

TAKING GOLF OUT OF GOLF COURSE: TRAJECTORIES TO CONVERT FACILITIES TO PARKS AND OPEN SPACE PRESERVES

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1 ABSTRACT

Over 1,500 golf courses nationwide have closed in the past ten years according to National Golf Foundation (NGF) research. The purpose of this study is to identify closed golf course facilities that have turned into parks or open space preserve and examine the details of these conversions having to do with ownership and funding. These precedents serve as examples for stakeholders who are trying to figure out what to do with these closed golf courses. Methods included gathering filtered observational data to identify the cases to review and follow up on those cases with a survey. Based on a sample of 21 U.S. golf course facilities that have been converted to public parks or open space, 11 of the parks were formerly public golf courses and 10 were formerly private golf courses. 18 of the parks and open spaces are owned by public entities, and three are owned by non-profits. They were acquired and repurposed using many diverse solutions including partnering with land conservation organizations and other non-profit organizations and gathering diverse public funding sources. Closed golf courses offer the potential for conserving large parcels of open space to fill community needs such as ecosystem enhancement, recreation, habitat, and stormwater detention. 42% of the 365 closed golf courses examined in the initial stages of this study had no clear plans for future use. Identifying how other courses have been able to convert to parks provides valuable examples for golf course owners, municipalities, neighborhoods and other stakeholders that are currently looking for ways to move forward with repurposing closed golf courses.

1.1 Keywords

Golf Course, Land Use Change, Parks, Open Space Preservation

2 INTRODUCTION

Golf course facilities in the U.S. have been closing in large numbers during the past ten years. According to the National Golf Foundation (2017), 1,500 18-hole equivalent golf course facilities have closed. In 2016 alone, 200 golf course facilities closed nationwide (NGF, 2017). Every state in the U.S. in the last ten years has experienced golf course facilities closing, proving the problem is widespread. The main reason for a large number of closures can be attributed to the building of golf course communities in the late 1990's and early 2000's in order for developers to sell homes at premium prices, not due to the demand for golf. This issue is coupled with a decline in the number of people who play golf, which has created a surplus in golf course facilities with a less than adequate supply of golfers to support them (NGF, 2017). Slowly, over the last decade, the market has been correcting itself with this increase in golf course closures. Golf course facilities are predicted to continue to close for several more years (NGF, 2017). The more significant problem with golf course facility closures is that these large parcels of open space are suddenly becoming available for new land uses including for potential development. If these parcels are lost to development, the benefits that these facilities offer as open space are also lost.

Turning golf courses into parks or preserved open space seems like a sensible alternative as parks provide many of the benefits that the golf courses provide including recreation, ecosystem enhancement, stormwater detention, and urban wildlife habitat. However, turning golf courses into parks have proven to be challenging. Private landowners want to develop the defunct golf course land to make a profit while government stakeholders do not have the means for acquiring and maintaining a park or open space. Many local homeowners are still holding out for the golf course to return or some other solution to present itself while the golf course sits vacant. Stakeholders involved in these land use change debates are looking for solutions as to what to do with these closed and often problematic deteriorating golf course facilities.

This paper found examples of public parks and preserved open spaces that have been converted from golf courses and identifies some of the financial aspects of how they were converted and what amenities they offer on what is normally a large parcel of land for a park. The goal of this paper is to provide examples of how the preservation of land, from closed golf courses to parks and open space is happening to provide a resource for golf course facility owners and other involved stakeholders who are facing this issue.

2.1 Previous literature

The critically reviewed literature on converting golf courses to parks and open space was almost non-existent. A few Master of Landscape Architecture (MLA) thesis reports were found that discuss repurposing golf courses but were found to lack specific information about the practical aspects of land acquisition and funding, and rather tended to focus more on specific design and restoration strategies for a particular course. This paper attempts to fill that gap.

