

FNR 4070C and 5072C: Environmental Education Program Development
University of Florida

Martha C. Monroe, Professor

E-mail: mcmmonroe@ufl.edu; Office Hours Tues AM – sign up on the door

Class Meets Wednesday, periods 7-9 (1:55 – 4:55); Room 222, NZ Hall

TA: Melissa Hill: melissahill@ufl.edu

Good environmental education (EE) programs are designed to meet environmental and educational goals for specific audiences. They use appropriate teaching strategies to engage learners and build capacity to resolve environmental issues. The development of a good program includes: a comprehensive needs assessment to understand the audience and available resources; a pretest of the materials prior to full-scale implementation; a training program for staff or volunteers; and an evaluation procedure to continue improving the program. This course will introduce students to these techniques of program development for adult and youth-based environmental education activities in the non-formal arena (such as nature centers, extension, residential facilities, environmental organizations, and resource agencies). Students will work together to develop and implement tools for a program evaluation.

Course Description:

A comprehensive approach to program development, from needs assessment to evaluation, will be applied to non-formal environmental education.

Course Objectives:

By the end of this course, all students will be able to:

- Describe the goals and objectives of environmental education (EE) and education for sustainable development (ESD)
- Explain how a variety of educational programs achieve EE goals
- Critique EE and ESD materials
- Use a Logic Model for program planning
- Develop objectives and a vision for an EE program
- Apply learning theory and teaching strategies to environmental education programs
- Develop and use evaluation tools
- Write a fundable grant proposal for EE program development

Students will also select one of the following and be able to:

- Develop and implement a lesson for youth
- Collect and analyze evaluation data for a client

Materials:

- Readings on reserve –<https://ares.uflib.ufl.edu/>– access through Canvas <http://lss.at.ufl.edu> – This course is FNR4070/5072.
- *Evaluating Your Environmental Education Programs* – Distributed in class
- *Guidelines for Excellence in EE: Materials (171B04003) and Nonformal Programs (171B04001)* – Order from USEPA <http://www.epa.gov/nscep/index.html>

Course Policies:

Students are expected to attend class, engage in discussion, submit assignments on time, and participate in group work. Absences will be excused if accompanied by appropriate paperwork. More than one unexcused absence will result in a reduction in the participation score. Assignments are to be turned in during class or on Canvas on the day they are due. A late assignment will be docked 2% per day from the final score for each day it is late.

Grading Scale:

A	93 – 100%	C	73 – 76%
A-	90 – 92%	C-	70 – 72%
B+	87 – 89%	D+	67 – 69%
B	83 – 86%	D	63 – 66%
B-	80 – 82%	D-	60 – 62%
C+	77 – 79%	E	below 59%

University of Florida Policies

Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Absences and Make-Up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”*

It is assumed that you will complete all work independently unless I have asked you to collaborate on course tasks (e.g. project). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:

<http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

Plagiarism

Plagiarism is using other’s words without appropriate citation in your writing. It is perfectly and importantly appropriate to reference other’s ideas, but you must do so with citations (to credit their ideas

in your words) or quotations (to use their words). In this class, an author-date citation is fine, with a Literature Cited section listed alphabetically with enough information to find the source: author, date, title of paper or book, title of journal or website, publisher, page or website. You can find more information about plagiarism here: <http://www.uflib.ufl.edu/msl/07b/studentplagiarism.html>. We will be using TurnItIn software to check for plagiarism. You can use their site to check your own work before you submit it.

Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/*
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Training Programs
 - Community Provider Database
- *Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/*

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Free Speech Rights and Responsibilities

Although students have free speech rights under the United States Constitution, in academic and other workplaces those rights are limited when they infringe upon another person's right to work in an environment free of harassment.

Course Objectives

By the end of the relevant class, students will be able to:

Describe the roots of environmental education in the U.S.

Explain how social and political influences continue to shape EE in the U.S.

Explain how people learn information, concepts, and skills.

Use the learning cycle to develop and critique educational activities and program plans.

Explain current movements in science education and the impacts they are/may have on EE (No Child Left Behind/No Child Left Inside, service learning, EIC, etc.)

Understand the role of state standards and testing in education reform.

