Fishing License Sales and Marketing Efforts in Iowa from 2001-2013

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Iowa Fisheries Research

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Executive Summary

Fishing is foundational to the outdoor traditions of Iowans. It is an activity introduced for many during childhood, with Iowa youth fishing participation being one of the highest rates observed in the U.S. Fishing opportunities are found across the entire state, with public waters available in every county and ranging from reservoirs to glacial lakes to trout streams. Fishing licenses were first required in Iowa in 1918, and since then sales have become an essential measuring tool for gauging fishing participation trends and changes. License sales and numbers of licensed anglers have been documented since 1924 and shifted to digital data storage in 2001, allowing for more advanced analysis and modeling of fishing participation.

This shift to digital data coincided with concerted marketing efforts that began in 2005 in partnership with the Recreational Boating and Fishing Foundation. Declining or fluctuating fishing license sales and fishing participation were troubling trends seen both in Iowa and nationwide, threatening the legacy and future of fishing in Iowa. Therefore, Iowa Department of Natural Resources conducted targeted marketing and outreach, presented and assessed herein, and identified broader factors affecting fishing participation from year to year. Factors beyond the DNR's control, such as weather, help us understand certain changes in participation that could not be avoided, whereas factors that can be controlled, such as the cost of a license, can be incorporated into decision-making.

Key Findings:

- Number of Iowans with fishing licenses peaked in 1975, followed by a slow and erratic decline, with drops and bumps coinciding with major economic or natural events that hindered fishing participation. Although participation rate continues to decline, resident fishing licenses sales have been somewhat stable to slightly increasing in recent decades. Important factors affecting resident fishing license sales were population size (positive), unemployment rate (positive), March temperatures (positive), and annual rainfall (negative). Other factors include:
    - Population composition: Generational shifts could benefit fishing participation, as younger people are buying fishing licenses in greater proportion to their part of the Iowa population. Iowa has great growth potential for angling!
    - Urbanization: As population density increases, fishing participation decreases. Many Iowa youth are growing up without farm ponds, making close-to-home public fishing opportunities all the more important in towns and cities. However, urban residents respond to marketing efforts, sometimes sporadically but in substantial numbers, with high responsiveness seen in residents of intermediate-sized towns. Iowa DNR should continue investing in community fishing opportunities, building partnerships in urban and suburban areas, and engaging urban residents through programs, events, and outreach.
    - Fishing license cost: Fishing license value has remained relatively stable over time, with license fee increases adjusting for inflation intermittently. Although license fee increases seem to correlate with short-lived and statistically insignificant decrease in the number of fishing licenses sold.
- Marketing to new and lapsed anglers began in earnest in 2005 with a partnership with the Recreational Boating and Fishing Foundation, which tested a variety of broadly-reaching and targeted marketing techniques. Each year yielded new knowledge for reaching anglers:
    - Marketing to anglers who purchased a license the previous year but not yet in the current year was far more cost-effective and impactful than marketing to lapsed anglers (i.e., those who had missed at least one full year of fishing). Anglers with longer and more consistent purchase histories (i.e., avid anglers) are also more responsive to marketing efforts, making some lapsed angler purchasing patterns more effective targets than others.
        - Forgoing marketing to the most responsive sub-groups or to those not-yet-renewed in order to target those more likely to lapse, based on purchasing histories, is not cost-effective. Iowa DNR should focus on lapsing anglers, i.e., those who purchased a fishing license last year but have not purchased one by May 15 of the current year. Lapsing anglers should be identified and targeted with renewal mail or email campaigns in time for them to purchase a license before Memorial Day. *Preventing* lapse is one of the most effective ways to maintain the angler population.
        - First-time anglers are far more likely to lapse. First-time anglers should be identified immediately and targeted with a "Welcome to Iowa fishing" packet, following by extra license renewal reminders with personalized information during the subsequent years. A high proportion of first-time anglers are

women, so these communications would be most effective in mailed format with email follow-ups. Iowa DNR should target first-time anglers with special information and effort.

- Broadly advertising reminders to get a fishing license and go fishing were highly cost-effective, not only for new anglers but also for lapsed anglers with strong purchasing histories. Even avid anglers may forget or delay license purchase, and broadcast advertising (e.g., "Take Me Fishing" radio ads) yielded 5.2% higher license renewal rates for that group. Broadcast advertising yielded greater renewal rates for men, but not for women. Radio was especially effective, emphasizing the importance of targeting top local radio stations for reaching men with messaging. Iowa DNR should continue to use broadcast advertising strategically, especially radio. Messages that should be utilized in broadcast media campaigns should include "Make memories. Take your family fishing." and "Get close to nature. Spend time in Iowa's great outdoors when you go fishing." Advertising should be focused on the April 1 - June 1 timeframe, when 45% of annual license sales occur.
- Regionally-specific biologist letters were memorable and appreciated, but may not have influenced actual license purchasing behavior in 2006. When examined by gender in later years, however, direct mail yielded greater renewal rates for women, but not for men. A letter, with or without a follow-up email, was more effective than postcards, and a follow-up email is recommended when an address is available. Iowa DNR should send personalized, information-rich letters with follow-up emails to non-renewing women anglers. Topics should include angling tips, local waterbodies to visit, and other guidance specific to that area.
- Direct mail can be expensive, but personalized, targeted emails alone can be almost as effective in reaching an angler already in the licensing system. Emails should be requested during license purchase, so the angler knowingly provides it to Iowa DNR as an avenue for communication. Iowa DNR should emphasize email collection of license buyers and lean heavily on email communications.

- Great marketing cannot supersede bad weather or busy lifestyles. The external factors affecting license sales will exert their influence every year regardless of marketing efforts, but some things can be adjusted. For instance, a marketing campaign that was going to begin on a rainy weekend could be delayed until the following sunny weekend. Temperatures should be in the 60s or above for people to respond to calls for fishing. Iowa DNR should adjust expectations and tactics based on external factors that drive overall sales.
- Additional research is warranted regarding 1) the interests, desired messaging, and constraints for urban residents; 2) the desired messaging for avid anglers who purchase their license regularly; 3) the nature of purchasing patterns for those most and least likely to become avid anglers in the future; and 4) effectiveness of cross-activity marketing, drawing anglers from those who participate in adjacent outdoor activities. All major marketing efforts should be formally evaluated for their impact on license sales and cost-effectiveness.

Suggested citation format, American Fisheries Society Style Guide:

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Introduction

Outdoor recreation has long been an important part of life in Iowa, and fishing is a vital element building outdoor traditions in the lives of Iowans. Native Americans "fished" Iowa's rivers by building weirs to gather fish and holding ponds to contain them, and artifacts of these structures remain today (Wilson 2012). The French explorers of eastern Iowa, as well as the Lewis and Clark expedition in the west, commented on the great size and abundance of fishes in Iowa waters (Menzel 1987). Iowa's first fishing laws were passed in 1862, within the first two decades of statehood. The first Fish Commissioner was appointed and the first hatchery constructed in 1874. By 1918, a law was passed that required a fishing license in Iowa (Conover 1987). Fishing licenses were administered through the Iowa Conservation Commission (now the Iowa Department of Natural Resources [DNR]).

Fishery management in Iowa has undergone dramatic changes in the last 150 years. The early strategy involved indiscriminate stocking, followed by an action plan of generating more hatchery fish, more regulations, and more wardens. Later, new lakes were constructed to provide more fishing opportunities in southern Iowa (Figure 1, Crane and Olcott 1933). By the 1930s, trained fisheries professionals were hired to research problems and formulate solutions to improve fishing. Since then, fish managers have adopted data-based decision-making tools and sound biological principles to "shorten the time between bites" - an ultimate goal of the Iowa DNR's Fisheries Bureau (Conover 1987).

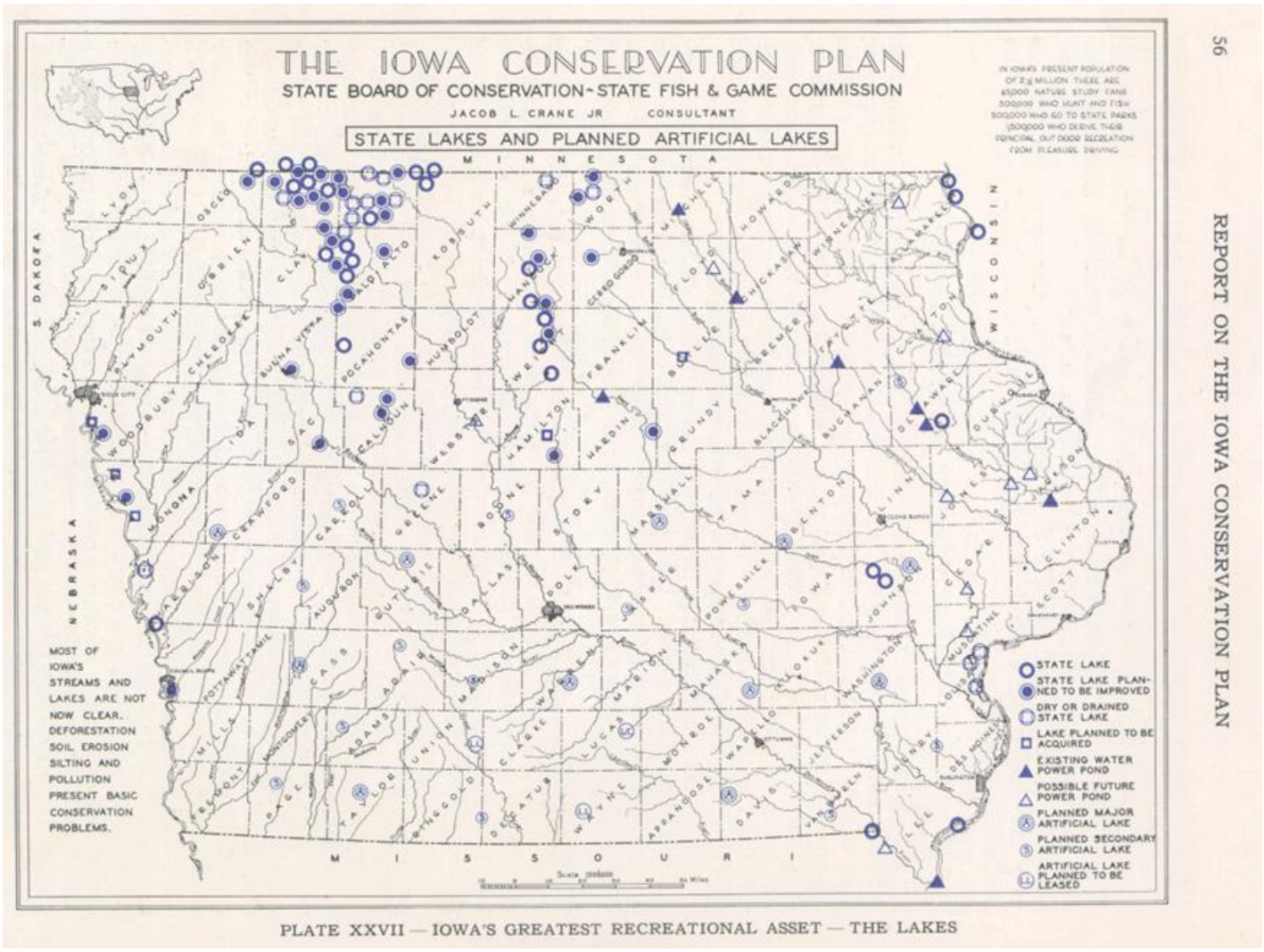

Figure 1. Existing and proposed lakes, 1933.