In more general terms, however, a wide body of research shows the benefits of open space. Open space has proven beneficial for real estate values (Irwin, 2002; McConnell & Walls, 2005; Brander & Koetse, 2011) for providing biodiversity and habitat (Kong, et al., 2009; Threlfall & Kendal, 2017), for mitigating stormwater (Tourbier, 1994; McGuckin & Brown, 1995; Demuzere, et al., 2014), for providing public health benefits (Chiesura, 2002; Fuller, et al., 2007; Lee & Maheswaran, 2011), for mitigating the urban heat island effect (Avisar, 1996; Wong & Yu, 2005) and providing ecosystem enhancement in general (Bolund & Hunhammar, 1999).

Golf courses, like open spaces, often provide many of the same benefits. For example, golf courses can create riparian, and wetland habitats for animals and are often areas of relatively high biodiversity compared to other urbanized environments (Merola-Zwartjes and DeLong, 2005; White and Main, 2005, Colding & Folke, 2009). Golf courses are also valued similarly in terms of the views that they provide to those living adjacent. Nicholls & Crompton in 2005 surveyed over 400 homeowners in a golf course subdivision in College Station, TX. They found that only 29% of homeowners actually played golf regularly on the golf course yet most homeowners abutting the golf course reported views of the golf course as being the most common reason for choosing that subdivision (Nicholls & Crompton, 2005).

While golf courses can confer many benefits as open spaces, it can be argued that they are often not as ecologically or socially beneficial as parks, and open space preserves. Studies have shown that golf courses can have negative impacts on water quality. Use of chemical fertilizers and pesticides have been shown to run off into nearby watercourses, which can change the algal composition of associated bodies of water, harm wildlife, ecosystems, and even golfers themselves. Additionally, groundwater may be impacted due to leaching of chemicals through the soils and into the water table (Smith and Bridges, 1996;

Wong, Chan & Cheung, 1998; Kunimatsu, Sudo & Kawachi, 1999; Winter, Dillon, Paterson, Reid, Somers, 2003; Wheeler and Nauright, 2006; King, Balogh, Hughes & Harmel, 2007; Baris, Cohen, Barnes, Lam & Ma, 2010).

While the use of reclaimed water for golf courses can offset the cost of using water resources especially in the arid and semiarid Southwest, reclaimed water use is linked with soil salinization which decreases soil fertility, as well as the build-up of other compounds, such as nitrogen, calcium, magnesium, boron, and even pharmaceutically active chemicals (Qian & Mecham, 2005; Candela, Fabregat, Josa, Suriol, Vignes & Mas, 2007; Chen, Yao, Sun & Chen, 2014).

Though golf courses often provide wildlife habitat, the quality of habitat is greater when it has a greater structural complexity of native habitat remnants which is often when the land is utilized as open space (Hodgkison, Hero & Warnken, 2007). Therefore, non-native turf grass-dominant golf courses do not have the same conservation potential as other types of open space unless they are specifically designed to maximize conservational features (LeClerc & Cristol, 2005). As a simplified ecosystem, a golf course can only provide simplified ecosystem enhancement.

Finally, there is the benefit of free public access to parks which has multiple implications. Golf courses serve only those willing and able to pay to use the course and the skills to do so. Parks are able to serve a broad reach of the public. This value can be seen in the comparison of research on proximate home values near parks and golf courses. Research shows that homes abutting golf courses pay 4.8% to 28% premiums over similar homes not on golf courses (Do & Grudnitski, 1997; Asabere & Huffman, 1996; Grudnitski, 2003; Schultz & Schmitz, 2009; Nicholls & Crompton, 2007). Homes abutting parks were found to pay similar premiums at 20% -33% (Crompton, 2001; Espey & Owusu-Edusei, 2001; Hammer, Coughlin & Horn, 1974). The difference lies in the home values for those near golf courses or parks but not abutting. Research shows that homes near parks are valued higher than homes near golf courses. One study found that homes one-half mile away from a golf course had a value increase of only .76% (Asabere & Huffman, 1996) while other researchers found no effect on value at only one-quarter mile away (Lutzenhiser & Netusil, 2001). In contrast, home values up to one-half of a mile away from parks were found to have a premium of 4.2% (Hammer, Coughlin & Horn, 1974) and one-quarter of a mile away premiums of 6.5%-10% (Espey & Owusu-Edusei, 2001; Crompton, 2001).

