

## AREC/ECON 346 Economics of Outdoor Recreation, Fall 2018

Class meets in C144, Clark Building

M-W-F 10:00am – 10:50am

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**Course Objectives:** Students will learn about benefit cost analysis, economic valuation of recreation and economic impacts of recreation. These concepts will be applied to recreation management issues (such as congestion, fees/pricing, evaluating investments in campgrounds and facilities, etc.) and to evaluation of natural resource allocations involving recreation resources (forests, water, etc.)

**Optional Textbook:** Loomis, John B; Walsh, Richard G. 1997. *Recreation Economic Decisions: Comparing Benefits and Costs*. 2nd ed. State College, PA: Venture Publishing. 440 p.

A limited number of copies are available at the CSU Bookstore, including some bound copies of the scanned book. I have found some used copies available online and I encourage you to find this textbook for the least cost. I have also placed a copy on reserve at the library which can be checked out for 2 hours at a time.

**Required Reading** assignments are noted in the course outline below. PDFs are provided on the course *Canvas* page.

### Grading:

**Exams:** there will be three exams each worth 25% of your grade. The exams will cover both lecture and readings. The final exam will be comprehensive and will be held on **Tuesday December 11, 2018, 11:50am-1:50 pm**, in our regular classroom.

**Homework:** There will be several (TBD) short problem sets (worth a total of 25% of your grade, points for each will vary). I may occasionally offer optional extra credit assignments.

**Class Participation:** I will present basic concepts in “interactive lectures” where you will be expected to join in discussions of the material. Your required reading consists of several academic research papers. I don’t expect you to understand all of the technical details, but I do expect you to read them and be prepared to discuss the hypotheses, conclusions and methods.

We will use *iClickers* for in class polls and quizzes which will cover both the assigned reading and lecture materials. These will be included as part of the homework grade.

If you don’t have one make sure you get one by August 27. Register your iClicker in Canvas (see [Student iClicker Registration](#)) **Do not go to the iCLICKER website**. You are responsible for bringing your remote for daily use in class.

The points earned on each test and homework assignment are recorded, rather than a letter grade. I will convert the sum of all points to a final grade. I will follow the usual breakdown for a final letter grade (90% or greater = A, 80-89% = B, 70-79% = C, 60-69% = D, less than 60% = F).

I will round the final grades up to the nearest whole percentage using standard math. For example, if your final percentage is 79.5% your grade will round to 80%. If your final percentage is 79.4%, your grade will not be rounded (your grade won’t be lowered).

This is FIRM. I will consider grade adjustments for assignments and exams throughout the semester, if you can present sufficient justification, but you must make these requests immediately following the exam or homework assignment. I will not change the final grade.

### Classroom Policies:

This course will adhere to the CSU Academic Integrity Policy as found on the Student' Responsibilities page of the [CSU General Catalog](#) and in the [Student Conduct Code](#).

At a minimum, violations will result in a grading penalty in this course and a report to the Office of Student Resolution Center.

- Please turn off your cell phones and put them away.
- Be respectful of each other, your TA, and me.
- While I realize it may seem old fashioned, I would prefer that you do not try to take notes using a laptop. I would also rather you didn't record classes.

It is less distracting for everyone, and research has shown that people retain what they learn better if notes are written by hand (Mueller and Oppenheimer, 2014). This study also confirmed findings that taking verbatim notes is less effective for learning than taking notes in your own words.

If you really must use a laptop to take notes, do not connect to the internet while in class.

If you are a student who will need accommodations in this class due to a disability or chronic health condition, please make an appointment with me to discuss your individual needs. Any accommodation must be discussed in a timely manner prior to implementation. A verifying accommodation letter from Resources for Disabled Students is required before any accommodation is provided. Student Disability Center <https://disabilitycenter.colostate.edu/> located in TILT, room 121 or via phone 970-491-6385.

### Principles of Community

The Principles of Community support the Colorado State University mission and vision of access, research, teaching, service and engagement. A collaborative, and vibrant community is a foundation for learning, critical inquiry, and discovery. Therefore, each member of the CSU community has a responsibility to uphold these principles when engaging with one another and acting on behalf of the University

- **Inclusion:** We create and nurture inclusive environments and welcome, value and affirm all members of our community, including their various identities, skills, ideas, talents, and contributions.
- **Integrity:** We are accountable for our actions and will act ethically and honestly in all our interactions.
- **Respect:** We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.
- **Service:** We are responsible, individually and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.
- **Social Justice:** We have the right to be treated and the responsibility to treat others with fairness and equity, the duty to challenge prejudice, and to uphold the laws, policies and procedures that promote justice in all respects.

