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Updating the manager's toolbox: Mapping spatio-temporal trends in freshwater fishing

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ABSTRACT

Wildlife-associated recreation is culturally and economically important, yet relative participation in the United States is declining. To address concerns of recreation managers, we present an innovative way to assess temporal trends and the spatial distribution of licensees in conjunction with demographic, economic, biophysical and social datasets. Geocoding license-based wildlife-associated recreation (i.e., fishing and hunting) provides a cost-effective strategy for monitoring spatio-temporal changes and learning about a community. We demonstrate this approach by calculating the retention, recruitment and loss of licensed freshwater recreational anglers in North Carolina between 2008 and 2010, and examining the demographic profile of areas with the greatest loss of anglers from 2008 to 2010. We describe how geocoding licenses can help assess the sustainability of a recreational fishery and the quality of fishing resources. Tracking trends in license purchases can provide recreation managers with insight to make informed decisions in recruitment strategies, and avert overuse or overcrowding.

MANAGEMENT IMPLICATIONS

- Geocoding of license information provides a cost-effective, widely-available technology to monitor spatial and temporal changes of licensed wildlife-associated recreationists.
- Changes in the spatial distribution of licensed anglers through time can provide insight into where recruitment and retention (e.g., outreach and advertising) are most needed.
- Joining license data to biophysical, demographic and socioeconomic data in a spatial context can provide managers stronger information for strategic planning and investment

1. Introduction

Wildlife-associated recreation is an important source of income for local and national economies (Munn, Hussain, Spurlock, & Henderson, 2010) and an important cultural ecosystem service that provides people an opportunity to interact with nature (Hernández-Morcillo, Plieninger, & Bieling, 2013). Despite the social and economic importance of these activities, research suggests that participation in the United States (US) is declining (USFWS, 2007), from 57% in 1991 (USFWS, 1993a) to 38% in 2011 (USFWS, 2013a). Furthermore, urbanites are less likely to engage in wildlife-associated recreation than their rural counterparts (Dempson, Robertson, Cochrane, O'Connell, & Porter, 2012; Schroeder, Fulton, Nemeth, Sigurdson, & Walsh, 2008). The decrease in wildlife-associated recreation may further a detachment between people and nature, decrease license sales, and thereby decrease state funds for conservation and management (ASA & AFWA, 2007; Mahasuweerachai, Boyer, Balsman, & Shoup, 2010). An assessment of wildlife-associated recreation provides valuable information to help understand how current and future trends in participation impact society, the economy, and the environment (Lewin, Arlinghaus, & Mehner, 2006). Being able to monitor such changes is important in order to maintain wildlife-associated recreation at a level that is both economically and environmentally sustainable (Pröbstl & Haider, 2013).

To date, monitoring and assessing wildlife-associated recreation has primarily been conducted through surveys at various

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spatial scales. The most comprehensive assessment of wildlife based recreation in the US is the Survey of Fishing, Hunting and Wildlife-Associated Recreation conducted by the US Fish and Wildlife Service (USFWS) every 5 years since 1991 (USFWS, 2013a). The state and national-level information published in the reports is widely used by federal, state, and private organizations to monitor trends, understand behavior and preferences of wildlife-associated recreation participants, and subsequently to manage activities (Tseng, Huang, & Ditton, 2012; USFWS, 2013a). Surveys can provide a wealth of information; however, it can be difficult to obtain a sufficient number of responses upon which decisions can be made (Graefe, Mowen, Covelli, & Trauntvein, 2011). Surveys also take considerable time to construct, disseminate, organize responses, and analyze (Sexton, Miller, & Dietsch, 2011). National or state-level data, like those gathered by the USFWS, serve to monitor social and economic dimensions of wildlife-associated recreation, but are sometimes insufficient to answer specific, place-based management questions.

