

Report from the NatCap-USGA-Science of the Green Stakeholder workshop

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Background

There are approximately 16,000 golf courses in the United States spread over many ecoregions and within a large variety of social contexts, from urban to rural, from forest to swamp, grassland to desert. Economically, golf courses contribute billions of dollars collectively to the economy and create jobs for local communities.

Environmentally, golf courses require inputs of water, nutrients and chemicals that can be expensive to maintain. While these immediate, direct costs and benefits are fairly well-understood, the indirect contribution to landscape and the public is not as well-understood and beg the questions: *What are the ecosystem service values of a golf course? And how do the biophysical drivers of ecosystem services also affect enjoyment for golfers and other potential course-users?*

We held a stakeholder workshop with the USGA, local residents, community members, conservationists and members of the golf industry (see Table 1) to identify the potential ES attributes that a golf course can contribute in the landscape, e.g. pollinator conservation, biodiversity in general, storm water management, flood mitigation, potential recreation on the course, etc. We feel that the emphasis on stakeholder engagement through building a prototype will help all parties communicate goals and objectives and allow the process to evolve to better meet and represent the goals of the USGA, the superintendents and the local community the courses affect.

Workshop Description

Workshop organization: To generate the list of attributes from the stakeholders, we held a 3-hr meeting at the University of Minnesota with the project team (USGA, NatCap and Science of the Green) and 31 stakeholder participants. We organized the meeting into several interactive sessions to both encourage each participant to provide input and to allow our project team the opportunity to provide information on our project. Overall, we had three sessions – two sets of small-group discussions with plenary summaries split by two presentations from the project team, one from NatCap and one from USGA. We mixed small-group (6-8 people) discussion with plenary sessions for the groups to report back and summarize the answers from the small groups. We assigned participants to specific tables to ensure that each table potentially had a wider variety of view-points during the small-group discussions. We provided common questions to prompt discussions within the small groups. Members of the project team facilitated each small-group discussion and the plenary session was facilitated by a member of the university who is not part of the team.

Discussion questions: We generally organized the discussion sessions around the participant's current view of golf courses versus the potential for golf courses and what changes could be done. During plenary discussions, each group provided a summary of their answers and the project team recorded their answers (we have photos and scans of the lists but summarized the answers in the form of an objectives hierarchy).

Table 1. Discussion questions

	Session 1 questions	Session 2 questions
1.	Why did you decide to come to today's workshop?	What could golf courses be for you? How do you think golf courses could be changed to achieve this vision?
2.	Do you have any connections to golf? If so, what are they?	What services could golf courses contribute to you and your community, industry, or sector?
3.	What value or value(s) does a golf course provide to your community, industry, or sector? Why these values?	What would you want from the space currently occupied by golf courses? Why?
4.	What concerns do you have about golf courses? Why?	How could golf courses alleviate concerns your community, industry, or sector have?
5.	What is your current impression of golf courses and their value to you and your community, in general? Why?	How should we measure the attributes or metrics of sustainable golf course management?

Impact assessment: Just before the formal workshop activities began and just after the formal activities ended, we asked participants to complete a short survey. The goal was to determine whether and how perceptions and knowledge may have changed as a result of the workshop. We found that most views on courses did not change as a result of the workshop. However, participants became more optimistic about the future of golf.

Objectives and metrics:

One primary goal for the stakeholder meeting was to gain insight into what attributes contribute to the potential value of the space a golf course occupies. We used the elicitation discussion to generate a list of goals, objectives and attributes for the use of golf courses. For example, one concern voiced by those from the golf community was based on the potential for the “golfer experience” to decrease with changes that promoted some of the ecosystem services. An additional perspective from a stakeholder is that some golf courses would be better if they were urban farms. Beauty, as they say, is in the eye of the beholder.

To help organize the metrics and responses of the stakeholders, we've created an objectives hierarchy that helps illustrate the links and potential tradeoffs in these goals (Figure 1). The components of the hierarchy were taken from the list of items generated during discussion. For example, a key insight from the workshop is that there are two fundamental objectives that describe the total value of a course may not cause tension, the owner of the golf course likely wants to maximize the financial value of the course while the community may want to maximize the course's value for other reasons. The lightest boxes are getting close to potentially measurable metrics and the darkest boxes are more fundamental to the goals of the course. For example, if one were to ask, “how do we maximize the community value of a course?”, we'd list the next level of objectives in the hierarchy: opportunities for charity fundraising, education, urban farms, recreation, water resources and biodiversity. As one moves down the