**Need Help?** CSU is a community that cares for you. If you are struggling with drugs or alcohol and/or experiencing depression, anxiety, overwhelming stress or thoughts of hurting yourself or others please know there is help available. Counseling Services has trained professionals who can help. Contact 970.491.6053 or go to <https://health.colostate.edu/>. If you are concerned about a friend or peer, tell someone at by calling 970.491.1350 to discuss your concerns with a professional who can discreetly connect the distressed individual with the proper resources (<http://supportandsafety.colostate.edu/tellsomeone>).

Rams take care of Rams. Reach out and ask for help if you or someone you know is having a difficult time.

### Sexual Assault and Violence Elimination

CSU's Student Sexual Harassment and Violence policy, following national guidance from the Office of Civil Rights, requires that professors follow CSU policy as a "mandatory reporter" of any personal disclosure of sexual harassment, abuse, and/or violence related experiences or incidents shared with the professor in person, via email, and/or in classroom papers or homework exercises. These disclosures include but are not limited to reports of personal relational abuse, relational/domestic violence, and stalking. While professors are often able to help students locate appropriate channels of assistance on campus (e.g., see the CSU Health Network link below), disclosure by the student to the professor requires that the professor inform appropriate CSU channels to help ensure that the student's safety and welfare is being addressed, even if the student requests that the disclosure not be shared.

For counseling support and assistance, please see The CSU HEALTH NETWORK, which includes a variety of counseling services that can be accessed at: <https://health.colostate.edu/>. And, The Sexual Assault Victim Assistance Team is a confidential resource for students that does not have a reporting requirement and that can be of great help to students who have experienced sexual assault. The web address is <https://wgac.colostate.edu/need-help-support>.

Successful graduates from undergraduate programs in Agricultural and Resource Economics will exhibit the following characteristics:

**Professional Development:** Graduates will embody a general awareness of issues in agricultural and natural resource management and their implications in a larger societal context. Students will begin to develop a network of personal and professional connections which will foster an understanding of the culture surrounding professional expectations and conduct.

- Students in AREC/ECON 346 will gain an understanding of the issues in outdoor recreation resource management which can be used in their professional careers.

**Technical Competence:** Graduates will demonstrate technical competency including the ability to appropriately use economic theory in formulating analytical problems, identifying and gathering appropriate data, and employing appropriate economic methods to analyze those problems, utilizing appropriate available computer technology.

- Students in AREC/ECON 346 will practice using economic theory and methods to analyze problems in outdoor recreation resource management. Students will be expected to use the appropriate and available computer technology.

**Problem-solving Skills:** Graduates will demonstrate the ability to solve real-world problems beyond the context of the classroom. Students will be able to identify a problem and its scope, evaluate resources available to address the problem, formulate alternative solutions, and select the solution(s) most consistent with a stated objective.

- Students in AREC/ECON 346 will have several in-class opportunities to practice problem-solving skills. In addition homework assignments will provide additional practice.

**Communication Skills:** Graduates will demonstrate proficiency in oral and written communication in terms of substance, organization, mechanics, documentation, and synthesis. Proficient students will have the ability to clearly communicate findings, critically and analytically, at a professional level within their chosen career.

- Students in AREC/ECON 346 will be required to provide written responses to exam and homework questions. Students will also be required to participate in class discussions.

**Leadership:** Graduates will have developed leadership qualities that they will use in their professional, personal and community interactions leveraging the other competencies acquired in the program. These leadership qualities include vision, initiative, personal responsibility, team building, and motivating collective action.

## Course Outline

### 1. Welcome, syllabus review, course overview

**Reading:** Haab, Timothy, 2018. What's the value of a clean beach? Here's how economists do the numbers. The Conversation, July 24, 2018. <http://theconversation.com/whats-the-value-of-a-clean-beach-heres-how-economists-do-the-numbers-94805>

Optional: Mueller, P.A. and Oppenheimer, D.M. 2014. The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. *Psychological Science* 25(6): 1159-1168.

### 2. Introduction to recreation economics

**Reading:** Economics review

Loomis, J. 2016. The role of economic benefit measures in recreation planning and management. *Journal of Park and Recreation Administration* 34(4): 106-108.

Optional: Chapter 1

Bishop, R.C., Boyle, K.J., Carson, R.T., Chapman, D., Hanemann, W.M., Kanninen, B.K., Kopp, R.J., Kroskick, J.A., List, J., Meade, N., Paterson, R., Presser, S., Smith, V.K., Tourangeau, R., Welsh, M., Wooldridge, J.M., DeBell, M., Donovan, C., Konopka, M., and Scherer, N. 2017. Putting a value on injuries to natural assets: The BP oil spill. *Science* 356(6335): 253-254.