Iowa has a history of understanding the importance of providing quality outdoor recreational opportunities close to home for every Iowan (Figure 2, Crane and Olcott 1933). The Twenty-Five Year Conservation Plan suggested 540 recreational sites statewide to enhance public access to aquatic resources including rivers, natural lakes, and the newly constructed impoundments. The Conservation Commission had no doubt that such a plan benefited Iowans:

> "The southern half of Iowa is lakeless; and the streams are muddy and polluted. The logical means to provide good fishing is by the construction of artificial lakes…. For fishing purposes, the first artificial lakes should be spaced about forty miles apart in each direction, all across the south half of Iowa. This will make the average distance of driving to a lake by road about 15 miles and the maximum distance about 25 miles. This is a short haul and the first lake projects need not be spaced closer than forty miles apart. But they must be located in a fairly even geographic distribution, and the distribution must also recognize the prospective tributary population, the present fisheries situation, and a proper relationship to other projects such as existing lakes, state parks and preserves, etc.
>
> "These made lakes will furnish excellent fishing - bass, sunfish, crappies. They will serve as waterfowl refuges. Some offer sites for inns and cabins and for bathing beaches, swimming and boating, fine picnic and camp grounds, and winter sports. They may have some prospective value for future water supplies. Not least, they will augment the beauty of the southern Iowa landscape.
>
> "Fishing as a sport needs no defense. Perhaps no other form of active outdoor recreation is so widely popular, and no other takes so many men, women and children out into the open. Very often catch is unimportant, pleasure being derived from the mere delight of being at leisure outdoors. The familiar quotations are not without significance: "Sometimes, while fishing, I set and think, and sometimes I just set;" and "The fishing is good even if the catching is poor."
>
> "The whole project of providing public recreation for ALL the people of Iowa now stands in the same class in importance as the other great state enterprises, public law and order, public education, public health, and public highways. But the desires of the people for state-wide recreation are at present far from satisfied. From a great deal of evidence it is clear that the citizens of Iowa are clamoring for more and better recreation facilities. The available hunting and fishing falls far short of the demand. The present system of state parks fails to meet requirements, as clearly expressed by the people, for the preservation of beautiful places, for the protection of wild life, for the enrichment of the landscape, and for active recreation such as swimming and boating, picnicking, camping, vacationing, etc."

Still today, maintaining quality fishing opportunities close to home is essential to recruit and retain anglers, as well as to sustain a strong, consistent base of fishing license buyers in Iowa (Responsive Management 2008). In 2005, Iowa DNR began a partnership with the Recreational Boating and Fishing Foundation (RBFF) to undertake and assess fishing license marketing efforts. These marketing efforts were initiated in response to declining or fluctuating fishing license sales over a period of years. This report summarizes that long history of fishing license sales - which serve as an index of participation in fishing - from 1924 to 2024 and gleans lessons learned from marketing efforts that occurred from 2005 to 2013. As most analyses were completed in regard to those marketing efforts, some time periods presented are limited to a shorter timeframe. In addition, marketing efforts that occurred after 2013 are not documented here.

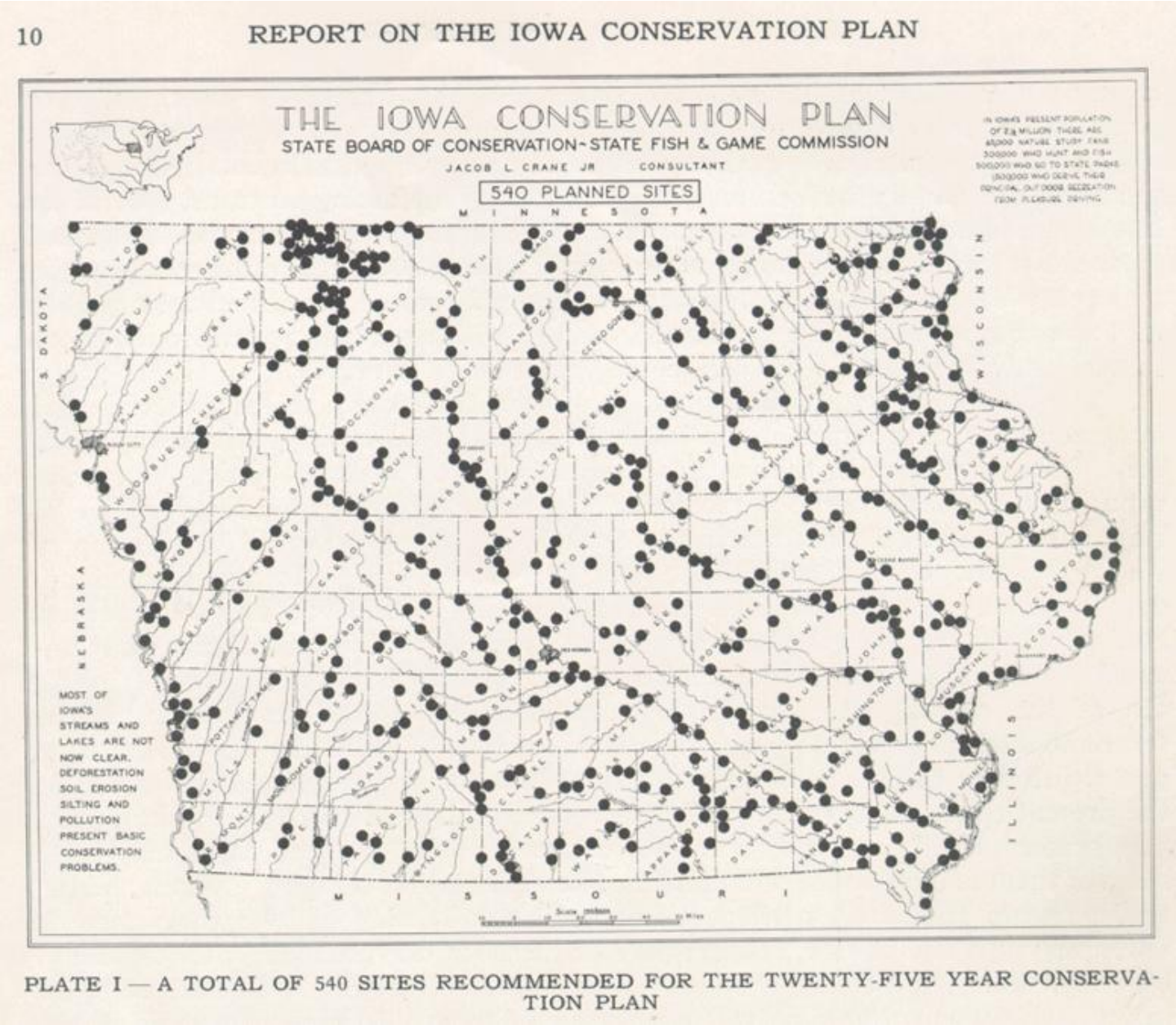

Figure 2. Planned outdoor recreation sites, 1933.

History

Records indicate that fishing licenses were first required in 1918, directed at non-resident males over 16 years of age and costing three dollars. The first license for Iowa residents came about in 1924, for males over 18 to fish in "stocked or meandered lakes", and it cost one dollar. In 1939, a law was passed that required women to have a fishing license in order to fish (Conover 1987). Fishing license fees have increased in a stepwise fashion through the years, generally keeping pace with inflation (Figure 3; Table 1). The initial fee was set at $1.00 in 1924, and has increased to $22.00 as of 2019. An annual combination hunting and fishing license was available until 1997. The year that the combination license first became available is not mentioned, but it was prior to 1942 (Conover 1987; Fleming 1962; Iowa Conservation Commission 1972). A combination license was again made available in 2013.

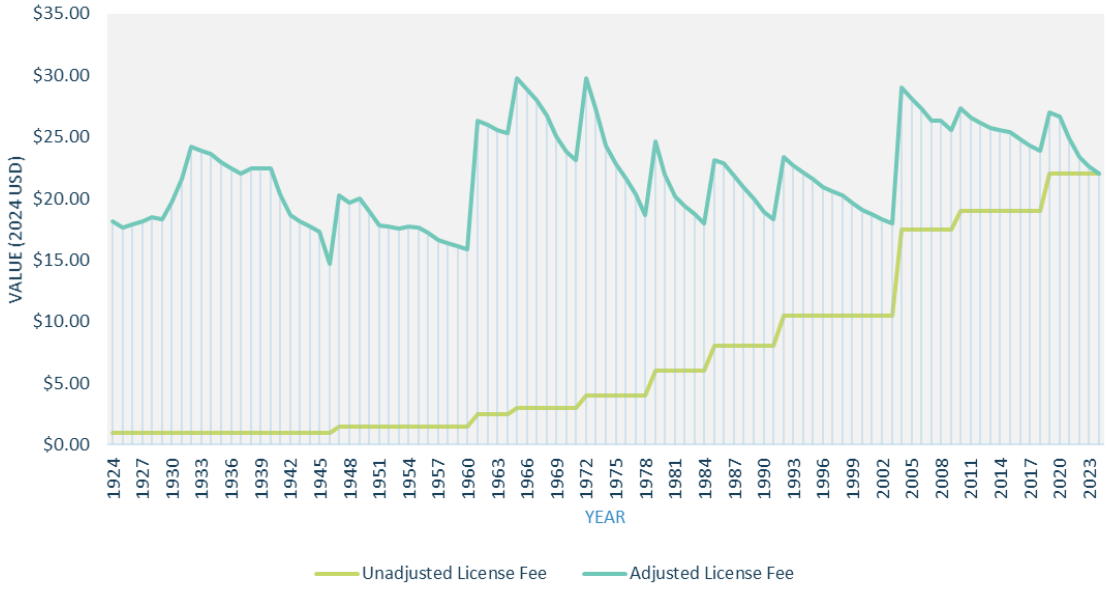

Figure 3. Fishing license fees in Iowa from 1924-2024, unadjusted and adjusted to 2024 U.S. Dollars (USD).

There is not one consistent source of the total number of fishing licenses sold in Iowa in the past. Fleming (1962, Appendix 1) provides the number of fishing, combination, and fishing plus combination licenses from 1942-1962. The document Outdoor Recreation in Iowa (Iowa Conservation Commission 1972) provides license numbers for 1946-1969, and these numbers match Fleming's totals for the overlapping years. The Iowa DNR maintains records of fishing licenses numbers from 1975-current (Fisheries Bureau Chief Joe Larscheid, personal communication). Finally, the Wildlife and Sport Fish Restoration Program of the U.S. Fish and Wildlife Service (USFWS) provides records of the number of fishing licenses sold by each state, as reported to them, from 1958 to current. However, the year that the data were reported do not match the year the data actually represent. For example, in August 2012 (Federal Fiscal Year 2013), Iowa reported data to USFWS for licenses sold in 2010 - a time lag of two years in terms of actual versus reported year. The USFWS data do not exactly match the numbers reported by any of the aforementioned sources. For the time frame of 1975-1992, the total number of fishing licenses sold matches up best assuming a one-year time lag instead of two. However, there is no gap in the data to indicate where a break in reporting mechanisms may have occurred. Regardless of the absolute accuracy of sales totals, these data sources provide us with information that can provide a useful look at the current and historic trends in fishing license sales.

Table 1. Fishing license fees in Iowa from 1924-2024, unadjusted and adjusted to 2024 U.S. Dollars.