Public access to parks and nature has also been found to benefit public health. Researchers have found access to parks may prevent mental illness (Maller et al., 2005), decrease anxiety (Nutsford et al., 2005), encourage people to walk more (Sugiyama et al., 2010; Sugiyama & Thompson, 2008).

3 Methods

The data collection for this paper took place in several parts. The first part involved identifying closed golf course facilities across the United States that had closed since 2006 when the number of closed golf courses started to outnumber the number of openings. Those facilities were then evaluated for their plans or lack thereof, for land use change. The second part involved identifying closed golf course facilities that have been repurposed as parks or open space within that national database in order to gather more specific information on those facilities. A mixed methods approach to research design was employed in order to embrace different findings (Andres, 2012).

3.1 Phase 1 Data Collection

The National Golf Foundation tracks golf course facilities that close but only makes the general data of how many golf course facilities and in which states available to members. Beyond that, there appears to be no publicly available database of closed golf courses. Therefore, a more specific list of closed golf course facilities was necessary. An overview of the methods used in phase 1 can be found in Appendix A.

First, an online search of hundreds of local newspaper articles and business journals turned up names of golf course facilities that had closed. The websites of these golf courses were then searched as well as golf course review websites to verify their closure. Verified closed golf course facilities were added to a closed golf course database. Each state was searched for closed golf course facilities. At least 20% of the number of golf courses reported closed by the National Golf Foundation for each state in the past five years were identified (National Golf Foundation, 2013-2017). Inherently, throughout the research, more closed golf courses were discovered, and the list continues to grow and change. The data included in this paper is as of December 2017.

Once the closed golf courses were gathered and verified, an online search of over 400 local

newspapers, business journals, and public documents were conducted to find out if and when the course was repurposed and if there were plans for the redevelopment of the parcel. Any plans for repurposing were noted in the database along with the date of publication.

3.2 Phase 2 Data Collection

After the closed golf course facilities were identified and the facilities that had been repurposed or had plans for repurposing were identified, the facilities that had been repurposed as parks and open spaces could be identified. There were several courses that had been repurposed partially as parks and partially developed that were not included. This omission was made mainly due to the larger number of facilities this would include and the complications that may result from adding development to the findings. Also, the purpose of this research sought to look for examples of golf courses that had been preserved as parks or preserved open space only. See Appendix A, Figure 2 for the phase 2 methods flowchart.

Next, the courses that were identified as parks or open space were examined. Some were identified as having new private uses such as cemeteries or RV parks and were therefore not included in the sample. Many were identified as still being in an early stage of planning or acquisition or showed no signs of progress and therefore were not included in the sample population. A couple of golf course facilities were identified as still being owned by the golf course owner and are being minimally maintained and open to the public until another future use is established and also discarded. This left a sample population of 28 golf course facilities that have been repurposed as parks and open space to examine in more depth.

3.3 Survey Design

The purpose of the questions asked in the survey was to identify specific facts about how each golf course facility was converted. By collecting the same factual data from each park, any trends in how these parks are converted could be identified or denied. The method of coming up with a survey of questions for each park was chosen for the ability to have a quick turn around and to gather the main facts and info for each park. The nature of the data is cross-sectional in that the data were analyzed from a specific subset at a specific point in time (Creswell, 2009). All data gathered is as of December 2017.

The managers of the 28 repurposed golf courses were contacted by email and asked to complete the self-administered survey questions. 12 parks responded directly to the survey questions. Six more were then contacted by phone in order to enhance the response rate. Ten courses did not respond to inquiries. Of the ten that did not respond, there were three that researchers were able to find most of the information in publicly available data sources such as maps or official city websites. Therefore, 21 parks were examined in this study. The data collection methods were chosen for this data collection based on the fact that they appeared to be the most reliable means of finding out the information in a quick and efficient manner.