2. Alternative management tools: geocoding licensed wildlife recreationists

A cost-effective supplement and/or alternative to recreation surveys is using Geographic Information Systems (GIS) to map the home location of licensed wildlife recreationists by means of geocoding. Geocoding consists of assigning longitude and latitude coordinates to the address of licensed wildlife recreationists. The increased accessibility and use of GIS coupled with greater electronic documentation by government agencies make geocoding the residence of license-holders a method that can provide novel, fine and coarse information regarding the geographic and temporal distribution of licensed wildlife recreationists. The geocoded licenses can be summarized by watershed, town, zip-code, county, or any geographic boundary that meets the objective of the analysis. Geocoding has been widely used to monitor the relationships between disease and socio-economic conditions (Krieger & Zierler, 2001) and to monitor rates and patterns of crime (Kuo, Lord, & Walden, 2013), but it has only recently gained importance in the fields of outdoor recreation and ecosystem services (Dabrowska, Haider, & Hunt, 2014; Villamagna, Mogollón, & Angermeier, 2014). Geocoded licenses can help monitor license-based wildlife-associated recreation patterns over time and space when coupled with demographic, social, and biophysical information (Table 1).

2.1. The case of freshwater recreational fishing

Herein, we describe the type of insight that can be gained from geocoding wildlife recreation licenses with the case of freshwater recreational fishing. Coupling geocoded fishing licenses with outside data provided by state fish and wildlife agencies, the US Census, and others, can help answer a variety of questions germane to the management of a recreational fishery (Table 1). Given the assumption that licensed anglers are more likely to fish near their homes (Hunt & Hutt, 2010), the density of anglers can be used as a proxy of ecological pressure (Villamagna et al., 2014). When coupled with social (e.g., access, amenities, and managed land) and biophysical attributes (e.g., quality of natural resources) that contribute to the capacity to support recreational fishing, the spatial and temporal distribution of licenses can provide insight on the sustainability of a recreational fishery (Table 1 and see Villamagna et al., 2014). Similarly, angler license sales have been shown to be a function of the quality of fishing resources and socio-demographic information, where findings suggest that participation can be enhanced by catch (e.g., stocking) and non-catch (e.g., accessibility, environmental conditions) efforts (Dabrowska et al., 2014).

Geocoded license data can also be paired with demographic data, such as the US Census, to answer more specific management questions, including but not limited to (i) how does angler density vary across the landscape? and (ii) how does the economic, racial, ethnic, and educational composition of high angler density areas compare to areas with low angler density? Along these lines, consulting groups, such as Southwick Associates, have helped state

Table 1
Potential demographic, social, biophysical and sustainability questions that can be conducted in conjunction with geocoded angler licenses.

Category	Potential Questions	Data	Sources
Demographic	How does median community income relate to the density of anglers? What is the dominant age group and racial profile of anglers within a new area targeted for recruitment? Where should public hearings be held to maximize angler attendance? Who should be invited to focal group meetings?	Income, race, ethnicity, education, sex, age, urban–rural, house-hold characteristics	US Census; ESRI's TAPESTRY® database
Social	Where should gear and bait shop advertisement be located to reach the greatest number of anglers? How accessible are public fishing spots to licensed anglers? Where are fish being stocked in relation to angler density?	Boating sites, stocking, bait and gear shops	State Fish and Wildlife Agency; State Conservation and Recreation Agency
Bio-Physical	What is the condition of land cover surrounding prime fishing spots? Where should habitat restoration efforts be developed? How does angler density relate to water quality or fish population/community metrics?	Waterbodies, impaired waters, land cover, fish abundance, fishing spots	State Environmental Quality Agency; USGS – NLCD and NHD; State Fish and Wildlife Agency
Sustainability	How does local angler density relate to overuse pressure and ecosystem degradation? What is the relationship between local fishing conditions and license sales or angler retention?	GIS and statistical analyses	

Note: Acronyms refer to: United States (US), Environmental Systems Research Institute (ESRI), United States Geological Survey (USGS), National Land Cover Database (NLCD), and National Hydrography Dataset (NHD).

agencies to increase fishing license sales and revenues by describing the demographic and socioeconomic characteristics of licensees using ESRI's TAPESTRY® database which separates US neighborhoods based on lifestyle and life stage (Southwick Associates, 2006). Similarly, Taylor et al. (2008) assessed whether fish stocking programs in surveyed areas were attracting greater angler diversity by spatially intersecting the home ZIP code of those surveyed anglers with publicly available demographic data. These assessments provide valuable information that described the population engaged in wildlife recreation. However, these assessments were mostly temporal snapshots. Further analyses evaluating changes in the licensees over space or time can better help answer long and short term management questions, such as where to focus angler recruitment and retention efforts (Fedler, 2007).