Year	Unadjusted License Fee	Adjusted License Value
1924	$1.00	$18.18
1925	$1.00	$17.60
1926	$1.00	$17.89
1927	$1.00	$18.18
1928	$1.00	$18.49
1929	$1.00	$18.33
1930	$1.00	$19.64
1931	$1.00	$21.57
1932	$1.00	$24.18
1933	$1.00	$23.91
1934	$1.00	$23.66
1935	$1.00	$22.92
1936	$1.00	$22.45
1937	$1.00	$22.00

Year	Unadjusted License Fee	Adjusted License Value
1938	$1.00	$22.45
1939	$1.00	$22.45
1940	$1.00	$22.45
1941	$1.00	$20.37
1942	$1.00	$18.64
1943	$1.00	$18.18
1944	$1.00	$17.74
1945	$1.00	$17.32
1946	$1.00	$14.67
1947	$1.50	$20.25
1948	$1.50	$19.64
1949	$1.50	$20.00
1950	$1.50	$18.97
1951	$1.50	$17.84

Year	Unadjusted License Fee	Adjusted License Value
1952	$1.50	$17.74
1953	$1.50	$17.55
1954	$1.50	$17.74
1955	$1.50	$17.65
1956	$1.50	$17.19
1957	$1.50	$16.67
1958	$1.50	$16.42
1959	$1.50	$16.10
1960	$1.50	$15.87
1961	$2.50	$26.32
1962	$2.50	$25.94
1963	$2.50	$25.58
1964	$2.50	$25.35
1965	$3.00	$29.73
1966	$3.00	$28.82
1967	$3.00	$27.97
1968	$3.00	$26.72
1969	$3.00	$25.10
1970	$3.00	$23.83
1971	$3.00	$23.08
1972	$4.00	$29.73
1973	$4.00	$27.33
1974	$4.00	$24.31
1975	$4.00	$22.74
1976	$4.00	$21.67
1977	$4.00	$20.32
1978	$4.00	$18.64
1979	$6.00	$24.67
1980	$6.00	$21.93
1981	$6.00	$20.15
1982	$6.00	$19.41
1983	$6.00	$18.70
1984	$6.00	$17.98
1985	$8.00	$23.10
1986	$8.00	$22.86
1987	$8.00	$21.89
1988	$8.00	$20.95
1989	$8.00	$20.02
1990	$8.00	$18.86
1991	$8.00	$18.31
1992	$10.50	$23.36
1993	$10.50	$22.74
1994	$10.50	$22.13
1995	$10.50	$21.59
1996	$10.50	$20.89
1997	$10.50	$20.55
1998	$10.50	$20.21
1999	$10.50	$19.69
2000	$10.50	$19.04
2001	$10.50	$18.75
2002	$10.50	$18.32
2003	$10.50	$17.98
2004	$17.50	$29.01
2005	$17.50	$28.06
2006	$17.50	$27.36
2007	$17.50	$26.30
2008	$17.50	$26.28
2009	$17.50	$25.58
2010	$19.00	$27.36
2011	$19.00	$26.57
2012	$19.00	$26.13
2013	$19.00	$25.72
2014	$19.00	$25.53
2015	$19.00	$25.35
2016	$19.00	$24.84
2017	$19.00	$24.33
2018	$19.00	$23.87
2019	$22.00	$27.02
2020	$22.00	$26.65
2021	$22.00	$24.91
2022	$22.00	$23.39
2023	$22.00	$22.64
2024	$22.00	$22.00

License sales declined immediately after the requirement was instituted, which can likely be attributed to the outmigration of young males overseas during World War II (Figure 4). This was followed by a consistent, increasing trend that extended through the sales peak in 1975. Fleming (1962) indicates that the increase in license sales from 1942-1962 outpaced population growth in Iowa. The years 1973-1975 were the only time that license sales exceed 500,000 annually. These years were a tumultuous economic period due to the stock market crash of 1973-74 and the increased cost of oil and gasoline following the oil embargo of 1973. They also followed a very wet period in 1972-1973, and wet weather decreases license sales in Iowa, as will be discussed later in this document. Following a sales decline in the mid- to late 1970s, sales jumped again in 1979 and 1980, during the energy crisis in the US and Iowa. Declining sales through the 1980s is likely associated with the farm crisis and the outmigration of a substantial portion of Iowa's rural

population. The floods of 1993 resulted in the lowest number of licenses sold in the last two decades. Taken as a whole though, periods of stable economic times resulted in licenses sales of roughly 400,000 licenses per year, which is only slightly higher than current levels.

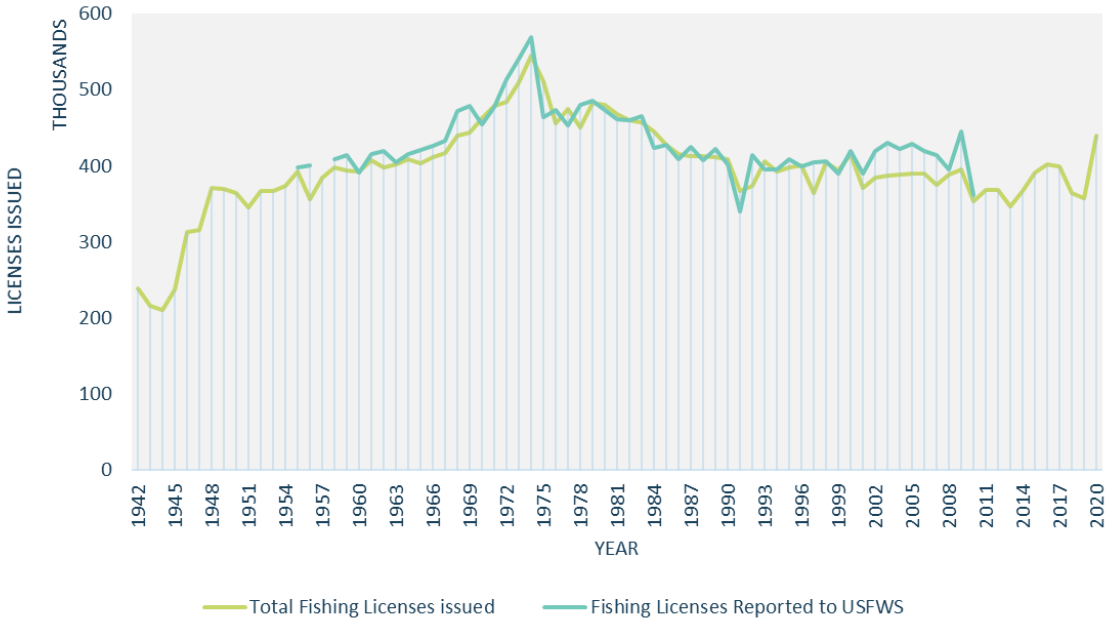

Figure 4. Total active fishing licenses in Iowa from 1942-2024, according to Iowa DNR records and reported to U.S. Fish and Wildlife Service. These counts include both residents and non-residents for all fishing license types.

The sales of all fishing licenses combined (e.g., resident, non-resident, annual, single-day) have been on a stable to gradual downward trend since 1975. Responsive Management (2013a) utilized angler surveys to determine that the weather was the most important influence on their decision to go fishing, cited by 67% of anglers. The plunge in total fishing license sales in 1993 was caused by catastrophic flooding that year throughout Iowa. The drop in 1998 coincided with the elimination of combination licenses (fishing and hunting; fishing, hunting and trapping), and poor weather in June. Similar to 1993, historic flooding in eastern Iowa in 2008 likely resulted in the drop in license sales observed that year. The graph of annual resident license sales shows that after each precipitous drop in license sales, the following year rebounds greatly, perhaps indicating a latent demand from people who had not fished the previous year. The large gap between the number of fishing licenses issued and the number reported to USFWS from 2002-2012 was a result of the resumption of selling lifetime fishing licenses in 1999, and then counting those licenses as “in effect” for multiple years thereafter. The USFWS changed its rules regarding this practice in 2013, which resulted in a drop in the number of licenses that Iowa was able to include in its count.

Iowa transitioned to an electronic license sales system in 2001, and paper licenses sold in 2000 were hand-entered into the license database. This change resulted in much better data access regarding individuals who purchased licenses and the frequency and timing of their purchases, and allowed for numerous analyses of the factors affecting fishing participation and license purchase behavior (Figure 5).

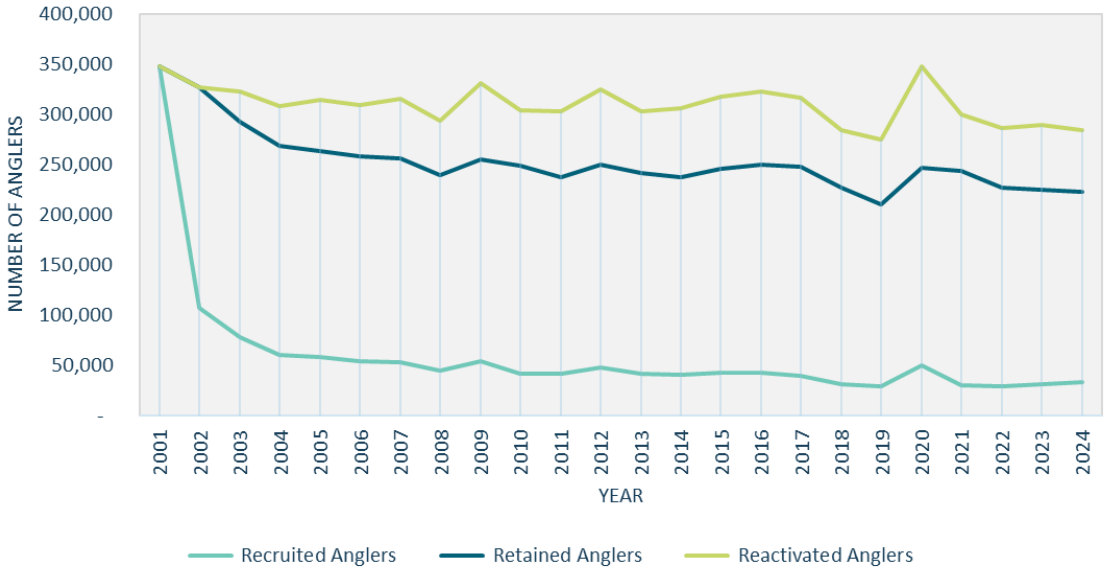

Figure 5. Total number of resident anglers in Iowa since 2001, by category based on digitally-stored license purchasing histories starting in 2001. Categories are stacked on each other, also yielding the total number of licensed anglers each year. Recruited = new angler in the database, Retained = angler who purchased a license the previous year, Reactivated = angler who purchased a license in past years but not last year

Factors Affecting Fishing Participation

As aforementioned, license sales serve as a proxy for fishing participation, although some unlicensed fishing does occur (e.g., youth fishing, private pond fishing, and illegal fishing). An analysis of annual resident license sales from 1975-2009 was performed by Southwick Associates (2010, Appendix 2). The overall trend in annual resident sales during this period was a slight increase (295,918 in 1975 to 325,328 in 2009) with substantial fluctuations. Factors exerting the greatest influence on the number of licenses sold were population (positive), unemployment rate (positive), March temperatures (positive), and annual rainfall (negative). The strongest variable in the dataset was population, which also had an overall trend of slightly increasing from 1975-2010, and generally showed the approximately 10% of Iowans purchase an annual resident fishing license. The secondary variables seemed to reveal information about the fluctuations in annual sales, particularly those dealing with economic and weather conditions. Incontrollable variables such as unemployment rate, March temperature (a harbinger of an early/late spring), and annual rainfall have value in explaining past license sales, but the difficulty in predicting these variables lessen their utility for projecting future sales.

Sales can increase while fishing participation decreases due to rapid population growth. Iowa's total population is growing faster than its angler population, leading to declines in fishing participation despite a slight increase in sales.