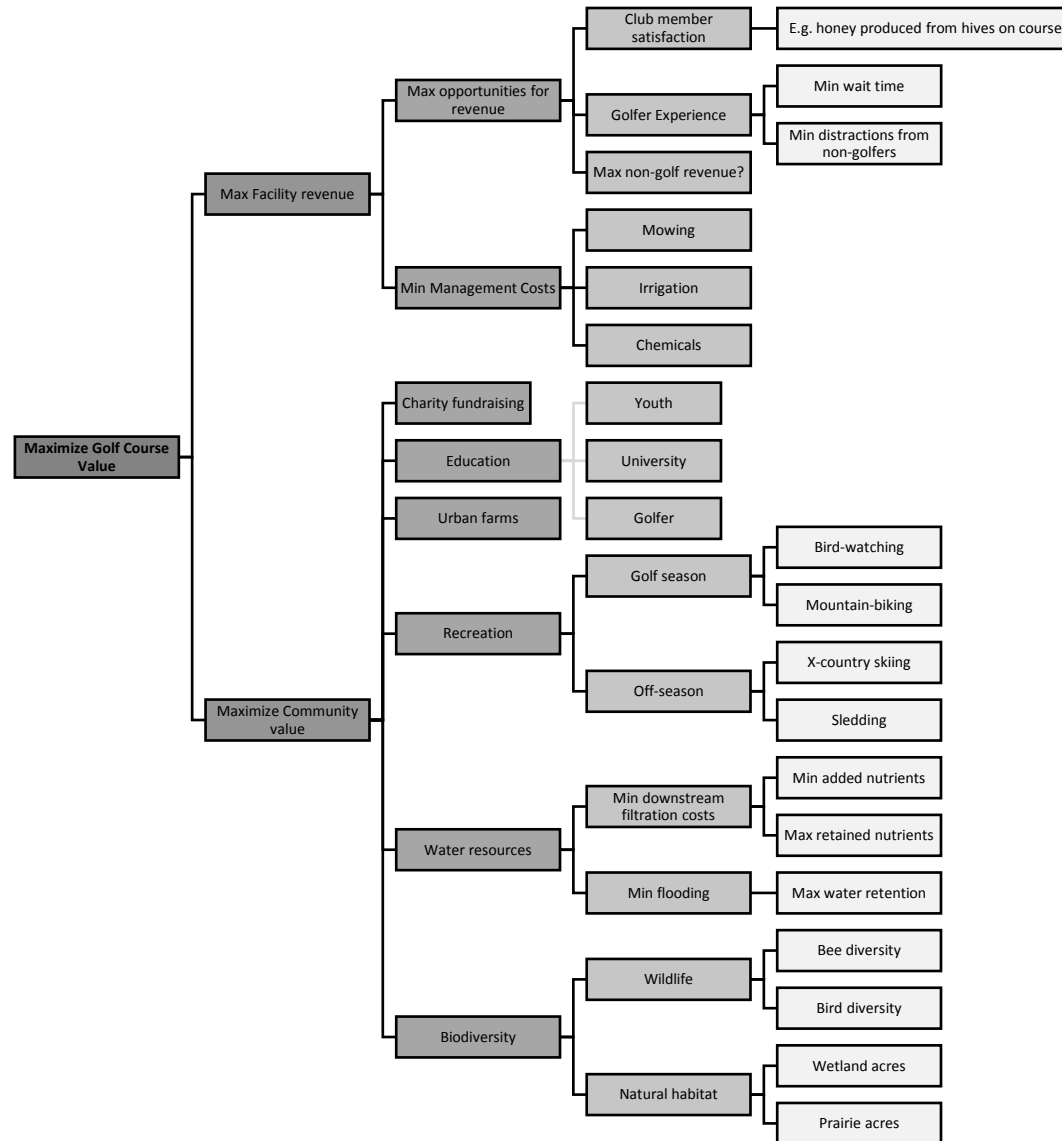
hierarchy, the branches go into more detail and should end with measurable attributes. Those measurable attributes will be affected by changes to the course (i.e. by the management actions), and thus the hierarchy provides the organizational logic to translate how actions affect the attributes and then to the main objectives.

The metrics representing the objectives would change with different scenarios and thus provide a way to link actions to overall objectives. For example, many stakeholders mentioned increasing public access to courses as a potential action. This could affect multiple attributes depending on the type of access. If it were off-season winter activities, they would be unlikely to affect golfer experiences but if it were during the golf season for bird watching, it might. It should also be apparent that the hierarchy can be linked to the course management tool that influences management costs and may affect some of the other attributes on public goods side. As the project moves forward, the objectives hierarchy will form an organizing framework and transparent rationale for our work.

Next steps

In our next step, we will choose which public attribute to focus on for more formal modeling and scenario planning and hire a research associate to develop models for that chosen attribute. Given the discussions during the workshop, biodiversity and water resources were the two most commonly discussed attributes. It is our hope that the NatCap research team can address one of these two attributes and then potentially collaborate with other members of the university to address the second. We will also post a summary of the report on our website and send a link to participants.

Figure 1. Objectives hierarchy from the stakeholder workshop.