Recognizing the potential benefits of mapping recreational fishing trends by means of geocoding, we worked with the Wildlife Resources Commission of North Carolina (NCWRC) to evaluate the ability of GIS to quantify the retention, recruitment and loss of licensed freshwater anglers throughout North Carolina between 2008 and 2010. To demonstrate the utility of GIS, we conducted several analyses to (i) identify areas of anglers lost, retained and recruited over time, and (ii) assess the demographic profile of areas that experienced a loss in licensed anglers from 2008 to 2010. Our goal was to demonstrate a geocoding-based mapping approach that could provide novel information regarding freshwater anglers. We describe emerging temporal and spatial patterns in freshwater angling in North Carolina, describe the demographic profile of important areas for retention and recruitment efforts, and discuss the implications of this methodology for management. We focus on freshwater recreational fishing in North Carolina, but the same methodology could be used for any licensed-based recreational activity where license records are maintained.

3. Methods

In this section, we describe the geocoding license process, how we used the mapped licenses to assess temporal and spatial changes in North Carolina, and how we related demographic data to mapped licenses. The tabular database of annual licenses from 2008, 2009 and 2010 and lifetime licenses purchased up to 2010 was provided to us by NCWRC (2010). Each record included the licensee's street address and license type and each licensee was assigned a unique identification code. We included combination license types in which freshwater fishing was included with other recreational sports (e.g., salt water fishing and/or hunting; Table A1), but excluded short-term and non-resident licenses. All analyses were conducted in ArcGIS 10.0 (ESRI, 2010).

3.1. Mapping licenses

Using ESRI's ArcGIS 10.0 North American Geocode Service available through ArcDesktop, we geocoded the address of each licensee and created a spatially explicit layer of freshwater anglers in North Carolina (ESRI, 2010). Due to spelling mistakes, misclassifications or post-office locations, not all licenses could be geocoded. Since geocoding is not without flaws, we compared our geocoding results to statewide resident angling estimates reported in the North Carolina Survey of Fishing, Hunting and Wildlife-Associated Recreation (hereafter referred as the Survey) to validate our approach (USFWS, 2013b).

3.2. Temporal analysis

We compared annual 2008, 2009 and 2010 licenses to spatially assess net changes between the three time periods, and angler retention, recruitment and loss. We derived the net changes by subtracting the number of licenses between 2008–2009, 2009–2010 and 2008–2010 by census tract (CT). To assess anglers retained, recruited and lost, we tracked the number and location of anglers by CT using the unique customer identification code assigned to each licensee. We define recruitment as a license that was registered in 2009 but not in 2008, and in 2010 but not in 2009 or 2008. We use recruitment here not to imply the effect of a management action, but instead as a license increase from one year to the next. We define retention as a license that was registered in 2008 and 2009, 2009 and 2010, or 2008 through 2010; and loss as a license that was registered in 2008 but not in 2009 or 2010, and in 2009 but not in 2010. To spatially show changes in the anglers recruited and lost between years, we subtracted the number of anglers recruited from the total number of anglers lost for each CT. We illustrate angler retention from 2008–2009, 2009–2010 and 2008–2010, and the number of unique anglers recruited and lost for the same time periods.

3.3. Case study: Angler recruitment efforts

As a way of demonstrating how mapped licenses can be useful to managers trying to increase recruitment and retention efforts, we identified the CTs that had lost the greatest number of unique anglers from 2008 to 2010. We describe the racial and income profile of these CTs using the 2010 US Census (U.S. Census Bureau, 2010) to illustrate how geocoded licenses can be used in concert with outside datasets. The economic, racial, and ethnic composition of these areas can be used to develop more effective advertisement campaigns (Meekers & Rahaim, 2005), identify the ideal economic and racial composition for focal groups based on the surrounding community (Krueger & Casey, 2009), and, with data from multiple areas of angler loss, predict future trends in license purchases based on projected population changes (Murdock, Loomis, Ditton, & Hoque, 1996).

4. Results and discussion

4.1. Mapping success

Our comparison of geocoding results and the Survey indicated that estimates of freshwater (FW) adult anglers, the percentage of the total state population that fishes in freshwater (% FW anglers), and the total adult angling population were similar (Table 2). We attribute the small differences between the two data sources to differences in data collection methods and the potential errors associated with sampling bias, survey-based adjustments (e.g., sportspersons non-interview adjustment), and erroneous license records.