Questions for the parks and open space managers were formulated by determining the information thought to be most useful in answering the research question. Understanding the land ownership transactions, funding and specific intentions for park upgrades or amenities appeared central to understanding how the land use change materialized.

Table 1. Questions for park or open space preserve managers

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1. Name of the golf course and park or open space:
 2. Who owned and operated the golf course?
 3. If it was publicly owned, where did the funds come from?
 4. Who owns the property as a park/open space/ nature preserve?
 5. If the property changed ownership, how was it acquired?
 6. Who is operating the property as a park/open space/nature preserve? (If different than the owner)
 7. Were there or are there significant changes in store for the repurposing or rehabilitation of the property?
 8. What are the proposed changes? Are there new amenities? Are there new income generating activities?
 9. Who is funding any new changes?
 10. Who is paying for continued operations and maintenance?

11. Do you have any before and after data such as water use, user numbers, bird counts/habitat quality or quantities, etc.?

12. List any other interesting or pertinent information you have to share.

The data analysis for this project was both quantitative and qualitative. Most of the information obtained was factual however the implications of some of the data was approached from a qualitative standpoint. Field notes from phone interviews and raw email responses were assessed, and answers were sorted into a spreadsheet with various categories (see Table 2.) Quantitative data were compared by park and across categories while looking for themes and connections amongst results. Ways of representing the data were explored, and a list of larger implications was compiled.

Table 2. Categories for data analysis

Type of conversion
 Name of Park
 Size of park
 Golf course owner/operator
 Acquisition funding sources
 Acquisition process
 Park owner/operator
 List of changes/new amenities
 Clubhouse information
 Conversion funding sources
 Operations & maintenance funding sources
 Revenue generation resources
 Before and after information
 Miscellaneous information of interest

4 Results

365 closed golf course facilities from across the nation were identified. 210 of those courses had some plan for future land use, and 46 courses included some form of park or open space, often with development. From that list, 28 were identified as having been repurposed solely into public parks and open space preserves. Information was collected for 21 of those parks and included in the results of this study.

4.1 Ownership transition

Overall, the parks and open spaces studied consisted of 11 public regional or recreational parks, nine open space preserves, and one non-profit that is half open space preserve and half Community Supported Agriculture.

The results show that the majority of golf courses preserved as parks and open space were public golf courses that are now managed as public parks, so the owner did not change. This was expected due to the fact that no acquisition had to take place and municipalities decided to simply change the function and manage the land differently. One golf course remained public but is now owned and operated by a different public entity. Five of the 21 parks were privately owned golf courses that have become public parks or open space. Interestingly, all five privately owned golf courses acquired by public entities were purchased with one main source of funding, in many cases a city's general fund or one large private donation.

Increasingly, non-profit organizations are acquiring golf course land for open space preservation and habitat creation. All three golf courses acquired by non-profit organizations are now open space preserves with habitat restoration and preservation as one of the primary goals. Two more of the precedent studies were private golf courses that have become public parks through the active involvement and financial support of non-profit organizations. This finding suggests that public-private partnerships may be

a viable alternative for stakeholders who don't have the means of preserving parks or open space on their own.

4.2 Acquisition funding

Eleven of the 21 facilities changed ownership in their transition to park and therefore, had to be acquired. The results revealed that three of the 11 golf courses were purchased by cities using their general funds. These parks happen to be located in somewhat affluent areas which might account for the entities having more money in their general funds. Three more private golf course facilities were acquired with the help of funding that came from private donors. Two were acquired via funds from land conservation organizations. One course was acquired through a Public Lands Management Act that had provisions that allowed for new land acquisition. The final three courses reported a combination of funding sources for acquisition that included special assessment district taxes, city and county open space bonds, private donations, a variety of water and land conservation funds. Of these 11 acquired golf courses, ten were acquired as one transaction, and one was acquired in phases over several years.

4.3 Park Conversion

Now that these golf courses are parks and open spaces, we wanted to know, more specifically who owns them. The majority of these parks are now owned and operated by cities (10 of 21). Four of the parks are operated by regional park districts, three are owned and operated by non-profits, including one land trust, and two are state parks. Finally, one park is now a county park, and one is owned by a water authority, serving a dual purpose of park and stormwater management.

