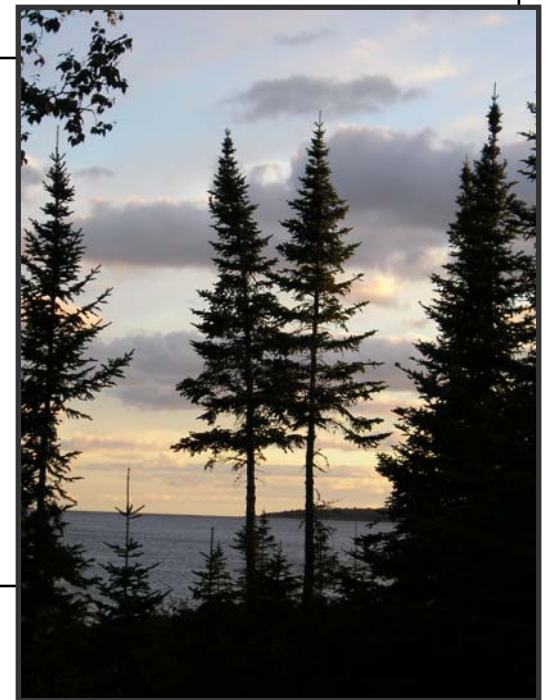
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Why ethics?

- Fundamentally ethics is critical thinking – specifically about “ought” questions
- Fundamentally NR management decisions are “ought” decisions – how ought we manage X, Y, or Z
- NR stakeholders increasingly desire this skill
- Given public access into the NR decision-making process, the ability to articulate and defend a given prescription for action (ethic) seems called for



Common misconceptions about the nature of ethics

- Ethical problems are intractable and not worthy of our attention
 - Civil rights, gender equality, Endangered Species Act
 - Scientific progress is similarly slow

- Ethics is primarily concerned with telling other people how they ought to behave



Ethics is primarily about...

- Understanding how I (or *we*, but not *they*) ought to behave
- Analysis of formal arguments about how we ought to behave

Ethics has far more to do with LOGIC than is commonly appreciated



Argument analysis

- “Wolves are dangerous animals that can kill almost any animal that they encounter, including humans. No one in their right mind should expect us to live with animals that will kill us.”
- Premise 1: Wolves are a danger to humans
- Premise 2: We should eliminate animals that are a danger to humans
- Conclusion: Therefore, we should eliminate wolves

Does the argument adequately represent the issue?

Are the premises valid?

Are the inferences sound?



Two models for incorporating environmental ethics into NR curricula

“Drive-by ethics” – invite an ethicist to give a guest lecture on environmental ethics in a NR class

1. Valuable for fulfilling accreditation requirement, but little more
2. Complete disconnect – often no more than ethical theory with no connection to real ethical problems in NRM

“Make ‘em take an ethics class”

1. Analogous to how and why calculus is a part of many curricula



Two models for incorporating environmental ethics into NR curricula

What's wrong with "Drive-by ethics" & "Make 'em take an ethics class"?

- The need is: develop critical thinking skills about ethical issues in NRM
- These two models deliver material on abstract ethical theory (rather than develop skills)
- Other problems:
 - Only NR professionals understand exactly what the ethical issues are
 - But most NR professionals are inadequately equipped to handle ethical dimensions of issues
 - Implies a need for genuine collaboration, not subcontracting
 - This circumstance is comparable to the relationship between NR professionals and experts in education research



A *third* model for incorporating environmental ethics into NR curricula

The integrated model

- To integrate ethics throughout NR curriculum certainly seems best, but...
- We don't know what it means and we don't know how to do it

The rest of this talk is an exploration of what it might look like and how we might achieve it

Three examples of what integration might look like...

Class	Characteristics
NR1050 Natural Resources Seminar	<ol style="list-style-type: none">1. Freshman level2. Taught to the widest audience of NR students
NR3010 Practice of Silviculture	<ol style="list-style-type: none">1. Obvious policy dimension2. Junior/senior level3. Specialized, technical course
NR4240 Mammalogy	<ol style="list-style-type: none">1. Basic science2. No obvious ethical component

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NR1050 Natural Resources Seminar

- Basic structure of the freshman course
 - 1 hr/wk
 - Most weeks include guest lecturer from NR profession
 - Students write reactions to each guest presentation



NR1050 Natural Resources Seminar

- The ethically-augmented assignment: students write 500-word reflections on...
 - Identify the most important conclusion with an ethical dimension (early-on the instructor can provide this)
 - List the three most important pieces of evidence that the speaker gave to support her ideas
 - What are the two most important unstated premises?
 - Of these 5 pieces of evidence, which are environmental facts, sociological, ethical/normative?
 - For the first few weeks: Why did the speaker make a good/bad argument?
 - For later weeks: How can the guest make a stronger argument for his/her case OR what argument would support the opposite conclusion?