Despite spelling errors and misclassified addresses, we were able to geocode more than 92% of all license records (Table 3). We were least successful at geocoding lifetime licenses, which is

Table 2
Comparison of state-wide resident freshwater angling statistics for North Carolina between survey and geocoded license sources.

Metric	Survey	Geocoded licenses
Adult population	7,264,000	7,510,570
FW adult anglers	1,012,000	1,208,961
% of FW anglers	13.93	16.10

Note: The adult population is comprised of individuals 16 years and older. The Survey adult resident population is based on 2011, while the Geocoded License adult resident population estimate comes from the 2010 Census (U.S. Census Bureau, 2010).

Table 3
Number of total and geocoded resident freshwater recreational fishing licenses for 2008, 2009, 2010 and lifetime in North Carolina, and the percentage of geocoded licenses from the total number of annual and lifetime licenses.

Year	Total licenses	Geocoded Licenses	% Geocoded
2008	841,942	834,326	99
2009	852,155	832,707	98
2010	863,702	844,258	98
Lifetime	380,067	351,217	92

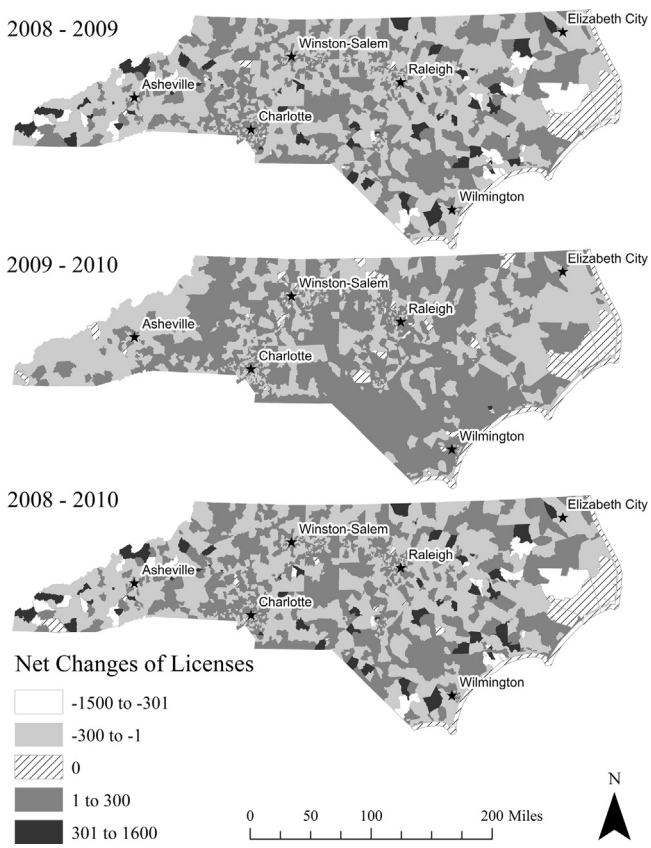


Fig. 1. Map illustrating the net changes in license sales by CT between 2008–2009, 2009–2010 and 2008–2010 without taking into account unique customer IDs. Negative values indicate CTs with angler loss, and positive values indicate CTs with angler recruitment.

likely due to the lack of updated addresses. We suggest successful mapping could be improved with slight changes to license record management. For example, agencies could invest in an on-the-fly address locator to verify if the address is correct.

Unlike national trends that show recreational fishing has declined, fishing has increased in North Carolina. The state-level Survey reported an increase of around half a million anglers between 1991 and 2011 (USFWS, 1993b, 2013b), a trend also reflected in the geocoded licenses that increased by 22,000 from 2008 to 2010.

