Kyoto Consortium for Japanese Studies, Spring 2020

Tentative Syllabus: Environmental and Conservation Issues in Japan

Lecture Room: F212

Lecture Time: Tu/Thu 2:55 pm -4:25 pm

Instructor:

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私は両生類の生態学、行動学、保全学を研究している生物学者です。そうです、この大きな動物は世界で最大の両生類、オオサンショウウオです。*I am a biologist who studies ecology, ethology, and conservation biology of amphibians. Yes, this large animal is the world largest amphibian, Japanese giant salamander (Andrias japonicus).*

この写真は2015年8月23日に広島県の安佐動物公園で働く共同研究者を訪れた時に撮ったものです。なんと、こんな魅力的な動物が京都市内にもいるのです！*This photo was taken at Asa Zoological Park in Hiroshima on August 23, 2015 when I visited my friend/collaborator who works at the zoo. Believe or not, this charismatic animal exists in the city of Kyoto too!*

Textbook:

No textbook required. We will read a series of articles throughout the semester

Course Description:

The world human population has been rapidly increasing, which has made us face a rising number of environmental issues. These issues not only have degraded the quality of human life but also have driven extinction of a number of wildlife populations. As a result, scientists argue that humans are causing the 6th mass extinction event. Japan is one of the most populated countries in the world; yet, it had such a long history of coexisting with nature until the recent rapid economy growth, during which the country started experiencing serious environmental problems. Thus, Japan serves an excellent model to learn and analyze the global environmental issues and to think about the ways to mitigate these problems in order to live sustainably, in harmony with nature. This seminar style course also emphasizes how cultural and religious values may affect interactions between humans and natural systems. While student presentation and discussion will be an important part of the course, I will give lectures providing enough background information for student activities. In addition, several field trips are scheduled throughout the semester to learn assigned material from real life examples.

Course Objectives: The course aims to provide an opportunity for students to

- Learn the units and values of biodiversity
- Understand global conservation and environmental issues through Japanese examples
- Develop an understanding of how culture and religion may influence people's way to interact with nature
- Read, critique, and interpret scientific papers addressing conservation and environmental issues
- Foster their ability to present in both written and oral format.

Course Structure:

The course consists of 13 weeks. In each week, I will use ~ 50% of class time presenting related materials while assigned students will lead discussions during the rest of the class time, unless other activities are planned. Class discussions will be based on reading assignments covering the topics of the week.

Professionalism:

You are expected to attend every class and to participate in discussions, which will be evaluated as "Class Participation". Please be prepared for class discussions by carefully reading materials

before attending classes. Contact me when at all possible BEFORE planned absences or ASAP after illnesses. Please turn off your electronic devices (no phones, no tablets, and no laptops) during a class unless instructed otherwise. Participation points will be taken off for each violation of the rule.

Plagiarism:

It is academically dishonest to steal ideas, paragraphs, or sentences from existent sources and use them in your works. I, as an educator and as a scholar, take plagiarism seriously and will report any possible cases of plagiarism to the AKP program director. If you have any questions about plagiarism, please contact me before you submit papers.

Late Submission Policy:

You will suffer 5% point reduction per day for your late submission unless you have a legitimate reason.

Explore Japanese Nature（自然探索）:

Every class unless a field trip is planned, I will ask each of you to present a small discovery about surrounding Japanese nature. It can be about an animal or a plant that you find in this area, or about a news article about local nature. I would like you to do a little research into the subject that you are presenting and spend a few minutes to talk about it. I encourage you to take photos and send them to me before the class so that I can show them to the class while you are presenting.

Short Papers（小論文）:

Students are expected to write 2 short papers (2-3 **single-spaced**, Times New Roman font 12, one-inch margins) throughout the semester. Each short paper focuses on one of the themes that you learn from previous weeks and consists of four parts: 1) a summary of the lecture on the theme, 2) additional related information that you find outside of the classroom, 3) your thoughts and discussion on the theme, and 4) a list of literatures (minimum 2).