Week	NR1050 Natural Resources Seminar
1	Present information on argument analysis
2	Guest lecture #1
3	Ethical theory & instructor analysis
4	Guest lecture #2
5	Students discuss amongst themselves
6	Guest lecture #3
7	Guest lecture #4
8	Ethical theory
9	Guest lecture #5
10	Ethical theory
11	Guest lecture #6
12	Guest lecture #7
13	Guest lecture #8
14	Synthesis - conclusion



Challenges to teaching this class

- Grading
- Collective commentary to the class
- Instructors who cannot analyze arguments
- Guests that have no normative message
- Students could work in pairs (at least in the beginning)
- Outline very precisely which skills/concepts need to be taught (e.g., arguments, obj/sub/normative, basic ethical theory, etc.)

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NR3010 Practice of Silviculture

- No need to overhaul the class, just revamp it
- Two modifications:
 - Augment the material to be presented
 - Modify the assignments

NR3010 Practice of Silviculture: augmenting the material

Standard topic	Associated ethics topic
Developing management objectives	What is ethics?
Establishing a benchmark	Are humans part of nature?
Managing for multiple objectives	Intrinsic value, use value, & existence value
Restoration ecology	Objective/subjective & rational/irrational
Managing for old-growth (characteristics)	Preservation and conservation
Genetic impacts of silvicultural treatments	Anthropocentrism and non-anthropocentrism

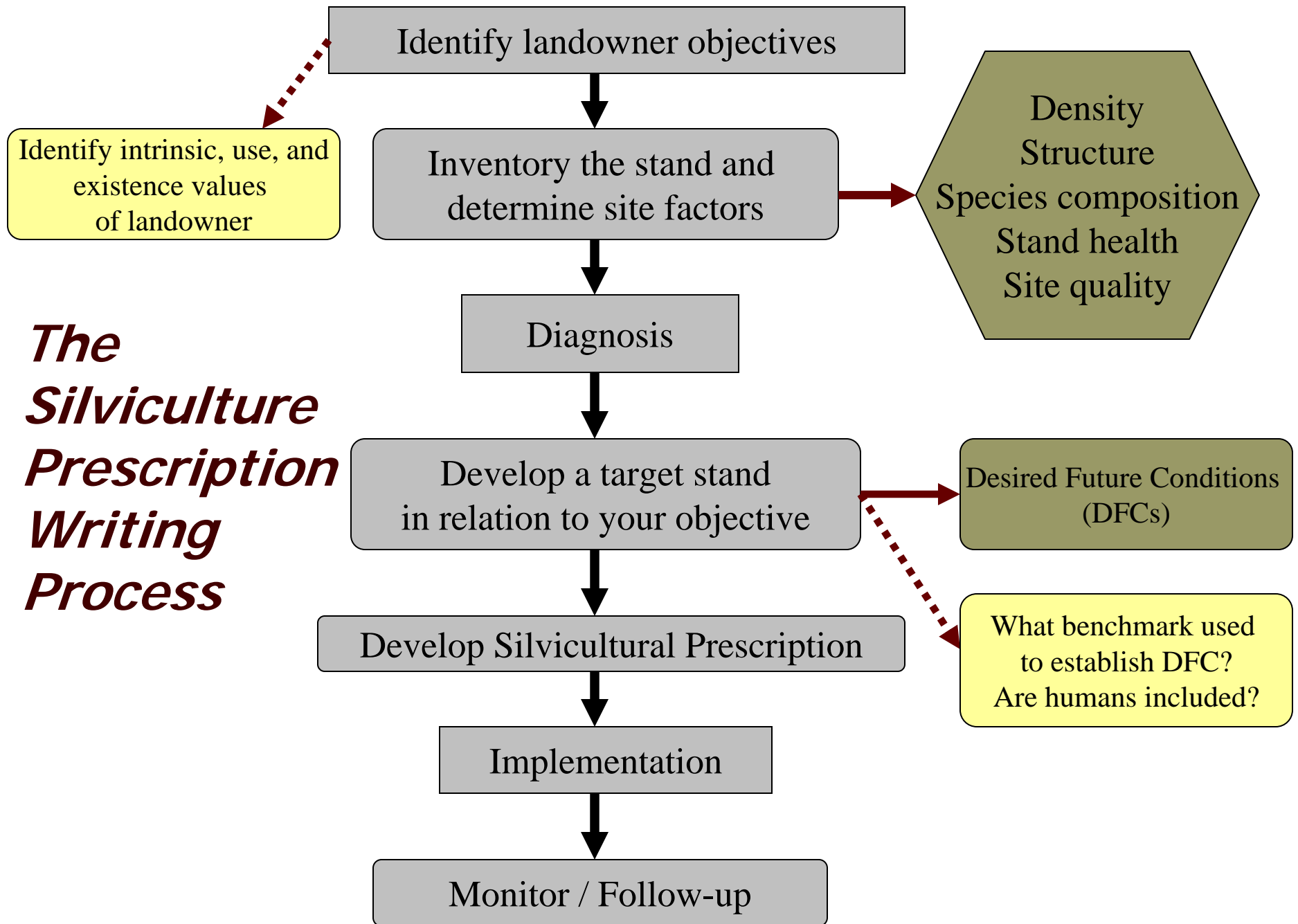
Spend about 30 minutes on each topic, that's about 6% of the class material