4.2. Temporal and spatial patterns

The net change map shows the number of anglers recruited (1–1600), lost (−1 to −1500) and retained (0) between years (Fig. 1). We found that most CTs of North Carolina experienced a modest

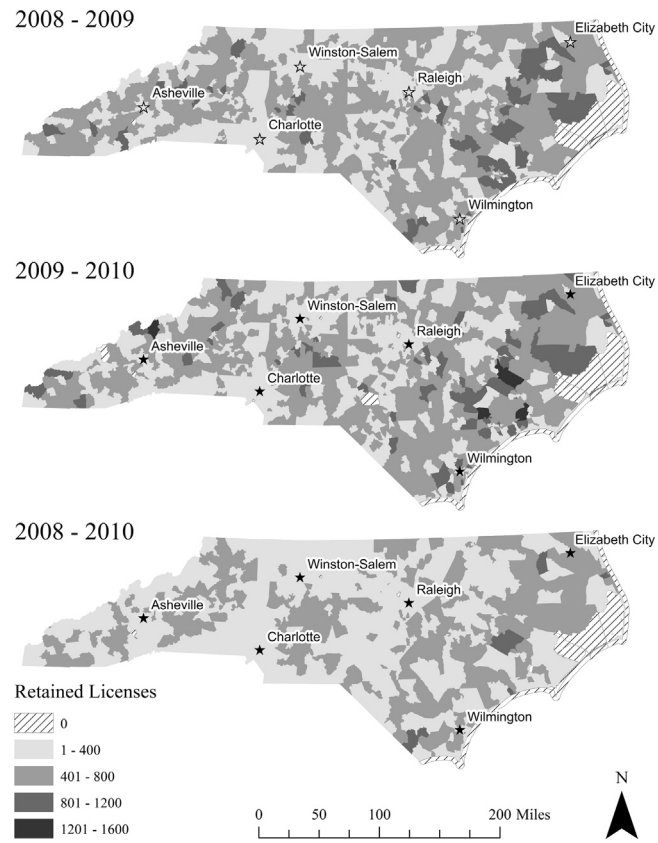


Fig. 2. Map illustrating the anglers retained, given the unique customer ID, by CT between 2008–2009, 2009–2010 and 2008–2010.

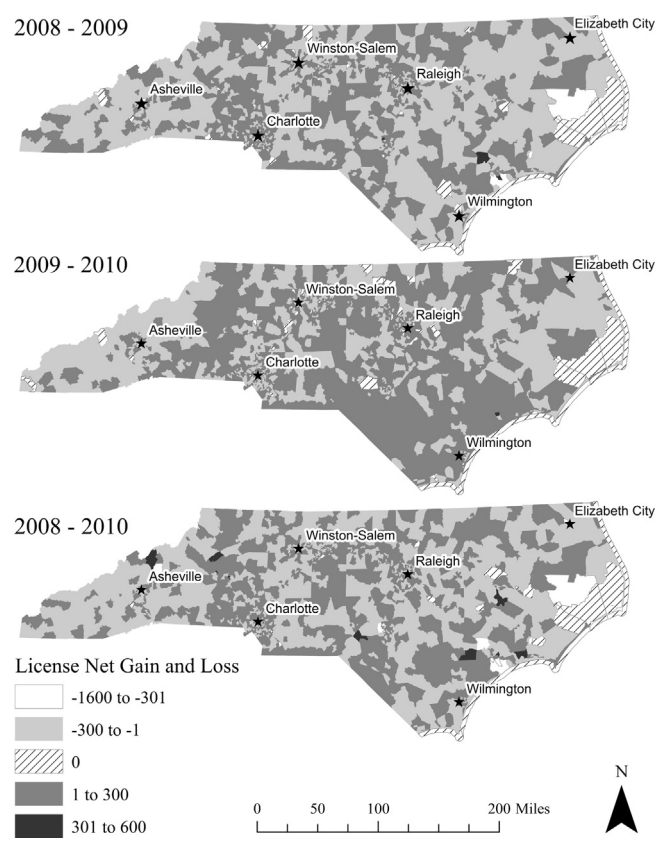


Fig. 3. Map illustrating the CTs that underwent a net recruitment (positive) or net loss (negative) of resident freshwater recreation anglers for 2008–2009, 2009–2010, and 2008–2010.

annual change ($\pm$500 license holders) between 2008 and 2010, and that much of the net change between 2008 and 2010 occurred between 2008 and 2009. We did not detect a significant spatial pattern in CTs that either retained or lost anglers based on net change in license evaluation. This analysis allowed us to rapidly visualize and assess temporal and spatial changes in licensed anglers and it provided a comprehensive overview of regional trends over time. Net change in angler density provides a meaningful assessment that can be used to estimate the demand on fishing resources and the ecological pressure over time. However, this net change assessment does not reflect emigration and immigration of individual licensed anglers across CTs since it does not account for customer ID.