Environmental Issue Presentation（環境問題発表）:

We are living in an era of fake news. It is important for us to be able to assess whether stories are true or false. The goal of this assignment is to assess how accurately and effectively scientific findings are publicized. Students will choose a contemporary environmental/conservation issue in Japan that are published within the last 5 years in a national or regional newspaper (Both American and Japanese newspapers are acceptable). Once a newspaper article is found, students will research into the scholarly background of the environmental issue by exploring primary literatures, which are often referred to in the newspaper article. All topics and sources must be approved by the instructor by XX. A 3-4 page paper (**single-spaced**, Times New Roman font 12, one-inch margins) will be developed that summarizes the topic, explains the environmental issue and evaluates accuracy and effectiveness of the newspaper article by comparing the newspaper article with the scholarly articles. Each student will also give 10-minute oral presentation followed by a 5-min Q/A session.

Grading:

Class Participation and leadership of assigned discussion	20 %
Explore Japanese Nature	20 %
2 short papers	30 %
Environmental Issue Paper and Oral Presentation	30 %
Total	100%

A = 100 – 92%, A- = 92 – 90%, B+ = 90 – 88%, B = 88 – 82%, B- = 82 – 80%, C+ = 80 – 78%, C = 78 – 72%, C- = 72 – 70%, D = 70 – 60%

*Grades may be curved depending on the class performance.

COURSE SCHEDULE

- *Student activities are italicized with underlines for important dates.*
- *Field trips are highlighted with gray*
- *Listed reading assignments are for students to better understand lectures within the assigned weeks. Additional papers will be provided for class discussions.*

Part I: Introduction & Principles of Conservation Biology

Week 1: Course Introduction

- Values of biodiversity and global loss of biodiversity
- Field Trip 1: Kyoto Aquarium
- Reading:
  - Barnosky et al. 2011. Has the Earth's sixth mass extinction already arrived? Nature, 471: 51-57.

Week 2: Extinction and problems of small populations

- Population genetics
- Field Trip 2: Kyoto City Zoo
- Reading:
  - Hoffmann et al. 2010. The impact of conservation on the status of the world's vertebrates. Science, 330: 1503-1509.

Part II: Japanese View of Nature

Week 3: Traditional view of nature

- *Student-led Discussion 1*
- Reading:
  - Watanabe, M. 1974. The conception of nature in Japanese culture. Science, 183: 279-282
  - (My neighbor Totoro)

Week 4: Modern view of nature

- Overview of current environmental issues in Japan
- *Student-led Discussion 2*
- Field Trip 3: Kodai Ji （高台寺）
- Reading:
  - Kellert, S. R. 1991. Japanese perceptions of wildlife. Conservation Biology, 5(3), 297-308.
  - Kellert, S. R. 1993. Attitudes, knowledge, and behavior toward wildlife among the industrial superpowers: United States, Japan, and Germany. Journal of social issues, 49(1), 53-69.
  - Knight C. 2010. Natural Environments, Wildlife, and Conservation in Japan. The Asia-Pacific Journal, 4-2-10

Part III: Selected Environmental Issues

Week 5: Conflicts between humans and wildlife I

- Sika deer and wild boar
- *Short Paper 1*
- *Student-led Discussion 3*
- Reading:
  - Takatsuki, S. 2009. Effects of sika deer on vegetation in Japan: a review. Biological Conservation, 142(9), 1922-1929.
  - van Doormaal, N., Ohashi, H., Koike, S., & Kaji, K. 2015. Influence of human activities on the activity patterns of Japanese sika deer (*Cervus nippon*) and wild boar (*Sus scrofa*) in Central Japan. European journal of wildlife research, 61, 517-527.

Week 6: Conflicts between humans and wildlife II

- Black bear and Japanese macaque

- *Student-led Discussion 4*
- Reading:
    - Honda, T. 2009. Environmental factors affecting the distribution of the wild boar, sika deer, Asiatic black bear and Japanese macaque in central Japan, with implications for human-wildlife conflict. Mammal Study, 34, 107-116.
    - Hill, C. M., & Webber, A. D. 2010. Perceptions of nonhuman primates in human–wildlife conflict scenarios. American journal of primatology, 72, 919-924.
    - Sakurai, R., & Jacobson, S. K. 2011. Public perceptions of bears and management interventions in Japan. Human–Wildlife Interactions, 5, 14.