NR3010 Practice of Silviculture: modify the assignments

- Typical prescription writing assignments
 - Density management for even-aged pine
 - Regeneration in northern hardwoods
 - Open-ended prescriptions for 80-acre tract

***The
Silviculture
Prescription
Writing
Process***



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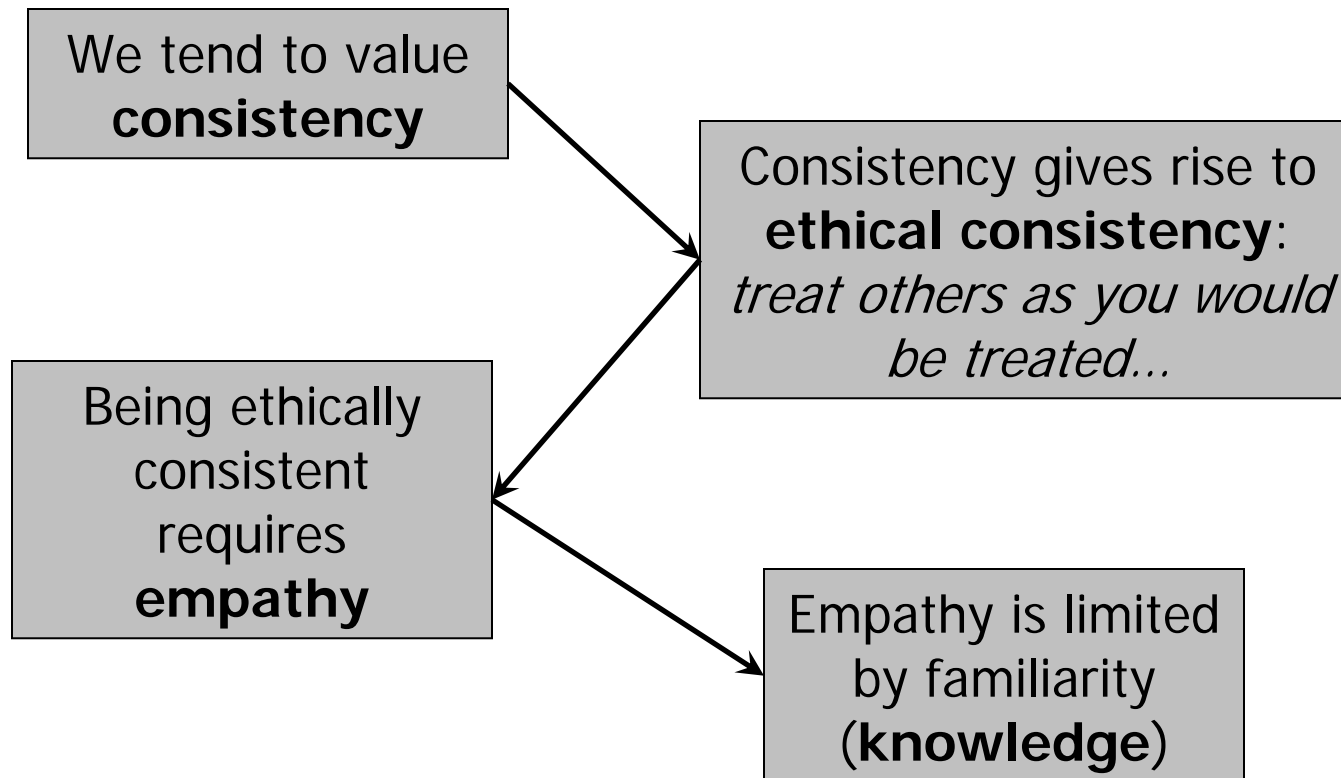
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Mammalogy