By taking into account the customer ID through time we can account for translocation and, therefore, we can calculate the number of anglers truly recruited, lost and retained. When accounting for translocation, we generally found high angler retention throughout the state, except in the big cities of Winston-Salem, Charlotte, and Raleigh (Fig. 2). Annual retention was especially high in coastal areas. A greater number of CTs (85%) had a lower retention level (1–400) from 2008 to 2010, than during the 2008–2009 (74%) and 2009–2010 (73%) periods.

Overall, we found a greater number of CTs that recruited licensed anglers throughout the state between 2009 and 2010 (58%), than 2008 and 2009 (49%) and 2008 and 2010 (51%); the number of CTs that experienced loss was roughly equal between 2008–2009 (48%) and 2008–2010 (46%) (Fig. 3). Much of western North Carolina CTs experienced a loss of anglers for all three time periods. All major cities, with the exception of Wilmington, also exhibited a loss of anglers.

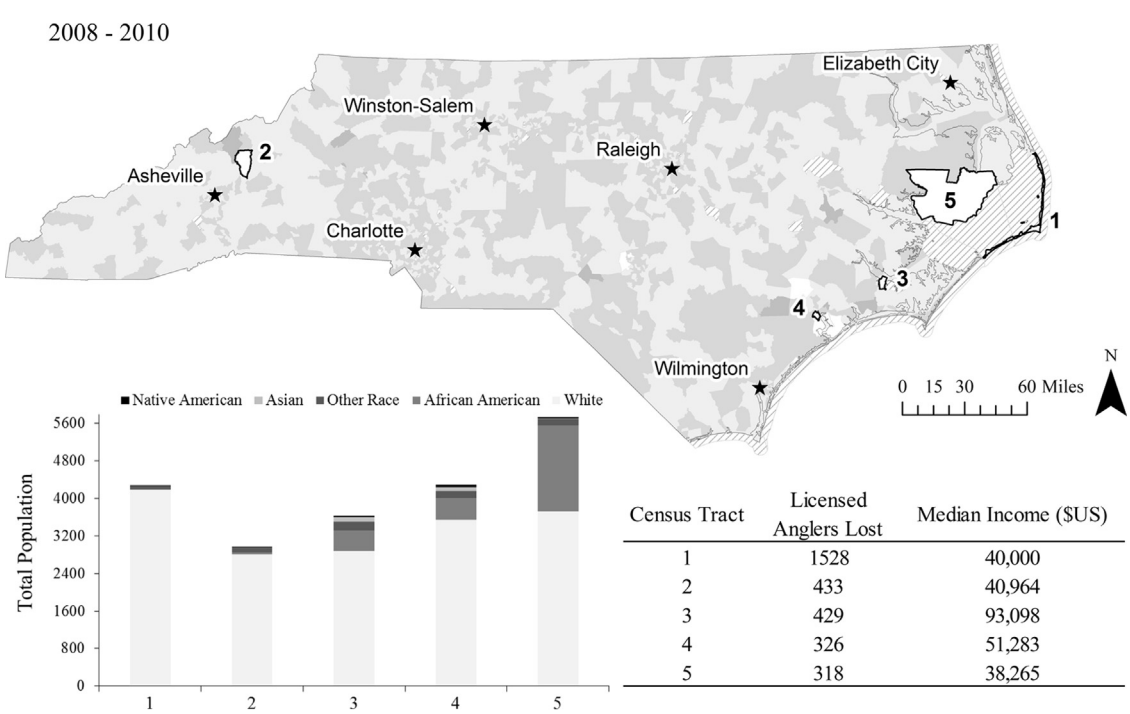
Overall, the number of anglers increased between 2008 and 2010 (Table 3). Around 60% of anglers were retained from 2008 to 2009 and from 2009 to 2010, but only 38% were retained from 2008 to 2010 (Table 4), suggesting new anglers were recruited in 2009. Around 20% of anglers were recruited and lost from 2008 to 2009, and from 2009 to 2010, while 30% were recruited and lost from 2008 to 2010. These results suggest a minor increase in the total abundance of anglers because the angler population lost was replaced with new anglers. Being able to map the true number of anglers that were recruited, lost and retained provides greater accuracy than if we did not account for emigration and immigration rates of anglers. The geographic location of lost and recruited anglers varies and likely depends on management efforts, environmental and socio-economic conditions. In this research note, we are unable to provide in-depth explanations for the temporal and spatial changes in licensed anglers as many of these changes are location-specific; however, the intention of the case study explained below is to provide insight into drivers of change for CTs that lost the most number of anglers.