Funding for the conversion of the golf course into a park was found for only 20 of the 21 precedent studies. Table 3 shows the various specific funding sources for conversion. The majority of the precedents are getting funding for conversion through a combination of sources. The results also reveal that there appears to be no real trend in funding. The funding these parks are finding come from a wide range of sources and several admitted to the fact that they were still looking for sources.

Table 3. Conversion and restoration funding sources

Neighborhood assessment districts, citywide bonds, joint bonds with the city, parks district and school district, park in-lei funds, use of land as mitigation land
City and town funds
Property tax that dedicates money each year to construction projects, "imagine your parks" tax initiative
Municipal liquor enterprise, sale of a portion of the property to commercial development and park dedication fees
State funds and federal funds for creating protected wetlands
City bonds and private donations
Capital Improvement Program; botanic garden=non-profit
Recreational Trails Grant and TBD
County funds
Public Lands Management Act
External grants from state and federal agencies and the Conservation Fund
State greenspace program, state EPA water resource restoration program, federal grants, state funds
State conservation fund and parks district funds
Water authority=design; non-profit conservancy paid for implementation with donations
Non-profit members and contributors, grants from their partners
State stewardship program, private donations and American Recovery and Reinvestment Act

Private donations and by work of founders, staff and community volunteers

Funding for continued operations and maintenance were primarily provided by city and county funds for city and county parks, state funds used for the state parks and Park District funds for the four parks that are part of the Parks Districts. More specific info on how the Park Districts were funded was not acquired. Three of the parks are solely operated and maintained by volunteers, community groups and donations and a few more reported a combination of grants and general funds.

4.4 Amenities

The amenities included in the plans of these new parks reveal that all but one prioritize trails as a major amenity of the park or open space, as shown in Figure 1. Similarly, almost all of the parks are preserving large areas of the parcel as open space. Almost half of the parks and open space areas include picnic areas and restrooms. This is likely due to the larger size of the parcel and therefore the park or open space. As expected, preserved open space has more educational components, wetlands and restoration projects while the parks have more traditional forms of recreation such as sports fields, playgrounds, dog parks, etc. Some unique amenities found included BMX tracks, mountain biking trails and drone operation areas which may reveal new trends in park amenities having to do with evolving recreational preferences.