Population

Based on the National Survey of Participation in Hunting, Fishing and Wildlife Watching, participation declines and becomes less consistent as people get older. This survey has been conducted since 1955 by the U.S. Department of Interior, Fish and Wildlife Service and the U.S. Department of Commerce, U.S. Census Bureau (USFWS 1955). This survey coincides with the decadal national census, and is also conducted at the midpoint between each decadal census. Individualized state reports were generated since 1980 until 2016 (USFWS and USCB 1982, 1987, 1993, 1998, 2003, 2008, 2013) and provide an estimate of the percent of the state's population, by age group, who participate in fishing (Table 2).

Table 2. Percent participation in fishing by Iowans, by age group, from 1980 to 2011.

Age demographic	1980	1985	1990	1995	2000	2005	2010
6-15	48	50	55	55	50	50	50
16-17	49	29	48	27	29	22	30
18-24	32	46	23	30	22	18	24

Age demographic	1980	1985	1990	1995	2000	2005	2010
25-34	37	46	27	30	33	21	20
35-44	45	31	33	32	33	29	23
45-54	28	32	23	23	20	18	22
55-64	33	19	19	17	23	18	29
over 65	11	18	13	8	13	12	15

Recent analysis of the Iowa fishing license dataset (Appendix 3) indicates that the percent participation estimates from these surveys should be viewed with caution. Reported participation is always higher than fishing license purchases. For example, the report on hunting, fishing and wildlife watching in Iowa in 2010 (USFWS 2013) indicated that 522,000 Iowans participated in fishing, while sales data showed 395,091 individuals were licensed to fish that year. This yields a 1:1.32 ratio of licensees to participants. The 2010 survey indicated Iowa residents ages 55-64 are participating in fishing at a rate of 29%, and the 2010 census reported 398,886 Iowa residents in this age bracket. If this percent participation data were correct, it would result in around 115,000 fishing participants from this age bracket, of which roughly 87,000 would purchase a fishing license. However, license sales data paired with age demographics of Iowa residents indicates that in 2010 there were only 51,000 fishing licenses purchased by individuals in this age bracket. Iowa's license database indicates that from 2001-2010, there were 155,554 individual Iowa residents from the 55-64 age bracket (born from January 1, 1946 to December 31, 1955) who had purchased a fishing privilege during that 9-year period. This large number of individuals who had fished at some point provides some validation of the survey participation numbers, but one must assume that survey respondents were considering a time frame longer than one year in the past when answering (yes or no) if they had participated in fishing. This does reinforce the notion that fishing remains a popular pastime, with nearly 40% of Iowans in the 55-64 age bracket having participated in fishing during the past decade.

The consistency in participation by Iowa's youth (age 6-15) over the last three decades is encouraging. For adults, lack of time because of work and/or family was the leading constraint to fishing participation for anglers (Responsive Management 2008). For example, participation by the early Baby Boomer generation (born 1945-1954) declined during middle age, but increased that generation reached retirement (Figure 6).

Decadal population shifts graphs can be useful for comparing local and national trends in population change (Liesl Eathington, Director of the Iowa Community Indicators Program, Iowa State University, personal communication). These types of graphs show the percent gain/loss in a population for 10-year age groups as that population transitions to the next age bracket over the course of a decade. When compared to national population trends from 1980-1990, the impact of outmigration from Iowa during that time frame is visible (Figure 7, Panel A). While nationally there are two age groups with fewer individuals than their predecessors (15-24, Generation X; 55-64, Silent Generation), Iowa showed population losses in almost all ages groups during this decade. This population outmigration of Iowans had an immediate impact on fishing license sales, and likely a long-term impact as well.

Age demographics of Iowans shifted between the 1980 and 1990 censuses. The farm crisis of the 1980s resulted in the aforementioned outmigration of many, particularly young, Iowans. As a result, the median age of Iowans shifted from 30.0 in 1980 to 34.1 in 1990 (Table 3; State Library of Iowa 2013). This trend toward an older population continued, with the median age of Iowans also increasing in the 2000 and 2010 censuses. Population trends have generally stabilized in Iowa since the 1980s, and resemble national trends (Figure 7, Panels B and C). The lower number of individuals in Generation X is also impacting the number of children in the subsequent generations (age group 0-5 in 2000; 5-14 in 2010).

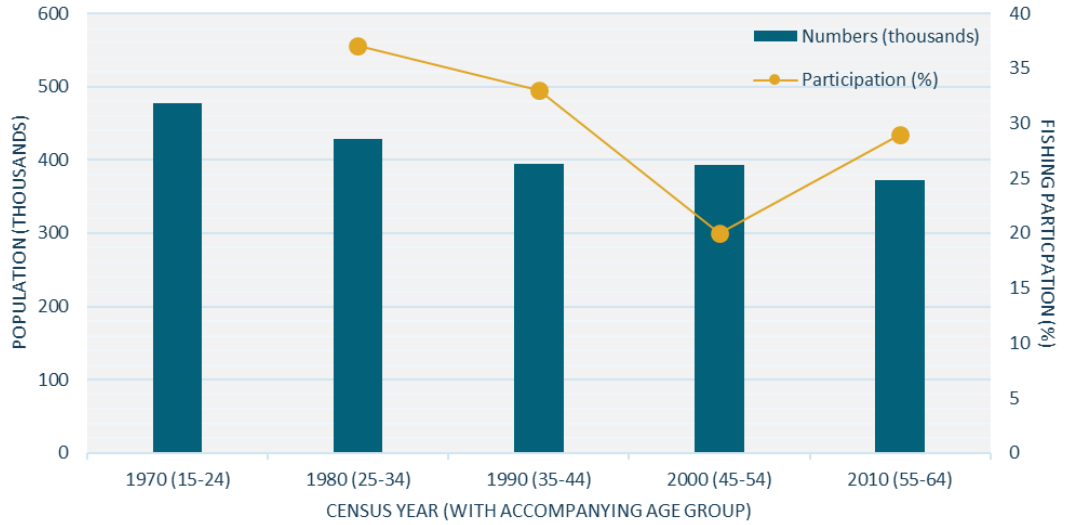

Figure 6. Number of residents and participation in fishing (%) for the early Baby Boomer generation in Iowa, by decade/age.

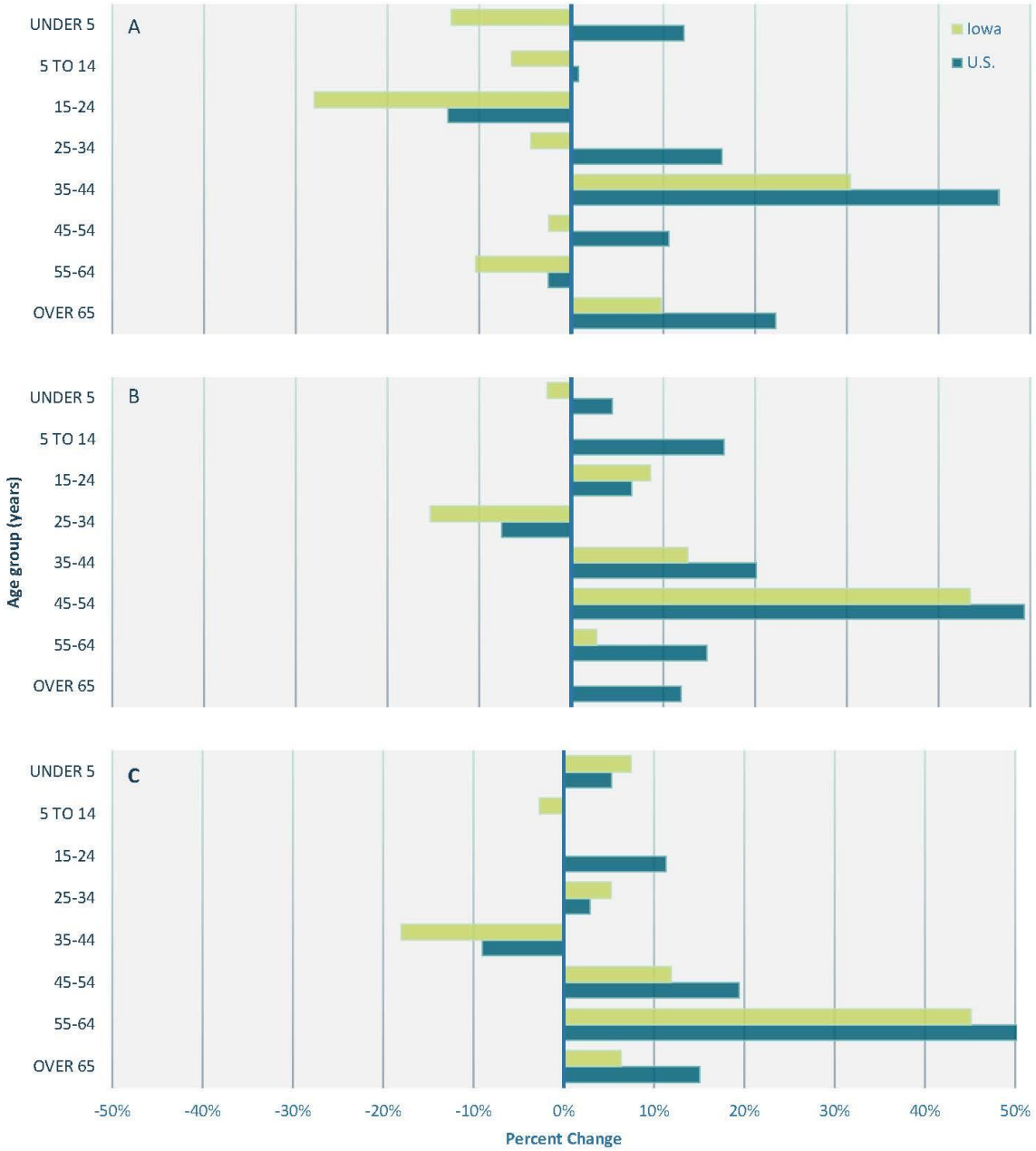

Figure 7. US and Iowa decadal population shift by age class, from 1980 to 1990 (Panel A), 1990 to 2000 (Panel B), and 2000-2010 (Panel C).

Table 3. Median age of Iowans, 1950 to 2010, according to the State Library of Iowa, State Data Center Program.

Census Year	Median Age
1950	31.0
1960	30.3
1970	28.8
1980	30.0
1990	34.1
2000	36.6
2010	38.1

An encouraging finding from this analysis is that the proportion of license holders age 25-49 exceeds the proportion of those age groups in Iowa's general population (Appendix 3; Figure 8). In other words, those age groups are over-represented in the license holder group compared to the general population. Another encouraging result is that the age group with the most license purchasers in 2012 was the 19-23 age group (individuals born between 1989-1993); for the previous decade (2002-2011), individuals born from 1959-1963 had always composed the greatest portion of license purchasers.