Participants, Natural Capital of Golf Courses Workshop

12:00 – 3:00pm, Thursday, May 18, 2017

Natural Capital Project | Science of the Green Initiative | United States Golf Association

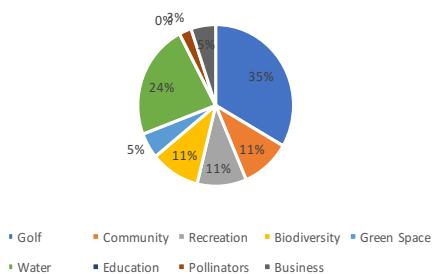
Participant Stakeholder Organizations:

Audubon Minnesota
Augsburg College Campus Kitchen
Barr Engineering
City of Falcon Heights
City of Saint Paul Parks
Club Managers Association of America
Kari Haug Golf Course Design
Metropolitan Council
Minnesota Department of Natural Resources
Minnesota Golf Association
Minnesota Golf Course Superintendents Association
Minnesota Realtors Association
Natural Resources Conversation Service
Prairie Restorations Inc.
Rice Creek Watershed District
Tee it for the Troops Charity
The Toro Company
Town & Country Club
UMN Athletics
UMN Bee Lab
UMN Community Relations
UMN Institute on the Environment
UMN Les Bolstad Golf Course
UMN Men's Golf Club
UMN President's Office
UMN Recreation and Wellness
UMN Science of the Green
UMN Turfgrass Lab
UMN Women's Golf Club
United States Green Building Council
United States Department of Agriculture
United States Golf Association

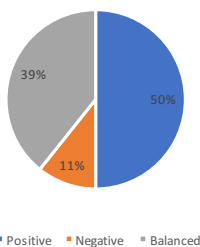
Natural Capital of Golf Courses Project - May Stakeholder Meeting - Survey Analysis

Pre-Meeting Survey

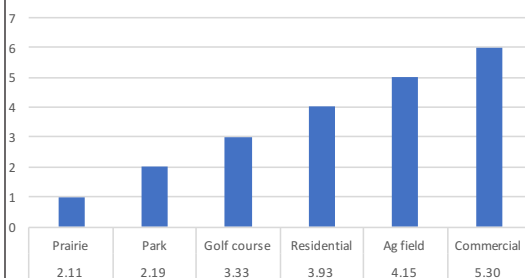
Stakeholder Field Classification (Pre)



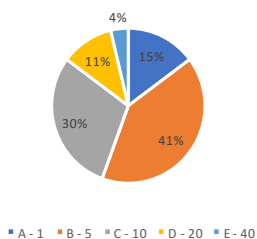
Perception of Golf's Impact (Pre)



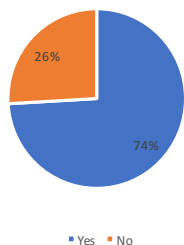
Ranked Order of "Community Value" (Pre)



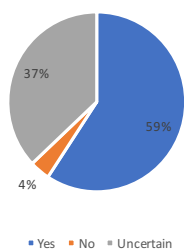
What percentage of green space are golf courses in the Twin Cities? (Pre)



Do you play golf? (Pre)

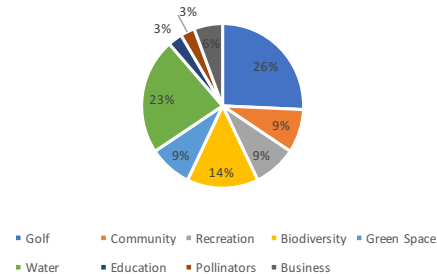


Are you optimistic for the future of golf? (Pre)

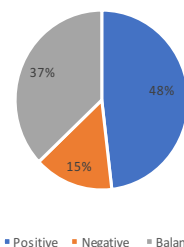


Post-Meeting Survey

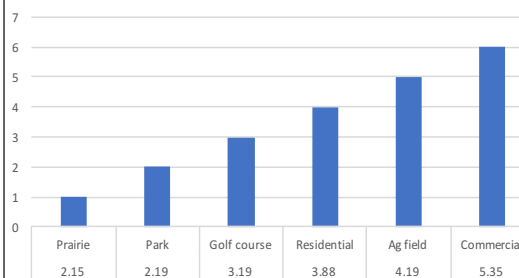
Stakeholder Field Classification (Post)



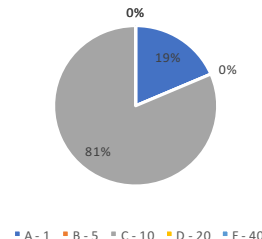
Perception of Golf's Impact (Post)



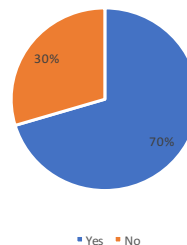
Ranked Order of "Community Value" (Post)



What percentage of green space are golf courses in the Twin Cities? (Post)



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