Describe the strategies and guidelines for EE materials and program development that should lead to excellence in EE.

Explain the component of a logic model.

Develop a logic model that describes an EE program.

Use the learning cycle and research on education to develop logic models and programs.

Describe the steps of program development and the purpose of three types of evaluation.

Develop program and behavioral objectives.

Describe the advantages, disadvantages, and purposes of five evaluation tools.

Create items for evaluation tools for different types of evaluation.

Explain the qualities of a good survey or interview question.

Create a program that meets a need and the funding guidelines described in a proposal request.

Develop logic model, objectives, program description, evaluation plan, letters of support, budget for your program.

Explain how misconceptions, selective perception, and political agendas can affect environmental education.

Describe bias and explain why environmental and industry groups may be accused of it.

Develop strategies for detecting bias in materials and for creating materials that rise above it.

Describe education for sustainable development and compare it to EE.

Explain the criteria or objectives of programs that meets the goals of both and of either EE or ESD.

Justify the role of EE or ESD in schools, communities, parks, and agencies.

Enhance environmental education skills by working with a client to teach youth, develop a self-guided program, or conduct an evaluation

Wk	Class	Theme In Class	Prepare for class	Due
1	8/23	Intro, History, Future --EE and ESD	Order Guidelines, distribute book; Discuss field trips & projects	
2	8/30	Learning and Teaching	Read readings; Activities and lecture Confirm field trip	
3	9/6	Learning and Teaching Schools & Standards	Read readings Groups present	Group presentations
Sat	9/9	Field Trip to Guana Tolomato Matanzas Natl Estuarine Research Reserve		
4	9/13	NAAEE Guidelines	Read readings	G&U: Submit 1A EE program review
5	9/20	Logic Model Program Development	Read readings Think about how to answer your evaluation questions	U: Submit 1B EE program review
6	9/27	Eval Plans Reflect on field trips	Read readings	G&U: Submit 2A Logic Model
Fri	9/29	Field Trip To Little Orange Creek Preserve		
7	10/4	Eval Tools Data collection	Read readings	G&U: Submit 2B Eval Plan
8	10/11	Evaluation Tools	Read readings Bring draft tools to critique in class	
9	10/18	Online Midterm	No class	U: Submit 3 Observe tool G: Submit 3 Eval tools G& U: Complete 4 Midterm
10	10/25	Practice & Critique Teaching Advocacy & Backlash	Read readings	U: Teach your lesson G: Collect your data
11	11/1	Intro to writing proposals	Read about proposals	U: Work on your lessons G: Synthesize data
Fri	11/3	Teach at Little Orange Creek		
12	11/8	Writing Proposals	Read readings Budget details	Bring proposal paragraph for feedback
13	11/15	Data Analysis Pre-proposals	Read readings	Explain proposal to "review board"; Synthesize data; Discuss findings
Fri	11/17	Teach at Little Orange Creek		
14	11/23	Thanksgiving		
15	11/29	Issues, Skills, and Schools; EIC, EBE, CS, Competence	Read Readings Bring questions about EE; Project work	G&U: 5. Proposal
16	12/6	Report on teaching & evaluation; Issues and Future of EE	Course Evaluation; Reflection on projects	G&U: 7. Project Report