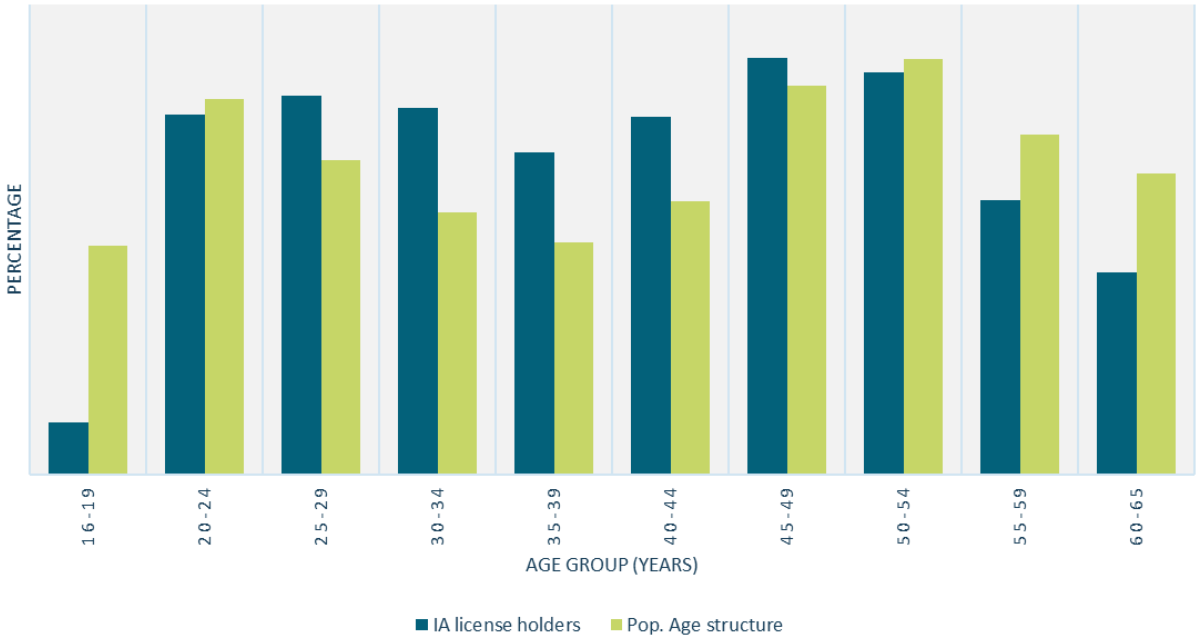

Figure 8. Percentage of fishing license holders in the annual dataset, and percentage of the general Iowa population, by age group in 2010.

Economic Conditions

As noted earlier in this report, it seems that economic downturns tend to result in increased fishing license sales in Iowa. The economic downturn from 1973-1975 coincided with the highest sales of fishing licenses in Iowa's history. The license sales during that time frame were 8% higher than the average number of licenses sold annually from 1970-1979. The energy crisis in 1979-1980 coincided with license sales that were over 9% higher than average annual license sales from 1979-1990. Lastly, the recession of 2008 resulted in license sales that were 6.5% higher than the average number of licenses sold from 2000-2010. The lone outlier from this trend is the farm crisis of the 1980s in Iowa. The 1980s saw a decline in fishing license sales, but also saw a net loss of 5% of Iowa's population. More importantly, Iowa lost 17% of residents between the ages of 15 and 34, and 10% of the children under age 15 (State Library of Iowa 2013).

This runs counter to some trends observed in other parts of the country, such as Washington and North Carolina (Responsive Management 2009, 2011), but an analysis of the recent nationwide uptick in hunting and fishing license sales attributes the primary cause to be the recession of 2008 (Responsive Management 2013a). Specifically, the top

occupational category for employed anglers nationwide is the construction trades, and economic downturns often coincide with reduced housing starts. Reduced housing starts may reduce work obligations for construction workers, which then would allow them more free time for leisure activities like fishing.

Urbanization

As early as 1962, Iowa DNR noted that Iowa was becoming increasingly urban, with "urban" areas defined as communities with over 2,500 residents, and that such change may have impacts on fishing participation (Fleming 1962). Iowa's town-based population has continued to grow since 1960, and since 1970, more than 50% of Iowans have resided in towns with more than 5,000 residents. Between 2000 and 2009, 77 of Iowa's 99 counties lost population while 9 counties increased in population by more than 5% (Eathington 2010). It is a consistent and increasing trend of population transition from rural regions to populated places throughout Iowa's history that continues today. Currently, the US census delineates "urban" as areas with more than 50,000 residents. This definition has changed through the years, but using it today means that Iowa's population is 30% urban.

Fleming (1962) and USFWS (1955) reported minimal differences in angling participation rates by place of abode. Looking at historical data from persons age 12 and over in Iowa, 23.9% of rural residents fished, 29.5% of residents of small cities fished, and 27.1% of residents from suburban and metropolitan areas fished. This pattern of participation has shifted (Table 3) to the highest participation rates occurring among rural residents. Reviewing recent license sales data (Table 4), the portion of licenses sold to residents of the various places of abode has been very consistent.

Table 4. Place of abode of Iowans, and percent participation in fishing, 2010-2011.

Place of Abode	2010 Population	Percent of Total Population	2011 Fishing Licenses Sold	Percent of Total Sales	Percent Participation
Rural Areas	641,364	21.1	76,237	28.2	11.9
Small Towns (<5,000)	648,785	21.3	63,039	23.4	9.7
Medium Towns (5,000-30,000)	680,581	22.3	59,859	22.2	8.8
Large Cities (>30,000)	1,076,127	35.3	70,771	26.2	6.6

Table 5. Place of abode of Iowans, and percent of fishing licenses sold, 2002-2011.

Place of Abode	2002 Percent of Total Sales	2006 Percent of Total Sales	2011 Percent of Total Sales
Rural Areas	28.1	28.1	28.2
Small Towns (<5,000)	23.0	23.0	23.4
Medium Towns (5,000-30,000)	22.4	22.0	22.2
Large Cities (>30,000)	26.5	26.9	26.2

The portions of licenses sold to Iowa residents recently, and the current percent participation in fishing, indicate a pattern of decreasing participation as population density increases. The demographic trend of urbanization has been documented nationally as a cause of decreased participation in hunting and fishing, coinciding with urbanization-related losses of land for hunting and fishing and access to land for hunting and fishing (Responsive Management 2013a).

Weather

Approximately 60% of residential fishing license sales occur in April, May and June. An internal Iowa DNR report (French 2006, Appendix 4) further investigated the variation in license sales from 2001-2006. This analysis indicated that weather—specifically departures from normal precipitation and temperature—significantly affected license sales during April, May, and June. French also noted that weather had no impact on license sales outside this three-month time frame for the years he analyzed.

Using this information, and regional weather summaries provided by the Iowa State Climatologist, French constructed a simple model for predicting license sales based on weather reports was constructed. Initial runs of the model (2002 - 2006) predicted statewide sales within ±7%. Modeling weather patterns and comparing results to license sales for 2007-2012 yielded similar results. The model was able to predict sales within ±8%, except for 2012. The "normal" weather

years of 2009 and 2011 were predicted within ±5%, while the model underestimated sales during the unusually warm month of May 2007. The model overestimated sales during the historically wet periods in 2008 and 2010. The model also overestimated sales during the incredibly warm spring of 2012, likely due to historically high license sales in March 2012, which then caused lower sales in the following months. License sales in March 2012 were 80,435 annual resident licenses (25% of total annual sales), which was the second highest total of any month during the period of electronic records, and was 300% higher than average March license sales.

License Cost

Conventional wisdom within the DNR is that any increase in license fees results in a decrease in license sales. Fleming (1962) indicated this pattern held true for hunting licenses, but was inaccurate for fishing licenses. The pattern Fleming observed held true until 2004, when a fishing license fee increase ($10.50 to $17.50) coincided with a decrease in licenses sold. The fee increase in 2010 ($17.50 to $19.00) also coincided with a drop in licenses sold.

French's (2006) model overestimated sales in 2004 by 6.9%, which was the largest deviation from the prediction in the original data set. It is probable that the 67% increase in the license fee influenced the reduction in sales, but overall sales for 2004 were only 3.7% below the 2001-2012 average. The 2010 license fee increase may have also had an impact on sales. April 2010 was warmer than normal, but estimated sales were nearly 9% higher than actual sales, potentially in response to the fee increase. A warm May allowed sales to catch up (model underestimated sales by 4%), but June 2010 was the wettest month in recorded history in Iowa. As a result, the model overestimated license sales by 26% for June 2010. However, 2010 overall sales were only 3.2% below the 2001-2012 average.

Assuming normal weather patterns, license sales records since 2000 indicate an average reduction in license sales of 3.4% with an increase in license cost, although that reduction is highly variable and not correlated with the *amount* of fee increase. This is similar to willingness to pay survey results for North Carolina anglers, as reported by Responsive Management (2011), but less than the 4.7% decrease estimated for a $1.00 increase in license cost by Fedler and Sweezy (1990).

Based on analysis of annual resident license sales from 1975-2009, Southwick (2010) estimated that every $1.00 increase in fishing license fees would result in a 0.2% decrease in licenses sold. A more important finding, however, was that the number of licenses sold was not responsive to price, and the cost of the license was not statistically significant.

In addition to fishing license cost, license types offered are factors within the control of the Iowa DNR. Having combination hunting-fishing licenses available and having one-day resident fishing licenses available provide alternatives to the annual resident fishing license. Southwick suggested that removing these license privileges would have the impact of increasing annual resident fishing license sales; however, that does not mean it would increase overall revenue. That particular cost-benefit analysis was not reported by Southwick Associates (2010).

Comparing Fishing Participation in Iowa to Other States

Observations in Iowa and nationwide that fishing license sales were declining in recent decades prompted many states to investigate why these changes were occurring. In addition to license sales records compiled by individual states, overall sales and participation data are documented in the aforementioned National Survey of Participation in Hunting, Fishing and Wildlife Watching. Individualized state reports have been generated since 1980 until 2016 (USFWS and USCB 1982, 1987, 1993, 1998, 2003, 2008, 2013) and provide an estimate of the percent of the state's youth and adult populations who participate in fishing. These reports allow comparisons of trends among states, and across years.

In Iowa, youth participation in fishing has been high and remarkably consistent since 1980. During that time, youth (ages 5-16) across the nation have participated at rates ranging from 48% to 55%, with a historical average of 51.1% (Table 6). Iowa has ranked between 4th and 9th among states nationally during that period, with an average rank of 7th (Appendix 5).

Table 6. Youth and adult percent participation and national rank in fishing by Iowans, 1980-2010.

Age demographic	1980	1985	1990	1995	2000	2005	2010
Youth (6-15) %	48	50	55	55	50	50	50
Youth Rank	7	6	9	7	9	4	7
Adult (17+) %	32	33	24	24	23	19	22
Adult Rank	15	15	16	10	13	15	9

Adult participation varies by age group and tends to be lower than that of youth (Table 2). Even when all age groups are aggregated, participation by adults has been variable, ranging from 19% to 33% (Table 6). The average rate of participation over that time frame was 25.2%. Iowa has ranked between 9th and 16th among states nationally during that period, with an average rank of 13th.

Adult participation in fishing in Iowa had been in decline from 1980-2005 (Table 6), and this trend was also being observed nationwide. However, an uptick was observed in the late 2000s, documented in the 2011 national survey (USFWS 2013). Using data from the 2011 survey, and by performing additional surveys, researchers discovered a variety of reasons that explained this nationwide return to angling (Responsive Management 2013a). The research was able to pinpoint ten major reasons (not necessarily in priority order) why hunting and fishing participation rates increased nationwide:

1. the economic recession,
2. higher incomes among some segments of the population,
3. hunting for meat and the locavore movement,
4. state agency recruitment and retention programs,
5. state agency access programs,
6. state agency marketing and changes in licenses,
7. current hunters and anglers participating more often,
8. returning military personnel,
9. re-engagement of lapsed hunters and anglers, and
10. new hunters and anglers, including female, suburban, and young participants.

The body of information indicates that youth in Iowa are consistently being recruited to the sport of fishing when they are young, but Iowa's rate of retention as youth transition to adulthood is less than many other states, evidenced by the drop in rank from 7th among youth to 13th among adults. Iowa's most recent angler survey (Responsive Management 2008) indicated that the majority of avid anglers started fishing before the age of 5, but most DNR Fish Iowa! programs do not begin to contact youth until middle school age. This gap in age between when youth are interested versus when exposure programs target them could be indicative of necessary programmatic changes.