Table 4
Comparison of the licenses retained, recruited and lost, analyzed by unique customer ID, from 2008–2009, 2009–2010 and 2008–2010.

Year	Retained	% Retained	Recruited	% Recruited	Lost	% Lost
2008–2009	624,205	60	208,502	20	210,121	20
2009–2010	645,390	63	198,870	19	187,319	18
2008–2010	464,031	38	380,216	31	370,286	30

4.3. Case study: Angler recruitment efforts

We identified seven CTs that lost more than 300 licensed anglers from 2008 to 2010. We focus on five of the seven CTs for which both population and income data were available from the 2010 Census. Of the five included, one was located north of Asheville, while the other four were located in coastal North Carolina (Fig. 4). With basic US census data, we can evaluate the racial and economic composition of the population within these areas and answer questions regarding the observed loss of anglers.



Census Tract	Licensed Anglers Lost	Median Income ($US)
1	1528	40,000
2	433	40,964
3	429	93,098
4	326	51,283
5	318	38,265

Fig. 4. Location of the five CTs (labeled 1–5 in bold) that underwent a substantial net loss in licensed anglers from 2008 to 2010. The background map is equivalent to Fig. 3. The bar graph reflects the racial composition of each CT and the table compares the number of licensed anglers lost to median household income.

For example, do the areas that experience loss share similar characteristics or do these characteristics vary with observed changes in licensees? We found that areas that lost more than 318 anglers between 2008 and 2010 ranged in their racial composition; however all CTs were predominantly white (>64%). Within these five areas alone, the percent of African Americans in the population varied from less than 1% to 32%. Thus, there were no clear patterns suggesting that racial composition might have influenced the loss of anglers. Although the median household income varied dramatically across the focal CTs (Fig. 4), three of the five focal CTs (1, 2 and 5) were below North Carolina's median household income ($46,450). Among these areas was census tract 1, within the Outer Banks in Dare County, where 1528 of its licensed anglers were lost from 2008 to 2010. Multiple reasons can explain the loss in licensed anglers in census tract 1, however the first two relate strongly to local economic condition. First, in 2007, a state-wide subsidence waiver program was implemented where North Carolina residents under the poverty line were eligible for a free subsidence unified inland and coastal recreational fishing license (NCWRC's Coastal Research Coordinator, pers.comm.). Although we do not know the retention rate prior to 2008, it seems logical that there was a time lag between the inception of the program and when this option became known to local anglers. If this were true, angler participation may have remained constant despite a loss in purchased angling licenses. Second, Dare County experienced the greatest fluctuations in property values in North Carolina due to the subprime mortgage crisis in 2008 (Smith, 2009). Either of these changes could have driven the loss of anglers from 2008 to 2010 or the loss of anglers could be attributed to other changes that affected fishing. Further research would be needed to understand the role that these and other possible circumstances not addressed here (e.g., hurricanes, yearly fluctuations in tourism, quality of the fishery) may play in the loss or recruitment of licensed anglers.

Geocoded license analyses can provide recreational managers with spatial information about the greatest angler losses, and a demographic characterization of the places they live. Moreover, demographic information can be analyzed across the region to determine whether there are widespread patterns that help explain observed changes in licensed anglers. By incorporating census data, we are making the assumption that the people represented in the administrative unit are representative of the angler population within that unit. We expect greater similarity between the population being described by the census and the angler population when working within small administrative units like the census tract. Angler surveys may avoid the potential for this bias, however joining the US census information with the geocoded licenses allows for greater spatial coverage for a smaller investment of time and money.

5. Management implications

In 2011, around 38% of the US adult population (16 years and older) participated in some form of wildlife-associated recreation and collectively spent $145 billion dollars (USFWS, 2013a). Given the socioeconomic relevance of wildlife-associated recreation in the US, it is important to enhance our monitoring and assessment techniques as new opportunities arise.