Assignments for Everyone

- 1. EE Observations and Review.** Everyone selects one live in-person program (1A) and undergrads also complete a second review of an EE program or material, such as web or print (1B). Describe programs, purposes, audiences, settings. Describe evidence of experiential learning and other educational techniques that suggest quality learning experience. List (or develop) objectives, and describe them in the context of EE Tbilisi objectives, science education, and ESD goals. Use Guidelines for Excellence to critique program materials or non-formal program or learning objectives. Two single spaced pages each. Due Sept 13 and 20. 5 pnts each
- 2. EE Program Logic Model (2A) and Evaluation Plan (2B).** After observing a program and talking to the staff, complete a logic model chart to describe this program. By determining and specifying the intended outcomes, and thinking about what stakeholders would want to know, you should be able to convert these goals to an evaluation plan. Due Sept 27, Oct 4. 5 pts each.
- 3. Evaluation Tools.** Undergraduates will design an observation guide or survey that will be used when they conduct or submit their program (see projects below). Graduate students will design a survey, interview guide, and observation guide and will use at least two tools in the evaluation of a program. These tools will help determine the value and worth of your program and/or provide program implementers or instructors useful feedback for improvement. Consider which group of people can provide you with useful information and specify the audience on your draft. Share your draft tools with two other students in the class on Oct 11, and provide enough information about the program (perhaps your observation and logic model) so students can provide useful feedback. Revise your tools and submit them by Oct 18. 10 points
- 4. Midterm Quiz and Take Home Essay.** This two-part assessment will enable you to review and make sense of the material covered in the first half of the course. The take home essays will allow you to spend a bit more time thinking about their application, and will be due October 21. You are welcome to use any written resources from class or the library, but please work alone.
UG 20 points; G 15 points
- 5. EE Proposal.** Writing project proposals is essential to obtain funding to support EE programs. Develop an idea for a project that meets the RFP criteria and write a proposal following EPA's former Small Grants for EE Request for Proposals. This exercise will incorporate much of what we have discussed about program development, logic models, objectives, evaluation, training, learning, etc. You can dream up the organization or use a real one. You will write the budget, letters of support, and justification for the program. If your ideal program is better addressed with a different funder or RFP, you can propose one to the teaching team. Submit a 1 paragraph to a page summary of your plans (single spaced) and draft logic model on November 8. Explain your idea to the class for feedback on Nov 15. Submit your final proposal on Nov 29. 25 points
- 6. Class participation** – Timely and thoughtful contributions in class will earn you points toward participation. We will endeavor to make these in-class discussions integral to your assignments so that everything will flow quite smoothly! In addition to in-class discussions, graduate students will engage in online discussions of graduate readings, depending on enrollment.
UG 10; G 10

Projects for Undergraduates (pick one)

7a. Teach Youth. You can use this class to improve your teaching skills! Observe a program at the Little Orange Creek Preserve September 29, define a portion of that program that you can teach, and use class time to get feedback on your ideas for engaging youth in an experiential and interesting lesson. Practice your lesson in class (October 25), and then teach real children at Little Orange Creek November 3 or 17. Use your observation guides and observe someone else. Reflect on the experience and feedback in a project paper due December 6. Site visits will be Friday mornings; van will leave at 8:00 and return at 1:30. 15 points

7b. Develop a self-guided program for home-school youth at GTMNERR. On our field trip to GTM September 9 we'll be introduced to the Migrating Marshes program. You will convert that guided program into a self-guided, interactive experience that home-school groups can conduct with a tablet as their guide on a visit to GTM. You will submit slides in powerpoint, video, and text to create this program and a flow map to explain the possible ways the program can be followed. See resources on Canvas. Due December 6. 15 points

Project for Graduates

7c. Evaluate EE Program. You will use the logic model, evaluation plan, and evaluation tool to form the basis of a needs assessment, formative evaluation, or summative evaluation of a program of your choice. You may work in a small group or on your own. In addition to assignments 2 and 3 above, you will also submit:

Evaluation Report. Using all the pieces you have developed, write a report of your evaluation for the program staff. Begin with a description of the program and your logic model, then describe the goals of your evaluation and plan. Report on who provided information and how the information was obtained (methods and tools). Summarize the results of your data collection and synthesize these data into findings. (If you want to discuss your data and findings prior to submitting your report, please submit your draft by November 22.) Finally, use your insights about the program to develop three recommendations that are supported by your data, and recommendations about how they might evaluate future programs. Due December 6. 20 Points

Presentation. Develop a brief powerpoint to describe your program and recommendations to the rest of your classmates. Please also describe what you learned about program evaluation, including what you might do differently the next time! Due Dec 6 5 Points

Project Suggestion: GTMNERR offers pre-service teacher training and would like to evaluate these efforts. Pre-service educators are taking courses at Flagler College. This activity could involve interviewing current students and former students (3-4 years later) and developing one or more evaluation tools to assess the value and worth of the pre-service program at GTM.