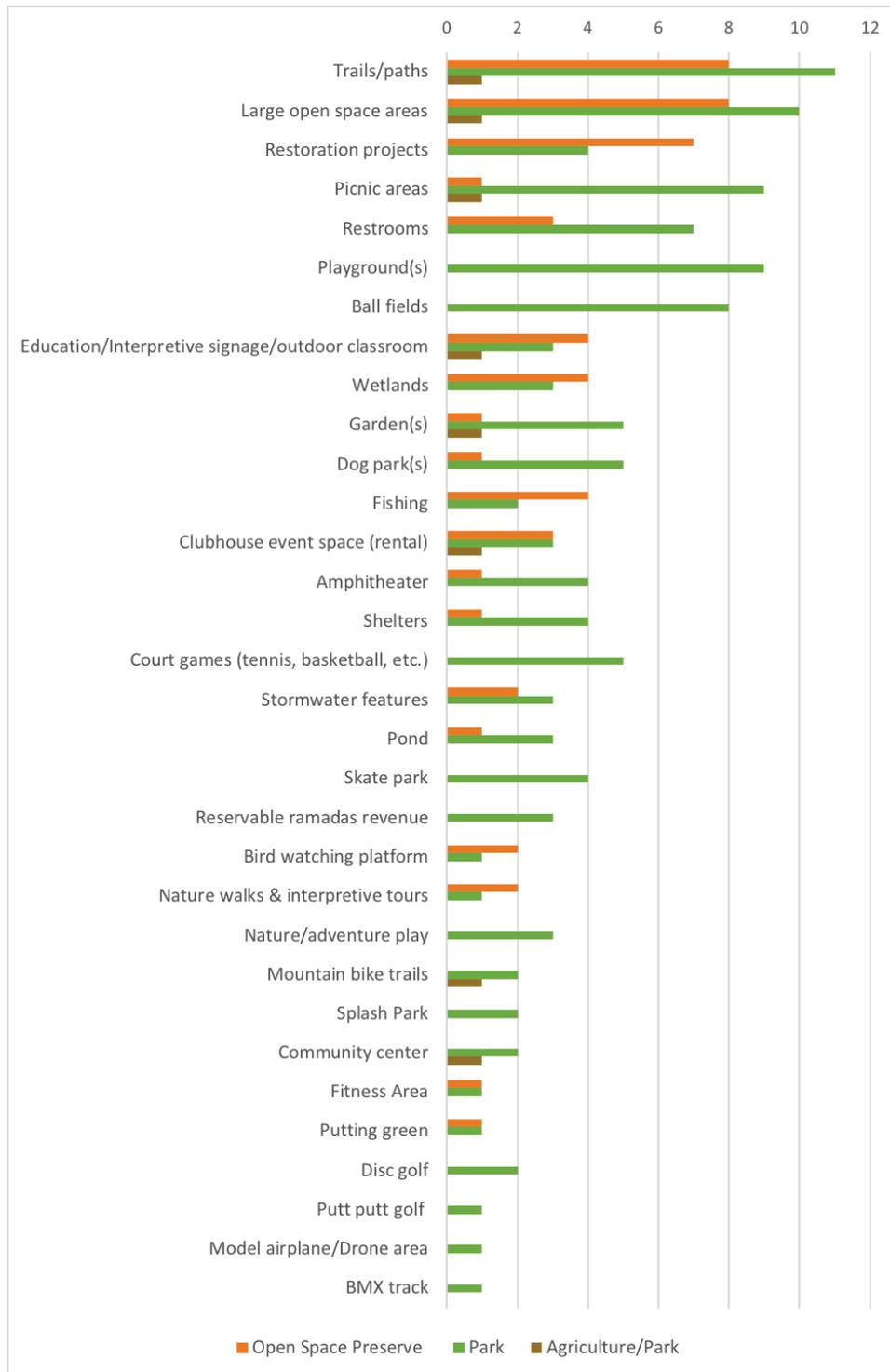


Figure 1. Amenities by type of park conversion

4.5 Revenue generation

This study also roughly looked into some of the new amenities that offered the owners of the parks a revenue source. We found that 14 of the 21 had no revenue-generating amenities and offered everything completely free of charge to the users. Seven of the 21 precedent studies offered some form of revenue generation that includes amenities such as rental pavilions, clubhouse rental, pay-to-use disc golf, leases

to putt-putt golf course owners, etc. Four parks that currently do not have revenue-generating amenities mentioned that they would like to add revenue-generating amenities in the future showing a possible trend in finding additional funding sources to help support operations and maintenance of these parks. See Table 4 for a full list of revenue-generating amenities.

Table 4. Revenue Generating Amenities.

Active recreation parks	Disc golf (lease) Athletic field lights Pavilion rentals Kayak and canoe rentals Shelter rentals Event spaces Baseball fields Putt-putt golf course run by an independent entity Skate park
Passive recreational open space	Clubhouse rented to a catering company Gift shop Guided tours Conference room/classroom rentals
Organic farm & Open Space	On-the-job training Community Supported Agriculture Retail store

Information on the golf course facility clubhouses was also compiled as it can sometimes be a problematic issue if the clubhouses are deteriorating. The results varied widely as to what their future use would be. Some of the nicer clubhouses continued to be rented out for events and used as a revenue-generating source for their owners. Along the same lines, another was being rented out to a concessionaire. Others are being adapted as new offices, maintenance headquarters, and gift shops. One clubhouse that included a hotel was sold off to a hotelier to pay for some of the changes to the park. In general, clubhouse and pavilion rentals appear to offer the most consistent opportunity for generating revenue on site and generating revenue appears to be more necessary in the operations and maintenance of parks.