While license purchases and participation in North Carolina have been modestly increasing over time, the distribution of anglers across the landscape may be influencing the economic and social sustainability of freshwater recreational fishing. Observed trends in licensed anglers may be attributed to a wide array of fine- and large-scale drivers, including management efforts such as local stocking, license types and policies, catch and release regulation, travel time, fishing seasons and access to fishing spots (van Berkel & Verburg, 2012; Dabrowska et al., 2014), environmental conditions such as appropriate biophysical conditions that allow anglers to enjoy a pleasurable experience (i.e. clean water, shade, healthy riparian areas) (Hernández-Morcillo et al., 2013), and the economy and climate.

Angler's willingness to travel from their homes to fishing spots is likely to change through space (e.g., urban versus rural anglers) and time (e.g., young versus old anglers). One of the main assumptions of joining geocoded licenses to demographic, social and biophysical data is that licensed anglers fish near their homes. Confirming this assumption would require linking local surveys to the license holder's unique identification code. Linking surveys to license holders would enable managers to evaluate preferences (e.g., where and what is fished) and behaviors (e.g., solitary versus family fishing), as well as fine tune the distance anglers are willing to travel. Knowing this distance could provide recreation managers greater accuracy to assess changes over time, in conjunction with understanding the small-scale and large-scale drivers.

Assessing the spatial and temporal distribution of anglers using GIS is a cost-effective, widely-available technology that has the potential to impact the way recreation is managed. The spatial distribution of licensed anglers can help inform agencies of areas where recruitment and retention efforts are needed (e.g., historically high participation levels that have decreased over time), where environmental education and outreach programs might be more effective (e.g., areas with low retention and recruitment rates), and how to channel marketing and communication strategies, for less time and money than a survey. Information of this nature gives agencies the feedback they need to target management efforts. For example, identifying areas with a high density of disabled and elderly anglers might guide management efforts to increase and facilitate accessibility. Once we can identify areas where management efforts are warranted, much finer resolution assessments, like surveys and analysis with ESRI's TAPESTRY®, can provide additional information to help target cohorts of potential anglers. Joining angler preferences compiled through local surveys with the angler's residence can provide a valuable spatial dimension to information about expenditures, fishing location and frequency that could be later used to map areas of potential overuse pressure or crowding (Villamagna et al., 2014). In conclusion, spatial and temporal analyses of licensed wildlife-associated recreation are valuable for strategic planning and long-term sustainability.

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Appendix A

See Table A1.

Table A1
Resident annual 2010 and lifetime license types provided by the North Carolina (NC) Wildlife Resources Commission. We included combination license types in which freshwater fishing was combined with other recreational sports (e.g., salt water fishing and/or hunting).

License type	License description
NC annual	Comprehensive Inland Fish
	County Inland Fish (basic)
	Hunting/Inland Fish (basic)
	Res Inland Fish (basic)
	Resident Hunt/Fish Guide License
	Resident Special Inland Fish Develop Commercial
	Resident Special Inland Fish Develop No Commercial
	Special Guest Inland Fish
	Sportsman
	Unified Inland/Coastal Recreational Fishing License
	Unified Sportsman/Coastal Recreational Fishing License
NC Lifetime	Age 65 Sportsman
	Disabled Combo Hunting/Fishing/Coastal Recreational Fishing
	Basic Disabled Sportsman
	Disabled Inland Fish(Basic)
	Lifetime Age 65 Comprehensive Inland Fish
	Lifetime Comprehensive Inland Fish
	Lifetime Comprehensive Over 70 Fish w/CRFL
	Lifetime Fishing Over age 70
	Lifetime Comprehensive Inland Fish w/CRFL
	Perm Disabled State Fish w/CRFL
	Resident Lifetime Over 70 Sportsman with Coastal Recreational Fishing License
	Resident Sportsman Adult
	Resident Unified Sportsman/Coastal Recreational Fishing License Adult
	Sportsman Infant
	Sportsman Infant with Coastal Recreational Fishing License
	Sportsman Youth
	Unified Adult Care Home Inland/CRFL
	Unified Sportsman and Coastal Recreational Fishing License Infant
	Unified Sportsman and Coastal Recreational Fishing License Youth
	Unified Age 65 Sportsman and Coastal Recreational Fishing License
	Unified Blind Inland/Coastal Recreational Fishing License
	Unified Disabled Veteran Sportsman and Coastal Recreational Fishing License
	Unified Totally Disabled Sportsman and Coastal Recreational Fishing License

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