Assigned Readings (* denotes graduate student readings which Undergrads are welcomed, but not obligated to read)

Week 1 Introducing EE: History and Goals

- Monroe, M. 2001. Just Say Yes to Youth Environmental Stewardship. EDIS Fact Sheet. University of Florida. <http://edis.ifas.ufl.edu/FR120>
- Biedenweg K., Monroe, M.C. and Wojcik, D.J. 2016. Chapter 1, Foundations of Environmental Education, pp 9-28, in Monroe, M.C. and M. E. Krasny (eds), *Across the Spectrum: Resources for Environmental Educators*. Washington DC: NAAEE.
<http://naaee.net/publications/acrossthespectrum>
- *Monroe, M.C. 2012. The co-evolution of ESD and EE. *Journal of Education for Sustainable Development*. 6(1): 43-47.
- *Gough, A. 2002. Mutualism: a different agenda for environmental and science education. *International Journal of Science Education*. 24(11): 1210-1215.

Week 2 Learning and Teaching

- Jacobson, S., M. McDuff, and M. C. Monroe. 2015. Chapter 2 Learning and Teaching with Adults and Youth. *Conservation Education and Outreach Techniques*. Oxford University Press. pp 35-62.
- Monroe, M.C., E. Andrews, K. Biedenweg. 2007. A Framework for Environmental Education Strategies. *Applied Environmental Education and Communication*. 6(3): 205-216
- *Wals, A.E.J. and J. Dillon. 2013. Conventional and Emerging Learning Theories, pp 253-261.. In Stevenson, R. B., M. Brody, J. Dillon and A.E.J. Wals (eds) *International Handbook on Environmental Education Research*. NY: Routledge.

Week 3 Learning and Teaching

- Edwards, H. S. 2015. Leaving tests behind. *TIME Magazine*, 185(5): 28-31. February 16, 2015.
- Tilbury, D. 2011. What are commonly accepted learning processes aligned with ESD? Education for Sustainable Development: An expert review of processes and learning. Paris: UNESCO. Pages 19-39. <http://www.iucn.org/?uNewsID=7368>
- *Uzzell, D. 1999. Education for environmental action in the community: New roles and relationships. *Cambridge Journal of Education* 29, no. 3: 397-413.
- *Hungerford, Harold R., R. Ben Peyton, Richard J. Wilke. 1980. Goals for Curriculum Development in Environmental Education, *Journal of Environmental Education*. 11:3, 42-47.

Week 4 NAAEE Guidelines for Excellence

- NAAEE, Guidelines for Excellence: EE Materials and NonFormal Programs. Order or download your own from the National Service Center for Environmental Publications (NSCEP) at <http://www.epa.gov/nscep/>
- 171B04001 - Nonformal Environmental Education Programs: Guidelines For Excellence
- 171B04003 - Environmental Education Materials Guidelines For Excellence
- Simmons, B., Y. Bhagwanji, and R. Ribe. 2016. Chapter 5, Promoting excellence in environmental education, pp. 85-112. In Monroe, M.C. and M. E. Krasny (eds), *Across the Spectrum: Resources for Environmental Educators*. Washington DC: NAAEE.
<http://naaee.net/publications/acrossthespectrum>

Week 5 Logic Model and Program Development

Ernst, J. A., M. C. Monroe, and B. Simmons. 2012. Evaluating Your Environmental Education Program: A Workbook for Practitioners. North American Association for Environmental Education. Chapters 1 and 2, and Appendix A.

*On Logic Models: W.K. Kellogg Foundation 2004. Logic Model Development Guide. Battle Creek MI: Kellogg Foundation. Item #1209 when ordered from 1-800-819-9997. Or download from www.wkkf.org, search for logic model, and click on the pdf symbol

*Website from Univ of Wisconsin, Program Development and Evaluation program on Logic Model <http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html> -- and <http://www.uwex.edu/ces/lmcourse>

Week 6 Evaluation Plans

Disinger, John.1993. Environment in the K-12 Curriculum: An Overview. In Wilke, R.J. (ed) *Environmental Education: Teacher Resource Handbook*. Arlington VA: NSTA and Kraus International Publications.

*Monroe, Washburn, Goodale, Wright. 1997. Making a Difference: Evaluation of PARTNERS – a Parks as Classrooms Program.