Week 7: Climate Change I

- Overview
- Kyoto Protocol
- Field Trip 4: Miyako Ecology Center
- *Student-led Discussion 5*
- *Environmental Issue Approval*
- Reading:
    - Dawson, T. P., Jackson, S. T., House, J. I., Prentice, I. C., & Mace, G. M. 2011. Beyond predictions: biodiversity conservation in a changing climate. Science, 332: 53-58.
    - O'Neill, B. C., & Oppenheimer, M. 2002. Climate change: dangerous climate impacts and the Kyoto Protocol. Science, 296: 1971-1972.

Week 8: Climate Change II

- Japan's Energy Use
- Fukushima Nuclear Disaster
- *Student-led Discussion 6*
- Reading:
    - Wilhite, H., Nakagami, H., Masuda, T., Yamaga, Y., & Haneda, H. 1996. A cross-cultural analysis of household energy use behaviour in Japan and Norway. Energy Policy, 24: 795-803.
    - Hong, S., Bradshaw, C. J., & Brook, B. W. 2013. Evaluating options for the future energy mix of Japan after the Fukushima nuclear crisis. Energy Policy, 56, 418-424.
    - Oe, K. 2011. History Repeats. The New Yorker.

Week 9: Water Pollution I

- Historical Issues
    - Minamata Disease
- *Student-led Discussion 7*
- Reading:
    - Harada, M. 1995. Minamata disease: methylmercury poisoning in Japan caused by environmental pollution. CRC Critical Reviews in Toxicology, 25: 1-24.

Week 10: Water Pollution II

- Current Issues
    - Environmental endocrine disruptors
- *Short Paper 2*
- *Student-led Discussion 8*
- Field Trip 5: TBD
- Reading
    - Hashimoto, S., Bessho, H., Hara, A., Nakamura, M., Iguchi, T., & Fujita, K. 2000. Elevated serum vitellogenin levels and gonadal abnormalities in wild

male flounder (Pleuronectes yokohamae) from Tokyo Bay, Japan. Marine environmental research, 49, 37-53.
    - Kashiwada, S., Ishikawa, H., Miyamoto, N., Ohnishi, Y., & Magara, Y. 2002. Fish test for endocrine-disruption and estimation of water quality of Japanese rivers. Water research, 36(8), 2161-2166.
    - Jeng, H. A. 2014. Exposure to endocrine disrupting chemicals and male reproductive health. Frontiers in public health, 2, 55.

Part IV: Conservation

Week 11: Conservation at a National and a Regional Level I

- National and Prefectural Park System
- World Natural Heritage
- A role of temples and shrines
- Field Trip 6: Shimogamo Shrine
- *Student-led Discussion 9*
- Reading
    - National Parks of Japan. Ministry of the Environment. https://www.env.go.jp/en/nature/nps/park/
    - Japanese National Parks System. National Parks Foundation. http://www.bes.or.jp/english/parks/system.html
    - Ishii, H. T., Manabe, T., Ito, K., Fujita, N., Imanishi, A., Hashimoto, D., & Iwasaki, A. 2010. Integrating ecological and cultural values toward conservation and utilization of shrine/temple forests as urban green space in Japanese cities. Landscape and Ecological Engineering, 6: 307-315

Week 12: Conservation at a National and a Regional Level II

- Satoyama conservation
- Field Trip 7: Iwakura
- *Student-led Discussion 10*
- Reading:
    - Kobori, H., & Primack, R. B. 2003. Participatory conservation approaches for satoyama, the traditional forest and agricultural landscape of Japan. AMBIO: A Journal of the Human Environment, 32: 307-311.

Week 13

- *Environmental Issue Presentations*
- *Environmental Issue Papers due*