### 3. Overview of recreation resource policy issues

- a. Management issues: optimum use levels, crowding, funding, pricing, conflicts between visitor groups, evaluating investments in recreation facilities

**Reading:** Whittaker, D., B. Shelby, R. Manning, D. Cole, G. Haas. 2011. Capacity reconsidered: Finding consensus and clarifying differences. *Journal of Park and Recreation Administration* 29(1): 1-20.

Miller, A.D., Vaske, J.J., Squires, J.R., Olson, L.E., and Roberts, E.K. 2017. Does zoning winter recreationists reduce recreation conflict? *Environmental Management* 59: 50-67.

- b. Allocation of natural resources between competing uses: resource extraction versus recreation, impacts of external threats to recreation areas/resources

**Reading:** Carter, D. W., J. J. Agar, and J. R. Waters. 2008. Economic Framework for Fishery Allocation Decisions with an Application to Gulf of Mexico Red Grouper. NOAA Technical Memorandum NMFS-SEFSC-576.

New York Times, October 12 2017, "In Northern Minnesota Two Economies Square Off"

Burakowski, E. and M. Magnusson. 2012. Climate Impacts on the Winter Tourism Economy in the United States. Washington DC: Natural Resources Defense Council. 33 p.

### 4. Funding for outdoor recreation (budgets, fees, taxes)

**Reading:** GOCO Annual Report 2017

Vincent, C. H. 2014. Land and Water Conservation Fund: Overview, Funding History, and Issues. Congressional Research Service 7-5700 RL33531. 14 p.

Loris, N. D. 2015. Land and Water Conservation Fund: Wrong Solution for Public Land Management. Heritage Foundation Issue Brief No. 4482.

Land and Water Conservation Fund Coalition. 2017. General Fact Sheet.

### 5. Recreation production and consumption: agencies & private landowner roles, visitor roles, outputs, measuring use

**Reading:** Loomis, J.B. 2000. Counting on recreation use data: A call for long-term monitoring. *Journal of Leisure Research* 32(1): 93-96.

ECONorthwest. 2015. Outdoor Recreation Scarcity and Abundance in Western Oregon: A Spatial Analysis.

Optional: Chapters 2 and 3

### 6. Tools for economic analysis of recreation and tourism

- a. Introduction: multiple objectives versus single objective accounting stance, financial vs economic analysis, national economic efficiency, regional development

- b. Regional economic analysis: visitor expenditure, multipliers, input-output models, recreation related income and employment

**Reading:** Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2014, pages 60-64

American Planning Association. 2002. How Cities Use Parks for Economic Development, Executive Summary.

Grado, S. C., D. L. Grebner, R. O. Drier, and I. A. Munn. An Economic Feasibility Study for Recreational Development on the Bienville National Forest in Mississippi.