The overall decline in adult fishing participation also caused internal assessments to occur, and marketing, recruitment and retention activities to be undertaken. These efforts will be reviewed in the next section. Even though declines in fishing participation have been documented in recent decades, vast numbers of Iowans have fished in their lifetimes. In comparison to many other states, Iowa is well positioned to grow its base of fishing license buyers, because the tradition of fishing is still well established here. Making changes to keep people fishing, in addition to getting people back into fishing, will likely be a fruitful undertaking.

Assessment of Iowa's Marketing Efforts

The Iowa DNR has a long history of undertaking activities to promote fishing. These efforts include fishing reports, newspaper and magazine articles, local radio shows, fishing clinics, school-based education programs and outdoor education camps. In recent years, additional endeavors have included web site development, social media posts, and fishing events to bring attention to the sport of fishing. All of these actions are targeted toward broad audiences, rather than individuals. Following the transition from paper fishing licenses to a database in 2001, Iowa DNR had the ability to track the purchasing patterns of individual customers. This resulted in vast opportunities to target marketing efforts, which began informally in 2003.

The initial efforts undertaken by Iowa DNR involved learning more about our anglers in order to proceed in a more knowledgeable manner with marketing. The initial data gathering phase was a survey of urban anglers from Linn and Polk Counties (2003), followed by an effort to geocode the addresses of all Iowa anglers (2004). The geocoded addresses were used to categorize anglers according to Tapestry groups (Esri Corporation), which include demographic and income level data, and this information was combined with purchase history data to begin the process of identifying target market groups and patterns of lapsed anglers. It was at this time that Iowa's partnership with the RBFF was formed.

Since that time, the partnership between RBFF and the Iowa DNR has been extremely productive. With high quality data, modest financial support and a willingness to experiment, a wide variety of marketing trials were tested: comparisons of urban versus rural anglers, lapsed versus non-renewed anglers, letters versus postcards, and email versus direct mail; movie theater ads; radio buys; TV spots; lottery promotions; and more. Examples of all the different mail pieces sent to anglers during these various endeavors are included in Appendix 6. Each endeavor provided new insights and oftentimes raised new questions. Much has been learned from these efforts - chiefly that marketing fishing licenses is a complex task that will likely require multiple strategies.

2005-2006 Interstate-380 Corridor Marketing Effort

Introduction

Fishing license purchasers fall into one of three broad categories: renewals by previous year purchasers, renewals by lapsed buyers, and new recruits. Marketing research indicates it is easier to retain a customer who has previously shown interest in your product than it is to recruit a new customer. Thus, a seemingly straightforward approach to yield an increase in fishing license sales would be to target lapsed anglers. To determine the scope of the lapsed angler issue, an initial analysis of fishing license data for 2004 was undertaken (Table 7).

Table 7. Resident license sales component groups for 2004 by region.

	Target Counties		Control Counties		Remaining Counties		Total Statewide	
Sales Component	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Renewals from 2003	28,169	67.6	46,662	63.8	133,435	69.2	208,266	67.7
Lapsed in 2003*	3,551	8.5	6,777	9.3	16,309	8.5	26,637	8.7
2004 Recruits	9,920	23.9	19,644	26.9	43,133	22.3	72,697	23.6
Total	41,640	100.0	73,083	100.0	192,877	100.0	307,600	100.0

Source: RBFF 2006.

*Lapsed in 2003 indicates anglers in the database that had purchased in 2002

This assessment was the first comprehensive look at fishing license sales data following the initiation of electronic sales and data storage within a database. As such, the assessment of 2002-2004 sales data revealed that between 60%-70% of annual license sales were composed of individuals who had purchased a license the previous year, <10% were individuals who had lapsed, and 20-30% were "recruits" with no previous entry in the database. Thirty-five percent of individuals who purchased a license between 2002 and 2004 lapsed in at least one of those three years. Of the fishing license purchasers in the database at that time, only 50% purchased fishing privileges regularly, and the other 50% purchased only intermittently (Fedler 2006; Appendix 7). It should be noted that in 2004, the ELSI system was still relatively new, and some "new recruits" might have been lapsed anglers from the paper license days, who had not yet purchased a license via the electronic system.

2005 Methods

The 2005 marketing effort in Iowa was built on the national Take Me Fishing advertising campaign conducted by RBFF. On a national level, RBFF placed advertisements on cable TV, radio syndicates, and in national magazines. The overall messages targeted male lapsed anglers, ages 25-54, with children. In Iowa, the 2005 marketing effort was a pilot program focused on the I-380 Corridor, specifically Linn, Johnson and Black Hawk Counties. The effort in the target counties was intended to increase fishing license sales among lapsed male anglers (purchased in 2002 or 2003, but not 2004). The control counties consisted of Cerro Gordo, Polk, Pottawattamie, Scott, Story and Woodbury. The control counties were used for comparative purposed to help determine the impact of the marketing program. These target and

control counties include most areas defined as urban, or including cities greater than 30,000 people, as outlined in Table 3; the remaining counties are mostly rural or comprised of the smaller towns and cities.

Marketing activities included both broadcast and individually targeted efforts. Broadcast efforts included creating a major fisheries presence on the DNR website, advertising at movie theaters and on the radio, distributing fishing information packets to area libraries, coordinating media coverage for Iowa fishing and Iowa DNR fishing events, partnering with the Iowa Lottery for a special fishing promotion, and distributing special fishing campaign packets to license vendors. These marketing activities occurred primarily during May and June of 2005 (Fedler 2006). The individualized effort was mailing a Family Fishing Guide and reminder postcard to selected lapsed anglers (Appendix 6). More specific details regarding these marketing activities are documented in the final report, included here as Appendix 7.

The analysis of the license database identified 24,842 individuals who were lapsed anglers in the target counties. Of these lapsed anglers, 20,513 individuals were randomly selected to receive the individualized direct mail piece, the Family Fishing Guide, while the remaining 4,329 individuals served as the direct mail control group. The Family Fishing Guide, containing fishing tips, fishing locations and testimonials, was mailed the week of May 9. The follow-up postcard was mailed the week of May 23.

In the fall of 2005, a mail survey was sent to a sample of lapsed anglers from the direct mail target group (2,500 surveys) and the direct mail control group (2,500 surveys). All of these lapsed anglers resided in the target counties. The survey was used to assess recall of advertising and direct mail activities.

2005 Results

The broadcast marketing effort resulted in a 3.2% increase in fishing license sales in target counties versus control counties (Table 8), and a 2.5% increase over the remaining counties. The purchase rates of targets versus the control population in the 2005 direct mail marketing effort showed the mail survey had no effect on purchases by lapsed anglers in the target area (Table 9).

Table 8. Individual resident fishing license sales and change by region: 2002-2005.

Region	2002 Buyers	2003 Buyers	% Change	2004 Buyers	% Change	2005 Buyers	% Change
Target Counties	43,903	43,623	-1.6	41,640	-4.5	42,899	3.0
Control Counties	75,956	75,844	-1.0	73,083	-3.6	72,905	*-0.2
Remaining Counties	204,708	202,658	-0.1	192,877	-4.8	193,810	0.5
Total Statewide	324,567	322,125	-0.8	307,600	-4.5	309,614	0.7

Source: RBFF 2006.

*this data point was incorrectly listed as a positive value in the source document

Table 9. 2005 license purchases by lapsed anglers for direct mail Target and Control Groups.

	Control			Target		
Linn-Johnson	**Sample Size**	**2005 Buyers**	**% Buyers**	**Sample Size**	**2005 Buyers**	**% Buyers**
2002 Only	1,365	245	17.9	5,745	1,032	18.0
2002 & 2003	836	317	37.9	3,409	1,276	37.4
2003 Only	1,026	229	22.3	4,048	907	22.4
Total	3,227	791	24.5	13,202	3,215	24.4
Black Hawk						
2002 Only	463	81	17.5	3,125	562	18.0
2002 & 2003	327	119	36.4	1,984	678	34.2
2003 Only	312	74	23.7	2,202	530	24.1
Total	1,102	274	24.9	7,311	1,770	24.2

The post-marketing mail survey distributed in the fall of 2005 yielded 650 usable responses. The complete details are included in Appendix 7. The post-marketing survey indicated that respondents noticed fishing advertising as follows: television 41%, magazines 27%, mail 25%, newspaper 23%, radio 11%. Individuals who renewed their fishing license in 2005 observed the advertising as follows: magazine 32%, mail 28%, television 28%, radio 25%, and newspaper 25%. The responses showed a linear relationship between the number of advertisements recalled and purchase behavior, reinforcing the marketing principle of more impressions leads to more awareness, which results in a greater likelihood of action by the consumer.

At the end of the license year, further analyses of purchases were undertaken. Aggregate purchase rates were calculated for license buying groups based on their purchase histories (Table 10). These data show that renewal rates are highest for avid anglers (purchase every year) regardless of location. Renewal rates are higher for individuals who purchased last year, versus individuals who lapsed last year, regardless of other purchase history combinations. License purchase rates were higher for all buying groups in broadcast marketing target counties versus control counties. Further analysis of this trend showed that renewals by avid anglers were 9.4% higher in target counties versus control counties, and 15.2% higher than remaining counties (Table 11). These data also show that next-year renewal rates are very consistent. Timing of purchases was also examined, and these data showed that purchase rates were 9% higher in target counties versus control counties during the two-month timeframe during which promotional and broadcast marketing activities were undertaken (Appendix 7).

Table 10. 2005 purchase rates by license buying groups.

	Target Counties			Control Counties			Remaining Counties		
License Buying Group	**Total Anglers**	**2005 Buyers**	**Percent Buyers**	**Total Anglers**	**2005 Buyers**	**Percent Buyers**	**Total Anglers**	**2005 Buyers**	**Percent Buyers**
2002, 2003 & 2004	22,174	17,952	81.0	35,214	27,899	79.2	105,331	85,692	81.4
2003 & 2004	5,995	3,590	59.9	11,448	6,615	57.8	28,104	17,075	60.8
2002 & 2004	3,551	1,885	53.1	6,777	3,414	50.4	16,309	8,488	52.0
2004 Only	9,920	3,942	39.7	19,644	7,583	38.6	43,133	17,918	41.5
2002 & 2003	6,953	2,323	33.4	12,261	3,787	30.9	32,058	10,549	32.9
2003 Only	8,517	1,848	21.7	16,967	3,310	19.5	37,103	7,851	21.2
2002 Only	11,623	1,868	16.1	22,277	3,078	13.8	50,619	7,840	15.5
Total	68,733	33,408	48.6	124,588	55,686	44.7	312,657	155,413	49.7

Source: Fedler 2006

The target counties of Black Hawk, Johnson and Linn lies within the east-central and northeast weather reporting zones used in the French (2006) weather analysis. Data from the 2005 license year was source data used in the development of the weather model. The actual sales data from the two weather zones, for the months of April, May and June, showed an 18% increase in sales from 2004. The weather model predicted a 14% increase in sales during that time frame. Statewide, the weather model underestimated sales by 6.4%. This data indicates that pleasant weather conditions, warmer and drier than average, were present during this time frame.

Table 11. License renewals by year and buying year cohort.