- One wouldn't think that ethics arises in a basic science class
- Here are two examples:
 - Why ought we study mammals from an ethical perspective?
 - To address this question, teach students about formal argument analysis
 - How ought we treat mammals?

Ethical reasons to study mammals



This diagram can be converted into a formal ethical argument that has been recognized by environmental ethicists



Ethical reasons to study mammals

1. Consistency is, in general, valuable
2. PEC is consistency applied to ethics
3. PEC, itself should be applied consistently, not arbitrarily
4. Empathy is necessary and often sufficient for application of PEC
Therefore: one ought to empathize with the things one is able to
5. Knowledge and similarity are necessary and often sufficient for empathy
Therefore: one ought to become familiar and observe similarity with things to the extent of one's ability
6. Because we can become knowledgeable and observe similarity with non-human things (including all mammals), we ought to do so
7. Therefore, there seems to be an ethical obligation to learn about mammals



How ought we to treat mammals?

- Mammal behavior/cognition is an appropriate topic for mammalogy. With very little restructuring of the course, this topic can be taught in a manner that highlights important ethical principles.

- Background:
 - Arguments are conclusions derived from premises and inferences
 - Ethical arguments have “ought” conclusions
 - Some premises are ethical in nature (e.g., it is wrong to kill for no good reason)
 - Some premises are scientific in nature



How ought we to treat mammals?

An ethical argument

- P1: Humans differ from non-human mammals insofar as humans alone have language, emotions, tool-use, rationality, culture, etc.
 - P2: Organisms without these traits deserve less moral consideration than humans (e.g., we can hunt them, perform experiments on them, study them in ways that cause suffering)
 - Conclusion: non-human mammals deserve less moral consideration than humans
1. P1 is a scientific claim (the subject of mammalogy)
 2. P2 is a normative claim
 3. Ethical arguments routinely have scientific premises
 4. In this way, science and ethics are deeply entwined
 5. These ideas are used to introduce 2 weeks of material on mammal cognition



How ought we to treat mammals?

An ethical argument

- P1: Humans differ from non-human mammals insofar as humans alone have language, emotions, tool-use, rationality, culture, etc.
 - P2: Organisms without these traits deserve less moral consideration than humans (e.g., we can hunt them, perform experiments on them, study them in ways that cause suffering)
 - Conclusion: non-human mammals deserve less moral consideration than humans
6. How does one handle the conclusion if P1 turns out to be wrong?
- A. One possible answer: the conclusion is wrong
 - B. Another possible answer: the conclusion is correct, but the advocate of that conclusion has a burden to find an adequate reason

These topics are beyond the scope of Mammalogy



Think of incorporating ethics as we did the development of writing intensive courses

- Potential conflict – takes away from technical material
- Proposed ideas will test our level of commitment to environmental ethics
- Challenges – mastering the material (EE)
 - Do it on your own
 - Collaborate with an ethicist
 - Other resources: *conservationethics.org*



Summary

- ❑ There is a demonstrated need/desire for incorporating ethics into NR curricula
- ❑ Teaching ethics is a form of critical thinking (argument analysis)
- ❑ Incorporation into the three suggested courses here simply adds another dimension to existing topics
- ❑ Integration is much more effective than “drive-by” ethics
- ❑ Students may well become better and more empowered professionals and citizens
- ❑ We may well become better teachers and thinkers