

Economic and Environmental Studies

A Non-Market Economic Valuation of Richmond Hill, Disc Golf Course

Description of Research

Disc golf is one of the fastest growing sports in the world; each year more than 100 new courses are established, and thousands of new players take up the game (Innova Disc Golf). There are more than 3000 formal disc golf courses in the United States, and there are also courses in more than 20 countries around the rest of the world (DGA, PDGA). Large urban cities and small towns alike are installing courses because of increased public demand and the positive aspects of this kind of outdoor recreation versus some other types. For example, disc golf courses require minimal maintenance because there is no need for using pesticides, mowing or tree clearing; additionally, most courses are free for players, thus there are no player fees to deal with (Innova Disc Golf; Trendafilova). Despite the pros associated with disc golf, environmentalists voice concerns with the sport's negative impacts on the environment.

Disc golf is known to cause environmental degradation such as: greatly increased erosion, soil compaction, significant trampling of undergrowth and loss of vegetative cover, as well as persistent damage to trees, such as the stripping of bark/leaves/branches and indentations/nicks made by the discs, which can result in tree death (Clark; Trendafilova & Waller). While it has become clear to environmentalists that this sport has undesirable consequences for the environment, this has not been a point well-made to the players of the sport. A study of disc golf at three different courses in the southern United States found that players were not only unaware of the damage they were causing, but that they were willing to change their behavior to mitigate some of these problems (Trendafilova, 2011). Aside from behavior modification, there are mitigation practices that can be used to offset some of these negative anthropogenic effects.

Western North Carolina is home to dozens of major disc golf courses certified by the Professional Disc Golf Association (PDGA), with the most popular one being located in Asheville, Richmond Hill Disc Golf Course (WNC Disc Golf Association). Currently Richmond Hill's course has not yet taken measures to abate the adverse environmental impacts of the sport. However, before the city should spend money to mitigate these damages, it would be prudent to find out whether or not the benefits are greater than the costs of doing so and whether players would be willing-to-pay to help fund the abatement costs. An economic valuation to determine how players value disc golf courses has never been done. Since disc golf is harmful to the environment, and thus presents a cost to society, we need to see how the people benefiting from these courses value them. This information is useful because an economic valuation of a disc golf course could tell us whether or not it is worth it to allow the continuance, or establishment, of this sport in the area of question. Furthermore, a study to get at the WTP of players to mitigate the ecological damages they cause would be useful for a community considering taking the steps to abate this harm. The WTP aspect is of special importance

because cities have budget constraints, and there is a question of fairness to why all tax payers should have to pay for damages caused by a few. The proposed study will provide useful information for the city of Asheville, UNC Asheville, private property owners (*e.g.* Camps), and other communities for when making decisions surrounding proposed and existing disc golf courses.

Objectives

Using Richmond Hill as a study site, I will conduct a survey using non-market valuation techniques that will allow me to approximate: (1) the economic value of Richmond Hill Disc Golf Course and (2) users' willingness-to-pay (WTP) to preserve the course as it is today.

Methods

I will conduct my research at Richmond Hill's public disc golf course in Asheville, North Carolina. I chose Richmond Hill as my study site because it is one of the largest (*eighteen holes and a length of 6,093 ft.*), most popular courses in the area. Additionally, Richmond Hill is conveniently located from UNCA, my home, and my work; thus, using this location will help to minimize costs of data collection, and will able me to have easy access to the site, making it easier to get ample surveys.

I will begin the surveying process as soon as I have IRB approval and permission from the city, which is expected no later than June 2013. The survey will use economic methods such as contingent valuation and/or contingent behavior analysis. Data will be entered as it is gathered. Once all the data is collected, it will be analyzed using standard contingent valuation and/or contingent behavior analysis to determine user WTP to mitigate damages and whether or not their usage behavior will change in response to a fee and/or recommendations about how to play the course without creating significant environmental damage.

Results of this study will include an estimated economic value of Richmond Hill's Disc Golf Course to Asheville's community and the approximated WTP of park users to better maintain the course for future generations of people and the environment.

Timeline

WHEN...	WHAT...
End of April	Draft survey; Request permission from city
May	Submit to IRB
Early June	After receiving IRB approval and permission from city to survey, start surveying

June – August	Survey on various days of the week at varying times throughout the summer and at a disc golf tournament held at Richmond Hill in August; Compile data for analysis throughout surveying process
Mid-August	Data analysis. Complete draft of my final paper by mid-month
Beginning of September	Finalize my paper and prepare for dissemination of results

Budget

Expense	Amount	Justification
Student Stipend	\$1,500.00	- Will have to cut back hours at work to facilitate time to conduct surveys
Survey Supplies - Copies - Pens - Clipboards	Estimate \$137.00	- (150 copies of survey*4pgs./survey*2 sides/pg. @ \$0.07/pg. = \$84) - I can use the ECON departments pens and clipboards - Table will become university property so that future students doing surveys can have access
Travel Cost - Home to Park	Estimate \$385.00	- (35 miles round trip) @ \$0.55/mile*assume no more than 20 trips necessary
Total:	Estimate \$2,019.00	

Dissemination of Results

Data collected from this project will be presented at the Fall 2013 UNCA Undergraduate Research Symposium; I will also apply to present at the Southern Appalachian Man and the Biosphere Conference (SAMAB), a conference focused on natural resource and environmental issues in the Southeast, and the National Conference on Undergraduate Research (NCUR). Additionally, the paper I write will be submitted to the UNCA Journal of Undergraduate Research and other appropriate journals. Since park managers and users will be interested in

the information, results of the study will be made available to them as well. During the surveying process, I plan to have an email sign-up sheet available to those who are interested in the results of the study so that I may be able to send a copy of the results electronically, as well as invitations to my presentation at the Undergraduate Research Symposium in the fall. One of the major benefits dissemination of my results will provide is the achievement of increased awareness among players and park management.

IRB Review

Since my research involves a survey with human subjects, I am required to submit to the Institutional Review Board (IRB) for review. IRB protocol will be submitted in early May and approval is expected by June.

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Resources

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SaveMcLarenPark. "Reports on McLaren Park and Disc Golf Impact." *Reports on McLaren Park and Disc Golf Impact*. SaveMcLarenPark, n.d. Web. 31 Mar. 2013. <http://savemclarenpark.org/SMP4_reports.html>.

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