5 DISCUSSION

The results of this study reveal that many of the golf courses repurposing into parks are doing so using a variety of funding sources and partnerships. Public entities these days do not appear to have the funding sources to take in closed golf courses on their own unless they happen to be in more affluent municipalities. There also appears to be an inclination for non-profit organizations to acquire golf course land for open space preservation and habitat creation. All three courses that are now solely owned and operated by non-profits are nature preserves, one of which is also unique in that it is partially a farm and orchard that offers job training and Community Supported Agriculture (CSA) for their community.

The data revealed some potential trends in priorities for conversion of the land. Half of the parks had current plans for the active restoration of meadows, watercourses or wetlands. Almost all of the parks preserved large quantities (1/3 or more) of the golf course as open space or natural areas. This is likely due to the large nature of the parcels but could also reveal a move toward prioritizing space for habitat and ecosystem enhancement.

As mentioned previously, the courses that have become primarily open space preserves are owned by non-profit groups and provide few amenities beyond trails, nature viewing and education. This could also be due to a limited source of funding. However, trails appear to be the highest demand amenity in almost all of the parks. By preserving the land, maintaining it minimally with trails and allowing public access,

these golf courses can provide associated benefits listed in the literature review at a fraction of the cost of larger parks full of amenities. Ironically, of the parks that had the more extensive list of amenities, the majority had not been built yet nor did they have a reliable source of continued funding for the implementation. One park with a more extensive list of amenities did have more robust funding sources and a solid plan for additional revenue generation. It would be a worthwhile study to look into the use of the various amenities to see which are actually used by more people. One park mentioned relying on commercial development elsewhere on their parcel to help fund the conversion. This mention of new development funding the preservation of the rest of the land conversion is worth noting for future research.

5.1 Before and After

Unfortunately, many parks were not able to report on before and after statistics as they were either lacking information from the previous owner, the conversion wasn't complete yet or they just were not tracking anything. Based on some of the comments received, however, four parks reported noticing immediate increases in bird abundance and richness once the turf was no longer being maintained and more diverse plant species started to come in. Two parks reported significant water reductions in their first year after closing the golf course. What was interesting was that one of those courses planted new orchards and uses half of the course for agriculture yet still reported using millions of gallons of water less than the golf course used. The other course claimed they used less than half as much water as the golf course did while still maintaining a mostly turf grass park meanwhile reusing the irrigation system to establish new native grasses. Another interesting comment that was received had to do with the number of people who would have access to the site. As a golf course, their course was serving about 300 people per week for golf recreation purposes while they predict they will be serving several times more people each week in an underserved community with free access to recreation, once their program is complete and fully implemented. Because much of this data is qualitative, future research should be done in quantifying this data.

6 CONCLUSIONS

The research revealed that 210 of 365 (58%) closed golf course facilities had plans, which means that 155 (42%) had no plans that could be found and almost all of those courses are sitting vacant. Many developers, municipalities, home-owners, and stakeholders are still looking for solutions for these closed golf courses that don't involve total development. Creative approaches to preserving the land as parks and open space exist for privately-owned facilities. In cases where funding for conversion was not easily accessible, many of the parks operated as a passive recreation space with just trails and a few benches until additional funding could be found, providing access to the open space with less initial investment. Non-profits and public stakeholders that need financial assistance should look for partnerships and multiple creative funding sources to acquire the means for acquisition and repurposing.

These parks and open space conversions should serve as examples for conserving golf courses as open space. Conserving golf courses as open space upholds and improves upon the valuable qualities that the golf courses provide in the first place while providing public access and greater benefits to the ecosystem and the community.

This study focused solely on closed golf courses that have been transformed into publicly accessible parks and open spaces. Future research could look into the golf course facilities that have been transformed into a new development that also include large parks and open space. How much of those parcels are being preserved as open space? Is it being funded by the development or some other source and what are the benefits versus impacts of those developments? Other future research could identify how the lack of municipal funds for parks and maintenance are affecting the amount and quality of urban open space.