- White, Eric M.; Bowker, J.M.; Askew, Ashley E.; Langner, Linda L.; Arnold, J. Ross; English, Donald B.K. 2016. Federal outdoor recreation trends: effects on economic opportunities. Gen. Tech. Rep. PNW-GTR-945. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Station. 46 p.
- Poudel, J., J. E. Henderson, and I. A. Munn. 2016. Economic contribution of hunting expenditure to the southern United States of America. *International Journal of Environmental Studies* 73(2): 236-254.
- Optional: Chapters 4 and 14
- c. Benefit-cost analysis – Part 1: definition, theory of economic valuation, willingness to pay, use in evaluating recreation projects
- Reading:** *Optional: Chapter 19, pages 369-378*
- d. Recreation demand
- i. Demand curves and demand functions
- Reading:** Optional Chapters 5 and 6
- ii. Determinants of demand
- Reading:** Weiler, S. 2006. A park by any other name: National Park designation as a natural experiment in signaling. *Journal of Urban Economics* 60: 96-106.
- Whiting, J., Lincoln, R. L., Green, G. T., and Kralowec, C. 2017. Outdoor recreation motivation and site preferences across diverse racial/ethnic groups: A case study of Georgia state parks. *Journal of Outdoor Recreation and Tourism*, 18: 10-21.
- Optional: Chapter 7
- e. Empirical measurement of economic values
- Reading:** Mathews, L. G., Kask, S., L. Rotegard, and S. Stewart. 2001. Using economics to inform national park management decisions: a case study on the Blue Ridge Parkway. In: *Crossing Boundaries in Park Management: Proceedings of the 11th Conference on Research and Resource Management in Parks and on Public Lands*. D. Harmon (ed.), Hancock MI: The George Wright Society.
- f. Valuation methods
- i. Hedonic Property Method (HPM)
- Reading:** Loomis, J. and Feldman, M. 2003. Estimating the benefits of maintaining adequate lake levels to homeowners using the hedonic property method. *Water Resources Research* 39(9), 1259, doi:10.1029/2002WR001799
- ii. Travel Cost Method (TCM)
- Reading:** Melstrom, R. T. 2014. Valuing historic battlefields: an application of the travel cost method to three American Civil War battlefields. *Journal of Cultural Economics* 38: 223-236.
- Optional: Chapter 9
- iii. Contingent Valuation Method (CVM)
- Reading:** Haefele, M., J. B. Loomis, and L. Bilmes. 2016. Total economic value of US National Park Service estimated to be \$92 billion: Implications for policy. *George Wright Forum* 33(3): 335-345. (Haefele et al 2016 NPS total economic value)
- Optional: Chapter 10
- iv. Other valuation methods
- Reading:** Hessel, H., J. B. Loomis, and A. González-Cabán. 2004. The effects of fire on recreation demand in Montana. *Western Journal of Applied Forestry* 19(1): 47-53.
- Optional: Chapter 11
- g. Forecasting future recreation use over time: predictors and techniques
- Reading:** Optional: Chapter 13.
- h. Benefit-cost analysis – Part 2: discounting benefits and costs over time, steps in performing a comprehensive benefit-cost analysis
- Reading:** Whitehead, J. 2005. Discount rates for benefit-cost analysis. *Environmental Economics Blog*. [http://www.env-econ.net/2005/08/discount\\_rates.html](http://www.env-econ.net/2005/08/discount_rates.html)
- Optional: Chapter 19, pages 379-389; Chapter 20, pages 391-399

7. Application of tools to recreation resource issues

a. Recreation Management Issues

i. Optimum use levels: congestion, crowding and use rationing

**Reading:** Pettebone, D., Newman, P. Lawson, S.R., Hunt, L., Monz, C., and Zweifka, J. 2011. Estimating visitors' travel mode choices along the Bear Lake Road in Rocky Mountain National Park. *Journal of Transportation Geography* 19: 1210-1221.

Sessions, C., Wood, S.A., Rabotyagov, S., and Fisher, D.M. 2016. Measured recreational visitation at U.S. National Parks with crowd-sourced photographs. *Journal of Environmental Management* 183: 703-711.

Optional: Chapter 7, pages 104-109.

ii. Pricing for revenue and as a management tool

**Reading:** Lamborn, C.C., Smith, J.W., and Burr, S.W. 2017. User fees displace low-income outdoor recreationists *Landscape and Urban Planning* 167: 165-176.

National Park Service, April 12, 2018 – Fee increases <https://www.nps.gov/orgs/1207/04-12-2018-entrance-fees.htm>

Optional: Chapters 17 and 18.

b. Economic impacts

**Reading:** Bowker, J. M., J. C. Bergstrom, J. Gill. 2007. Estimating the economic value and impacts of recreational trails: a case study of the Virginia Creeper Rail Trail. *Tourism Economics* 13(2): 241-260.

Koontz, L. and B. Meldrum. 2014. Effects of the October 2013 Government Shutdown on National Park Service Visitor Spending in Gateway Communities. Natural Resource Report NPS/EDQ/NRSS/NRR-2014/761. 10 p.

c. Allocation of natural resources

i. External threats to recreation resources – climate change

**Reading:** Wobus, C., Small, E.E., Hosterman, H., Mills, D., Stein, J., Rissing, M., Jones, R., Duckworth, M., Hall, R., Kolian, M., Creason, J., and Martinich, J. 2017. Projected climate change impacts on skiing and snowmobiling: A case study of the United States. *Global Environmental Change* 45: 1-14.

Gilaberte-Búrdalo, M., López-Martín, F., Pino-Otín, M.R., López-Moreno, J.I. 2014. Impacts of climate change on ski industry. *Environmental Science and Policy* 44: 51-61.

ii. Competing uses – recreation vs extractive uses

**Reading:** Ruiz-Frau, A., Kaiser, M.J., Edwards-Jones, G., Klein, C.J., Segan, D., Possingham, H.P. 2015. Balancing extractive and non-extractive uses in marine conservation plans. *Marine Policy* 52: 11-18.

Kovacs, K., Haight, R.G., West, G. 2017. Protected area designation, natural amenities and rural development in forested counties in the continental United States. *Growth and Change* 48(4): 611-639.

**Final Exam: Tuesday December 11 11:50am – 1:50pm**