License Buying Cohort	Number Buying	Renewals in 2003		Renewals in 2004		Renewals in 2005	
		Number	Percent	Number	Percent	Number	Percent
Target Counties							
2002	43,903	29,127	66.9	25,725	59.0	24,028	55.1
2003	43,623	n/a	n/a	28,169	65.0	25,713	58.9
2004	41,616	n/a	n/a	n/a	n/a	27,369	65.7
Control Counties							
2002	75,956	47,475	62.5	41,993	55.3	34,727	45.7
2003	75,844	n/a	n/a	46,662	61.5	41,611	54.9

License Buying Cohort	Number Buying	Renewals in 2003		Renewals in 2004		Renewals in 2005	
		Number	Percent	Number	Percent	Number	Percent
2004	73,031	n/a	n/a	n/a	n/a	45,511	62.3
Remaining Counties							
2002	204,708	137,389	67.1	121,640	59.4	81,587	39.9
2003	202,658	n/a	n/a	133,435	66.0	121,167	59.8
2004	191,953	n/a	n/a	n/a	n/a	129,173	67.3

Source: Fedler 2006

2005 Discussion and Conclusions

Fishing license sales in Iowa are impacted by a variety of external influences. Thus, it is important to consider that license sales statewide were 0.7% higher in 2005 over 2004. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were nearly 11% higher statewide in 2005 versus 2004. In the vicinity of the target counties (21 counties in east-central and northeast Iowa), sales were nearly 19% higher. The weather model estimated that sales would be 11% higher statewide, and 14% higher in the vicinity of the target counties. This information provides a base for other comparisons, and indicates that weather did not have a deleterious impact on license sales in 2005.

License sales in 2005 in the counties targeted by marketing and promotional activities were 3.0% higher than 2004 sales, while control counties saw a -0.2% decrease in sales, and the remaining counties saw only a 0.5% increase in 2005. Additionally, purchases in target counties were 9% higher than control counties, and 4% than remaining counties, during the May-June timeframe when the promotional activities were taking place. This indicates that the broadcast marketing approaches used were successful, but still lagged behind sales levels projected by the weather model. When considered with demographic information from Table 3, that participation in rural areas and smaller towns is higher than participation in urban areas such as the target counties, the marketing resulted in a substantive response. The post-marketing survey identified a variety of marketing activities that were observed by renewing anglers. The relatively even response rates for observing these advertising types (i.e. magazine, television, radio, newspaper, mail), and the linear relationship between the number ads observed and renewal rate, indicate that a multi-pronged marketing approach is effective. RBFF and Iowa DNR invested heavily in localized advertising in 2005, and this was coupled with an Iowa Lottery fishing-centric game and advertising campaign. These activities resulted in raised awareness regarding fishing activities during the marketing period.

An unanticipated result of the marketing effort was that renewals by avid, multi-year purchasers were 9.4% higher in the target area than the control area. This indicates that even the most consistent, core constituents are vulnerable to lapsing, but that providing a reminder to go fishing seemingly can influence a purchase response. Also, renewals by the previous year's anglers are the largest source of license renewals. Thus, expending effort to retain these customers is vitally important.

2006 Methods

Prior to the launch of the 2006 marketing campaign, the DNR engaged a market research firm to facilitate focus groups of lapsed anglers. Participants told researchers they needed two primary things: more reminders and encouragement to go fishing and more information about where they will have a high probability of catching fish locally. This information was used to refine the pilot program for 2006 (Fedler 2007).

The 2006 marketing effort was again a locally focused program paired with the national Take Me Fishing campaign conducted by RBFF. In Iowa, the target area remained the I-380 Corridor, and the control counties were the same as in 2005. In addition to national efforts designed to lure back lapsed anglers, the 2006 program in Iowa also included a specific demographic target (males, 25-54), and acknowledged the importance of renewals and recruits. Broadcast marketing activities included weekly e-mail fishing forecasts, radio advertising on 4 top local stations, family fishing events, additions to the Iowa DNR website, license vendor packets and media coverage. Individual marketing activities were also undertaken. Targeted anglers were sent a customized letter from their local fisheries biologist providing information on top area fishing spots, fishing tips, maps and a promotion of the e-mail information distribution system

(Appendix 6). All marketing activities occurred May through July 2006. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 8 (Fedler 2007).

The analysis of the license database identified 23,675 individuals in the target counties who lapsed in 2005, 15,586 anglers who renewed in 2005, and 8,817 newly recruited anglers in 2005. Of these license purchasers, 15,000 individuals who had not yet purchased their 2006 fishing license as of May 15 were selected to receive the individualized direct mail piece: 6,300 from the renewal group, 6,700 from the lapsed group, and 2,000 from the new recruits group. The remaining 33,078 individuals served as the control group. The direct mail piece was a customized letter which listed top local fishing spots, maps, fishing tips, and information about how to sign up for the weekly fishing report email. The letter was mailed immediately following the May 15 data query.

In the fall of 2006, a mail survey was sent to a random sample of anglers who had been sent the direct mail piece (5,000 surveys). The survey was again used to assess recall of advertising and direct mail activities, and it also asked questions regarding motivations for fishing and constraints to fishing participation.

2006 Results

The results of the 2006 broadcast marketing effort, for license sales through July 31, were that license purchases by lapsed anglers in the target counties was 0.9% than in control counties (lift). Lift for renewing anglers (those who had purchased in 2005, but not yet as of May 15, 2006) was 3.5% higher in the target area (Table 12). However, there was no difference in overall license sales between target counties and control counties, both saw a 0.2% decrease in sales through July from 2005-2006 (Table 13). The purchase rates of the control population versus the broadcast marketing targets and the direct mail targets indicated a positive effect on sales for both strategies in 2006 (Table 14).

Table 12. Comparison of 2006 resident license purchases for component groups for target and control counties.

	Control Counties			Target Counties		
	Total Eligible	2006 Sales	Purchase Rate	Total Eligible	2006 Sales	Purchase Rate
2005 Renewals	72,904	42,955	58.9%	42,523	26,516	62.4%
2005 Lapsed	49,703	8,588	17.3%	25,570	4,652	18.2%
2006 Recruits	na	15,909	100.0%	na	8,016	100.0%

Source: Fedler 2007

Note: Fishing license sales data for January 1 through July 31

Table 13. Resident fishing license sales and year to year percent change: January - July, 2002-2006.

Counties	2002	2003		2004		2005		2006	
	Number	Number	% Chg.	Number	% Chg.	Number	% Chg.	Number	% Chg.
Target	40,792	40,119	-1.6%	38,079	-5.1%	39,417	3.5%	39,328	-0.2%
Control	70,576	69,780	-1.1%	66,895	-4.1%	67,835	1.4%	67,672	-0.2%
Remaining	191,303	189,202	-1.1%	179,230	-5.3%	183,408	2.3%	180,100	-1.8%
Total	302,671	299,101	-1.2%	284,204	-5.0%	290,660	2.3%	287,100	-1.2%

Source: Fedler 2007

The post-marketing mail survey distributed in the fall of 2006 yielded 592 usable responses. The complete details are included in Appendix 9. The post-marketing survey indicated over 60% of respondents felt receiving local fishing tips from the DNR would be very beneficial. Respondents most often recalled “Take Me Fishing” radio ads, followed by the direct mail letter (32%) and family fishing events at local parks (29%). Nearly 38% of respondents recalled seeing the biologist letter, and 62% of those individuals felt it contained very useful information. However, few respondents (13%) indicated the letter influence their decision to buy a fishing license. Responses indicate the advertising was most effective in influencing the renewal group to buy a license, and that group also had the highest level of recall regarding the biologist letter.

At the end of the marketing program, further analyses of purchases were undertaken. Aggregate purchase rates were calculated for license buying groups based on their purchase histories (Table 15). These data show that renewal rates are highest for avid anglers (purchase every year) in both the control and target populations. Renewal rates are higher for individuals who purchased last year, versus individuals who lapsed last year, regardless of other purchase history combinations. License purchase rates were higher for all buying groups in broadcast marketing target counties versus control counties. Further analysis of this trend showed that renewals by avid anglers were 5.2% higher in target counties versus control counties.

Table 14. Effect of advertising and direct mail on resident fishing license sales in target and control counties: May 16 through July 31, 2006.

Buyer Groups	Control No Advertising or Direct Mail			Target					
				Advertising Only			Advertising with Direct Mail		
	Potential Buyers	2006 Buyers	Renewal Rate	Potential Buyers	2006 Buyers	Renewal Rate	Potential Buyers	2006 Buyers	Renewal Rate
2005 Renewals									
2003, 2004 & 2005	14,841	6,990	47.1%	4,966	2,595	52.3%	3,588	1,967	54.8%
2004 & 2005	7,292	2,450	33.6%	2,372	837	35.3%	1,496	575	38.4%
2003 & 2005	5,370	1,616	30.1%	1,965	601	30.6%	1,199	398	33.2%
Total	27,503	11,056	40.2%	9,303	4,033	43.4%	6,283	2,940	46.8%
2005 Lapsed									
2003 & 2004	10,538	1,775	16.8%	3,821	661	17.3%	1,998	468	23.4%
2004 Only	14,383	1,650	11.5%	5,106	674	13.2%	1,999	328	16.4%
2003 Only	21,015	1,780	8.5%	8,052	782	9.7%	2,699	371	13.7%
Total	45,936	5,205	11.3%	16,979	2,117	12.5%	6,696	1,167	17.4%
2005 Recruits	15,066	3,281	21.8%	6,821	1,627	23.9%	1,996	526	26.4%
Total	15,066	3,281	21.8%	6,821	1,627	23.9%	1,996	526	26.4%
Overall Total	**88,505**	**19,542**	**22.1%**	**33,103**	**7,777**	**23.5%**	**14,975**	**4,633**	**30.9%**

Source: Fedler 2007

Table 15. Estimated license sales resulting from the 2006 marketing program.

Buyer Groups	Control	Advertising Only		Advertising & Direct Mail		Advertising Only		Advertising & Direct Mail		Total
	Renewal Rate	Potential Buyers	Renewal Rate	Potential Buyers	Renewal Rate	Net Rate	Net Sales	Net Rate	Net Sales	Net Sales
2005 Renewals										
2003, 2004 & 2005	47.1%	4,966	52.3%	3,588	54.8%	5.2%	258	7.7%	276	534
2004 & 2005	33.6%	2,372	35.3%	1,496	38.4%	1.7%	40	4.8%	72	112
2003 & 2005	30.1%	1,965	30.6%	1,199	33.2%	0.5%	10	3.1%	37	47
Total							308		385	693
2005 Lapsed										
2003 & 2004	16.8%	3,821	17.3%	1,998	23.4%	0.5%	19	6.6%	132	151
2004 Only	11.5%	5,106	13.2%	1,999	16.4%	1.7%	87	4.9%	98	185
2003 Only	8.5%	8,052	9.7%	2,699	13.7%	1.2%	97	5.2%	140	237
Total							203		370	573
2005 Recruits	21.8%	6,821	23.9%	1,996	26.4%	2.1%	143	4.6%	92	235
Total							654		847	1,501

Source: Fedler 2007

The target counties of Black Hawk, Johnson and Linn lie within the east-central and northeast weather reporting zones used in the French (2006) weather analysis. The data from the 2006 license year was source data used in the development of the weather model. The actual sales data from the two weather zones, for the months of April, May and June, showed a 3.7% increase in sales from 2005. The weather model predicted a 1.7% decrease in sales during that time frame, and the model overestimated sales by 0.4%. This data indicates that weather conditions might have had a slightly negative impact on license sales during this time frame.

The cost of the 2006 program was $31,664 (Iowa mailing costs only), and the benefit from "lift" sales was estimated to be $25,517 in license sales and $15,175 in Federal Aid, totaling $40,692 and a positive return on investment (RBFF 2007).

2006 Discussion and Conclusions

As mentioned previously, fishing license sales in Iowa are impacted by a variety of external influences. Thus, it is important to consider that license sales statewide were 1.1% lower in 2006 than 2005. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were nearly 4.9% higher statewide in 2006 versus 2005. In the vicinity of the target counties (21 counties in east-central and northeast Iowa), sales were nearly 3.7% higher. The weather model estimated that sales would be 1.4% lower statewide, and 1.7% lower in the vicinity of the target counties. This information provides a base for other comparisons, and indicates that weather had a mildly negative impact on license sales in 2006.