*National Research Council, 2009. *Learning Science in Informal Environments*. Chapter 3, Assessment. Washington DC: National Academies of Press. Pages 54-89. Download free pdf - <https://www.nap.edu/catalog/12190/learning-science-in-informal-environments-people-places-and-pursuits>

Week 7 Program Evaluation – Tool Development

Ernst, J. A., M. C. Monroe, and B. Simmons. 2012. Evaluating Your Environmental Education Program: A Workbook for Practitioners. North American Association for Environmental Education. Chapter 3.

*Jensen, B.B. and K. Schnack. 1997. The action competence approach in environmental education. *Environmental Education Research*, 3(2): 163-178.

*Chawla, L. and D. Cushing. 2007. Education for strategic environmental behavior. *Environmental Education Research* 13(4): 437-452

Week 8 Program Evaluation – Tool Development

Ernst, J. A., M. C. Monroe, and B. Simmons. 2012. Evaluating Your Environmental Education Program: A Workbook for Practitioners. North American Association for Environmental Education. Chapters 4-5.

*Monroe, M. and C. J. Li. 2016. Chapter 6, Evaluation Techniques that Improve Programs, pp 113-126, in Monroe, M.C. and M. E. Krasny (eds), *Across the Spectrum: Resources for Environmental Educators*. Washington DC: NAAEE. <http://naaee.net/publications/acrossthespectrum>

*Zint, M. 2013. Advancing Environmental Education Program Evaluation, pp 298-309. In Stevenson, R. B., M. Brody, J. Dillon and A.E.J. Wals (eds) *International Handbook on Environmental Education Research*. NY: Routledge.

Week 9 Online Midterm

Week 10 Backlash and Advocacy

Poore, Patricia. 1993. EnviroEducation: Is it Science, Civics--or Propaganda? *Garbage*. April-May 1993, 26-31.

Duvall, J. and M. Zint. 2007. A review of research on the effectiveness of environmental education in promoting intergenerational learning. *Journal of Environmental Education* 38(4): 14-24.

*Mappin, M. J. and E. A. Johnson. 2005. Changing perspectives of ecology and education in environmental education, pp 1-27 in Johnson, E. and M. Mappin (eds) *Environmental Education and Advocacy*. Cambridge UK: Cambridge University Press.

Week 11-12 Writing Project Proposals

Archie, Michele. 1993. *Grant funding for your environmental education programs: Strategies and Options*. Troy, OH: NAAEE. Focus on pages 13-22.

Israel, G. 2001. Using Logic Models for Program Development. IFAS Fact Sheet. University of Florida. AEC 360. <http://edis.ifas.ufl.edu/wc041>

USEPA Office of Environmental Education Solicitation Notice for 2008. Environmental Education Grants. EPA-EE-08-02

Review Guidelines for Excellence!

Week 13 Reporting Evaluation Findings

Ernst, J. A., M. C. Monroe, and B. Simmons. 2012. Evaluating Your Environmental Education Program: A Workbook for Practitioners. North American Association for Environmental Education. Chapter 6.

*Heimlich, J.E. 2010. Environmental education evaluation: Reinterpreting education as a strategy for meeting mission. *Evaluation and Program Planning*, 33: 180-185.

Week 15 Issues, Skills, and Schools: EIC, EBE, ESD, CS, etc.

Hart, R. A. 2008. Stepping back from 'The Ladder': Reflections on a model of participatory work with children, pp 19-31. In Reid, A., B. B. Jensen, J. Nikel, and V. Simovska (eds.) *Participation and Learning*. Springer.

Schusler, T. M. 2016. Chapter 8, Environmental action and positive youth development, pp 141-163. In Monroe, M. C. and M. E. Krasny (eds.) *Across the spectrum*. Washington DC: NAAEE.

*Ernst, J. A. and M. C. Monroe. 2004. The effects of environment-based education on students' critical thinking skills and disposition toward critical thinking. *Environmental Education Research* 10:4, 507-522.

*Jordan, R. C., H. L. Ballard, T. B Phillips. 2012. Key issues and new approaches for evaluating citizen-science learning outcomes. *Frontiers in ecology*, 10(6): 307-309.

