

NCLC 311: THE MYSTERIES OF MIGRATION: CONSEQUENCES FOR CONSERVATION POLICIES

New Century College, George Mason University
Aquia Module 101
Wed. 1:30 – 2:20 pm & Fri. 1:30 - 4:10 pm
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Dr. Elizabeth M. Gunn (egunn@gmu.edu)/JC239G
Dr. Thomas C. Wood (twood@gmu.edu)/JC214
phones: 993-1501 (Gunn) 993-3167 (Wood)
Office Hours: by appointment

DESCRIPTION AND OBJECTIVES:

This learning community will investigate the exciting and, in some cases, mysterious phenomenon of migration—from butterflies to polar bears. In the past, scientists thought birds flew to the moon or buried themselves in the mud until spring. Although we no longer believe these theories, mystery still surrounds some aspects of migration. Every year, monarch butterflies arrive at their ancestral wintering grounds in Mexico even though none have ever been there before. And hammerhead sharks converge, for example, in the Galapagos in large groups for unknown reasons.

Our focus will be on the basic biological and physical factors that influence migration—such as energy metabolism, behavioral adaptations, population genetics, terrain, weather patterns, and magnetism—and the implications of migration for the development of conservation and resource management policies both within the United States and with other nations. Our primary goal is two-fold: (1) to provide students with a solid understanding of basic biological principles by studying their application to one of the most pervasive and interesting phenomena in nature, and (2) to learn about and evaluate the domestic and international policy systems and tools for addressing problems and issues raised by the movement of plants and animals. A secondary goal is to enhance the students awareness of the historical and cultural importance of migration through introducing a variety of readings, including fiction, nonfiction, and poetry. Examples of questions to be investigated include: Why do organisms migrate? How do they know “where to go”? What factors affect the timing of migration? What problems does migration pose for resource management and conservation efforts, domestically and internationally? Are the institutions and mechanisms we currently depend on to protect migrating species effective?

Upon completion of the course, each member of the learning community should be able to:

1. Describe the biological parameters associated with migration, including behavioral and physiological components, and discuss their significance when developing conservation policy.
2. Provide several examples of important migratory issues and assess the effectiveness of our public policy system in addressing scientific uncertainties and value conflicts associated with each issue.
3. Discuss the roles of the major governmental and nongovernmental actors and institutions responsible for handling migratory issues in local, state, national and international arenas.
4. List the major policy tools available for dealing with migration issues, evaluate their strengths and weaknesses and provide examples of their use.
5. Demonstrate the capacity to synthesize and integrate key facts and ideas from the learning community through the quality of journal entries, analytical and reflective work on case studies, quizzes/exams, completion of the assessment portfolio, and active participation in field activities.

Instructors: We are both members of the NCC faculty and co-teach the NCC course on the Natural History of the Chesapeake Bay. Dr. Thomas C. Wood also teaches in the first-year learning community on The Natural World, and frequently teaches field biology at Andros Island, Bahamas. He is a conservation biologist who has studied reproductive physiology at the Smithsonian. Dr. Elizabeth M. Gunn also teaches in the first-year learning community on Self as Citizen. Before joining NCC, she was a senior policy analyst for the White House Office of Science and Technology Policy and for the U.S. Congress’ Office of Technology Assessment, and on the faculty at the University of Oklahoma.

COURSE STRUCTURE:

A learning community is comprised of a group of scholars (in this case, students and faculty), who come together to inquire, to investigate, and to construct knowledge about a topic of interest. We intend for this learning community to be characterized by openness and respect; collaboration; experiences linking the classroom to places, events and people outside the university setting; and group and individual learning. To meet these goals, students must be active, informed participants. All of us must read and thoroughly consider the reading assignments for each week *before* coming to class and take responsibility for making connections and sharing ideas.

Examples of activities: The following types of activities will provide opportunities for students to achieve both course and personal learning objectives:

- leading and participating in seminar discussions;
- observing migration in the field (several weekend camping trips are scheduled);
- keeping journals;
- reading and critiquing scholarly books, journal articles, and other materials on migration, including perspectives from science, public policy, literature, and the arts;
- using the library, Internet and other tools to elaborate and clarify classroom discussions, track migration reports, conduct research on international treaties, and gather data for projects;
- preparing research materials and graphics for group and individual projects; and
- taking quizzes over course materials and activities.