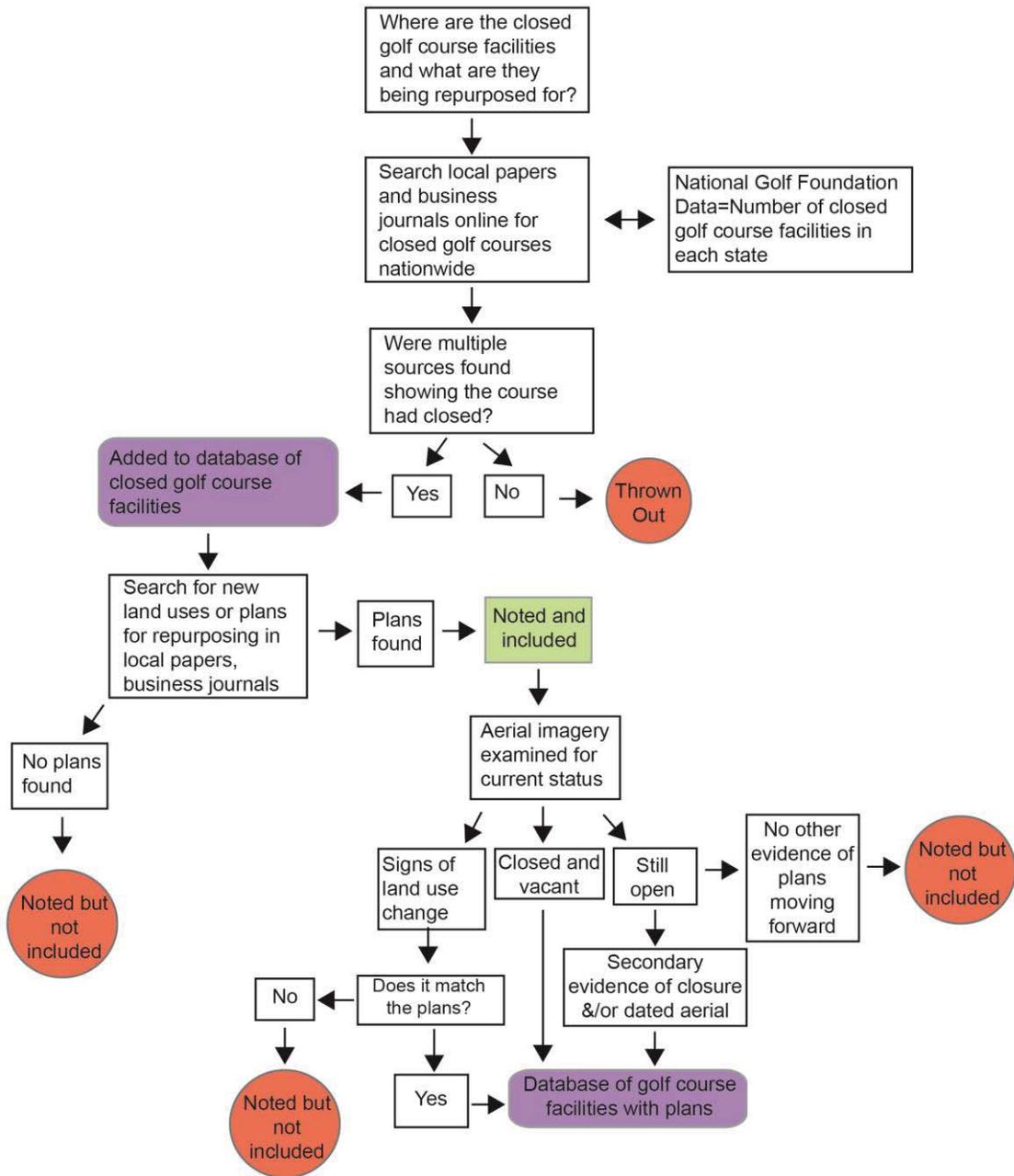
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Appendix A. Figure 1. Phase 1 Data Collection



Appendix A. Figure 2. Phase 2 Data Collection