Week 16 Future of EE

Jickling, B. 1992. Why I don't want my children to be educated for sustainable development, *Journal of Environmental Education*, 23(4): 5-8.

*Ardoin, N.M., C. Clark, E. Kelsey. 2013. An exploration of future trends in environmental education research. *Environmental Education Research* 19(4): 499-520.

Undergraduate and Graduate Students Learning Together

This course is designed to help students who wish to become environmental educators. You will develop and practice the skills that educators need to develop and evaluate effective programs. If you have some practical experience in environmental education, you will bring that perspective to the class discussions and build on it with the assignments. If you have taken other classes in EE, you needn't read the same

things over again, but can use this opportunity to build on what you know and learn something new. Both undergraduates and graduate students can bring paid and volunteer experiences from the EE world and from other courses. Both undergraduates and graduate students may be new to EE. Since age and degree may be irrelevant and experiences are more important, we hope all students will consider this as an opportunity to work together to learn more.

Please use this course to help you learn what will be most useful as you embark on your career. Mold the assignments to fit your interests. I will expect more critical, more thoughtful, and better referenced work from graduate students than undergraduates, in general. If you would like to emphasize one portion of the course to the exclusion of another, let's negotiate.

For More Information

Ardoin, N. et al. 2013. EE Research Bulletin Issue 4: Winter 2013. The series is online:

<http://eelinked.naaee.net/n/eereseach/posts/Research-Bulletins-Help-Bridge-Research-to-Practice-Gap>

Bennett, Dean B. 1988-89. Four steps to evaluating environmental education learning experiences. *Journal of Environmental Education*. 20:2,14-21.

Bitgood, Stephen. 1993. What do we know about school field trips? *What research says about learning in science museums, # 2*. Wash. DC: Assoc Science-Tech Cntrs, 12-16.

Blanchard, Kathleen A. Seabird conservation on the North Shore of the Gulf of St. Lawrence, Canada: The effects of education on attitudes and behaviour towards a marine resource. In Palmer, J. W. Goldstein, and A. Curnow (eds.) *Planning education to care for the earth*. Gland, Switzerland: IUCN CEC. 39-50.

McDuff, Mallory. 2002. Needs Assessment for Participatory Evaluation of Environmental Education Programs. *AEEC*. 1(1): 25-36.

Munson, Bruce H. 1994. Ecological Misconceptions. *Journal of Environmental Education*. 25(4) 30-34.

Nature and Children:

Weilbacher, M. 2009-2010. Last child in the woods, first book in the field. *Green Teacher*. 87:3-8.

Gill, T. (2014). "The Benefits of Children's Engagement with Nature: A Systematic Literature Review." *Children, Youth and Environments* 24(2): 10-34.

<http://www.jstor.org/action/showPublication?journalCode=chilyoutenvi>.

Place-based Education

Sobel, D. 2012. Place-based education: Connecting classroom and community. <http://www.antiochne.edu/wp-content/uploads/2012/08/pbexcerpt.pdf>

Social Learning

Wals, A.E.J., N. van der Hoeven, H. Blanken. 2009. *The acoustics of social learning*. Wageningen: Wageningen Academic Publishers. Pages 5-28. <http://www.ecs.wur.nl/NR/rdonlyres/E635711D-7B4D-43B6-8FE2-249B95D2349E/92733/acousticsdigital.pdf>

Schusler, T. M., D. J. Decker, & M. J. Pfeffer. 2003. Social learning for collaborative natural resource management. *Society and natural resources*. 16:4, 309-326.

Muro, M. and P. Jeffrey. 2008. A critical review of the theory and application of social learning in participatory natural resource management processes. *Journal of environmental planning and management*. 51(3): 325-344.

Environmental Justice

Agyeman, J. 2005. Where justice and sustainability meet. *Environment*, 47(6): 10-23.

Citizen Science

Dickinson, J. L., J. Shirk, D. Bonter, R. Bonney, R. L. Crain, J. Martin, T. Phillips, K. Purcell. 2012. The current state of citizen science as a tool for ecological research and public engagement. *Frontiers in Ecology and the Environment*, 10 (6): 291-297.