NCC COMPETENCIES AND PORTFOLIOS:

This learning community provides at least one or more opportunities to improve in each of the following NCC competencies: *critical thinking, problem-solving, effective citizenship, social interaction, communication, global perspective, valuing, and aesthetic response*. Your course journals should reflect your own assessment of the progress you have made in each of these areas. You may also want to address other competencies in your portfolio. We will discuss portfolios briefly at the beginning of the course and provide a portfolio workshop toward the end of the course to assist you in developing your course portfolio. In the meantime, if you have any questions about the portfolio, please ask us.

REQUIRED READINGS:

1. Dingle, Hugh. 1996. *Migration: The Biology of Life on the Move*. New York: Oxford University Press.
2. Buck, Susan J. 1996. *Understanding Environmental Law and Administration*. 2d ed. Washington, DC: Island Press.
3. Additional readings handed out in class or made available in the Center for Field Studies office (JC213). These readings are listed in the syllabus during the week they are to be discussed. Please feel free to make an individual reading copy of these required articles.
4. Birding guide: your choice of Roger Tory Peterson (*Eastern Birds*), Chandler & Robbins (*North American Birds*), or National Audubon Society (*Eastern Birds*).
5. Internet Materials (see attached list of Websites for a start).
6. Current newspapers (e.g., *Washington Post*, *New York Times*, *Wall Street Journal*) and scholarly journals related to science and/or public policy (e.g., *Science*, *Nature*, *Conservation Biology*, *Issues in Science and Technology*, *Journal of Public Policy Analysis and Management*, *Policy Studies Review*, *The Auk*, *Journal of International Law*, *Natural Resources Journal*).

COURSE REQUIREMENTS:

- 1. Course journal:** Each student must keep a journal throughout the course. We will have a workshop on journal writing and provide separate handouts describing in detail what and how to write in your journal.
- 2. Participation:** Students must be active participants in all aspects of the seminar, including field trip activities and group assignments in order for this to be a collaborative course. Participation will be assessed over the entire semester and can take many forms, e.g., leading a seminar discussion, asking questions, listening carefully to another student, being responsible to group members for projects and quizzes, helping with field trips, etc. Your peers will assess a portion of your participation grade.
- 3. Group case study project:** This capstone assignment for the course is to be a well-researched, professionally presented group case study of a public policy issue involving migration. This project will have several components—a preliminary research plan with annotated bibliography, a draft, and the revised/final project. See separate handout describing the requirements and grading for this assignment.
- 4. Individual research paper:** Each student will complete an individual research paper on a topic related to his or her group project. This paper will be completed in three stages—a proposal, a preliminary draft, and a revised final paper. See separate handout describing the requirements and grading for this assignment. We will conduct a workshop to help you prepare the final paper.
- 5. Email accounts:** You must have an active email account that you can check frequently for messages from us or from other students in the class. We will set up a listserv or group email to facilitate exchange of information, including questions and further discussion about issues raised in class and by readings, to post notices of good information sites, or to provide information about optional field trips or upcoming community events and activities.
- 6. In-class quizzes:** Throughout the semester, students will complete individual and group quizzes to check progress on mastering the major concepts and facts presented and on applying them to address important migration topics. These will usually be short answer questions, but may also include brief essay questions over any aspect of the course, from scholarly readings and lectures to learning in the field. You will be allowed to drop one quiz grade. However, if you miss a quiz, it will automatically constitute your “dropped” grade and no points will be recorded for additional missing quizzes.
- 7. Final exam:** Students will be given comprehensive questions about the course to prepare as a final, take-home exam. Students are encouraged to discuss the questions with their peers and with faculty, but must formulate and write answers to the questions individually.
- 8. Course portfolio:** Each student will prepare a course portfolio, documenting his or her progress toward specific seminar learning goals and toward NCC competencies. The portfolio is your primary vehicle for analyzing and reflecting on the course, demonstrating the connections you make through this course, and setting future goals for yourself.
- 9. Peer evaluation:** Students must complete an evaluation for each group member. Any student who does not complete the peer evaluation will forfeit his or her own peer evaluation points. Students will have an opportunity to help us design the peer evaluation form.
- 10. Course evaluation:** In order to help the instructors improve the quality of this learning community for the future, students must complete the NCC course evaluation (in addition to the GMU faculty/course evaluation). These evaluations will be handed to the NCC Office Manager who will ensure that they are not available to the instructors until after grades have been assigned. Any student who does not complete the NCC course evaluation will earn an Incomplete grade for the course.