Target county overall license sales fell by 0.2% in 2006, which was the same as the decline in license sales in control counties (-0.2%). License sales in the remaining counties fell by 1.8% in 2006. The data indicates that the marketing approaches used were successful, since the rate of decline was less that the statewide rate, and less than expected according to the weather model. Considering that urban residents are less likely to participate in fishing than small town and rural residents, the urban-targeted marketing resulted in a substantive response. The post-marketing survey identified a variety of marketing activities that were observed by renewing anglers. The response rates for observing advertising (i.e. radio, direct mail, local fishing events), and the previously reported relationship between the number ads observed and renewal rate, indicate that a multi-pronged marketing approach is effective. The high recall rate of radio advertising indicates that targeting top local stations is an effective mechanism for reaching constituents. The 2006 marketing program also reinforced the concept that anglers with longer and more consistent purchase histories respond best to marketing efforts. As in 2005, advertising activities performed a very important service in getting anglers to renew their fishing license, rather than lapse.

2007 Metropolitan Area Marketing Effort

Methods

The 2007 marketing effort targeted male and female license buyers from seven counties (Black Hawk, Dallas, Linn, Polk, Pottawattamie, Scott and Warren) who had purchased one or more fishing licenses between 2004 and 2006. Individuals were split into groups based on which year(s) license purchases had occurred, and both general advertising and direct mail marketing efforts were undertaken (Table 16). Broadcast marketing activities included weekly e-mail fishing forecasts, radio advertising on 5 top local stations, family fishing events, additions to the Iowa DNR website and media coverage. Individual marketing activities were also undertaken. From this pool, 59,450 past license buyers were selected to receive the direct mail piece, and 12,990 past license buyers would only be exposed to radio and print advertising. The direct mail piece was sent out May 15 (Appendix 6). Fedler (2008) did not indicate what the content of the mail piece was, or which 8 counties were included in the Large & Small (L&S) County Control group. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 9.

Individual license purchasers from ELSI were assigned to ESRI Tapestry Groups following geocoding of their addresses from ELSI, and Tapestry Groups were utilized as an additional grouping unit for data analysis (Fedler 2008). A commonly held assumption by marketers and demographers is that a tendency exists for people with similar tastes, lifestyles, and behaviors to cluster into similar neighborhoods and exhibit a comparable response to specific marketing messages. To make this valuable for fishing license renewal and sales efforts, the key is to identify which segments characterize potential purchasers and which of those are most likely to respond to targeted recruitment efforts. The RBFF reports utilized Community Tapestry, by ESRI, to combine lifestyle demography with spatial geography to classify previous purchasers based on their street address.

Table 16. Sample distribution by group, by sex.

	Advertising and Direct Mail		Advertising Only		L&S County Control		Statewide Control	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Males								
2004 Only	13,276	22.3	2,930	22.6	5,354	22.9	15,305	23.2
2004, 2005	8,209	13.8	1,682	12.9	3,118	13.4	8,876	13.4
2004, 2005 & 2006	13,590	22.9	2,975	22.9	5,181	22.2	14,313	21.7
2004 & 2006	4,145	7.0	1,010	7.8	1,701	7.3	4,834	7.3
2005 Only	10,428	17.5	2,267	17.5	4,152	17.8	11,693	17.7
2005 & 2006	6,165	10.4	1,328	10.2	2,403	10.3	6,912	10.5
2006 Only	3,638	6.1	798	6.1	1,424	6.1	4,154	6.3
Total	59,450	100.0	12,990	100.0	23,333	100.0	66,087	100.0
Females								
2004 Only	4,044	23.1	2,890	23.1	3,030	23.1	9,703	23.1
2004, 2005	1,911	10.9	1,363	10.9	1,431	10.9	4,579	10.9
2004, 2005 & 2006	3,920	22.4	2,800	22.4	2,937	22.4	9,409	22.4
2004 & 2006	1,080	6.2	776	6.2	823	6.3	2,605	6.2
2005 Only	3,426	19.6	2,450	19.6	2,571	19.6	8,232	19.6
2005 & 2006	2,144	12.3	1,538	12.3	1,609	12.3	5,166	12.3
2006 Only	970	5.5	680	5.4	722	5.5	2,310	5.5
Total	17,495	100.0	12,497	100.0	13,123	100.0	42,004	100.0

Source: Fedler 2008

2007 Results

The 2007 marketing campaign was analyzed separately for the male and female target audiences by Fedler (2008) and will be presented similarly here. The results presented are totals through the end of the marketing timeframe, not annual sales totals. Statewide license sales for the 2007 marketing timeframe show a 1.2% decrease in purchases by males (Table 17), but a 0.1% increase over 2006 in the target counties. License sales to females decreased by 0.3% statewide, and decreased 0.6% in target counties. For male anglers, the results of the 2007 marketing effort were that the lift in license purchases in the target counties was 2.3% higher than control counties, and this number includes both lapsed anglers and renewals (Table 18). For female anglers, results showed there was no significant difference in license purchases between target counties and control counties. The complete details are included in Appendix 9.

Table 17. Resident male and female fishing license sales: 2002-2007.

	Number of License Buyers						Change 2006-07
	2002	2003	2004	2005	2006	2007	
Males							
Target Counties	78,504	76,877	74,352	75,091	75,940	76,014	0.1%
L&S Counties	41,700	42,121	40,269	39,932	40,210	39,400	-2.0%
Statewide Counties	130,091	129,080	124,398	124,031	124,184	122,087	-1.7%
State Total	250,295	248,078	239,019	239,054	240,334	237,501	-1.2%
Females							
Target Counties	22,304	22,180	20,564	21,289	22,132	22,001	-0.6%
L&S Counties	11,547	11,608	10,948	11,028	11,540	11,472	-0.6%
Statewide Counties	38,332	38,114	35,459	36,755	37,431	37,452	0.1%
State Total	72,183	71,902	66,971	69,072	71,103	70,925	-0.3%

Source: Fedler 2008

Table 18. Male and female fishing license purchases by county group and Lift from marketing program.

	Did Not Buy Before May 15	Bought May 15 or Later	Percent Buying May 16 or After	Lift over L&S County Controls	Lift over Statewide Controls
Males					
Target Counties	72,440	21,587	29.8	2.3	2.5
Small & Large County Control	23,333	6,418	27.5	--	--
Statewide Control	66,087	18,067	27.3	--	--
Females					
Target Counties	23,420	5,264	22.48	0.7	0.1
Small & Large County Control	13,123	2,864	21.82	--	--
Statewide Control	44,220	9,897	22.38	--	--

Source: Fedler 2008

Groups of anglers, as defined by purchase history, were analyzed according to their response to the broadcast marketing effort and the direct mail marketing effort for males (Table 19) and Females (Table 20).

Table 19. Male license purchases by marketing and control groups and Lift for direct mail and advertising.

Years Buying License	Did Not Buy Before May 15	Bought May 15 or Later	Percent Buying May 15 or After	Lift over L&S County Controls	Lift over State Controls
2004 Only					
Advertising w/DM	13,276	1,630	12.3	2.2	2.1
Advertising w/o DM	2,930	424	14.5	4.4	4.3
Small & Large County Control	5,354	540	10.1	--	--
Statewide Control	15,305	1,562	10.2	--	--
2004 & 2005					
Advertising w/DM	8,209	2,042	24.9	4.3	1.6
Advertising w/o DM	1,682	424	25.2	4.6	1.9
Small & Large County Control	3,118	642	20.6	--	--
Statewide Control	8,876	2,065	23.3	--	--
2004, 2005 & 2006					
Advertising w/DM	13,590	7,969	58.6	7.0	8.1
Advertising w/o DM	2,975	1,718	57.7	6.1	7.2
Small & Large County Control	5,181	2,677	51.7	--	--
Statewide Control	14,313	7,238	50.6	--	--
2004 & 2006					
Advertising w/DM	4,144	1,599	38.6	3.8	4.1
Advertising w/o DM	1,010	408	40.4	5.6	5.9
Small & Large County Control	1,701	592	34.8	--	--
Statewide Control	4,834	1,669	34.5	--	--
2005 Only					
Advertising w/DM	10,428	1,814	17.4	1.4	1.9
Advertising w/o DM	2,267	387	17.1	1.0	1.6
Small & Large County Control	4,152	666	16.0	--	--

Years Buying License	Did Not Buy Before May 15	Bought May 15 or Later	Percent Buying May 15 or After	Lift over L&S County Controls	Lift over State Controls
Statewide Control	11,693	1,809	15.5	--	--
2005 & 2006					
Advertising w/DM	6,165	2,631	42.7	3.6	3.4
Advertising w/o DM	1,328	572	43.1	4.0	3.8
Small & Large County Control	2,403	940	39.1	--	--
Statewide Control	6,912	2,712	39.2	--	--
2006 Only					
Advertising w/DM	3,638	1,135	31.2	5.9	6.8
Advertising w/o DM	798	256	32.1	6.7	7.7
Small & Large County Control	1,424	361	25.4	--	--
Statewide Control	4,154	1,012	24.4	--	--
Summary					
Advertising w/DM	59,450	18,820	31.7	4.2	4.4
Advertising w/o DM	12,990	4,189	32.2	4.7	4.9
Small & Large County Control	23,333	6,418	27.5	--	--
Statewide Control	66,087	18,067	27.3	--	--

Source: Fedler 2008

Table 20. Female license purchases by marketing and control groups and Lift for direct mail and advertising.

Years Buying License	Did Not Buy Before May 15	Bought May 15 or Later	Percent Buying May 16 or After	Lift over L&S County Controls	Lift over Statewide Controls
2004 Only					
Advertising w/DM	4,927	425	8.6	1.1	-0.4
Advertising w/o DM	4,297	371	8.6	1.1	-0.4
Small & Large County Control	3,646	274	7.5	--	--
Statewide Control	11,645	1,050	9.0	--	--
2004 & 2005					
Advertising w/DM	2,086	428	20.5	0.8	0.6
Advertising w/o DM	1,363	276	20.2	0.6	0.4
Small & Large County Control	1,591	313	19.7	--	--
Statewide Control	5,044	1,003	19.9	--	--
2004, 2005 & 2006					
Advertising w/DM	2,641	1,455	55.1	4.4	5.1
Advertising w/o DM	1,727	897	51.9	1.2	1.9
Small & Large County Control	1,945	986	50.7	--	--
Statewide Control	6,157	3,080	50.0	--	--
2004 & 2006					
Advertising w/DM	1,053	338	32.1	0.3	1.7
Advertising w/o DM	697	217	31.1	-0.6	0.8
Small & Large County Control	819	260	31.7	--	--
Statewide Control	2,545	772	30.3	--	--

Years Buying License	Did Not Buy Before May 15	Bought May 15 or Later	Percent Buying May 16 or After	Lift over L&S County Controls	Lift over Statewide Controls
2005 Only					
Advertising w/DM	3,944	491	12.4	1.0	-1.2
Advertising w/o DM	2,548	308	12.1	0.6	-1.5
Small & Large County Control	2,996	343	11.4	--	--
Statewide Control	9,606	1,310	13.6	--	--
2005 & 2006					
Advertising w/DM	1,870	672	36.0	-1.1	-0.4
Advertising w/o DM	1,234	431	34.9	-2.2	-1.4
Small & Large County Control	1,377	511	37.1	--	--
Statewide Control	4,598	1,673	36.4	--	--
2006 Only					
Advertising w/DM	974	296	30.4	6.8	8.9
Advertising w/o DM	631	154	24.4	0.8	2.9
Small & Large County Control	749	177	23.6	--	--
Statewide Control	2,409	519	21.5	--	--
Summary					
Advertising w/DM	17,495	4,105	23.5	1.6	1.1
Advertising w/o DM	12,497	2,654	21.2	-0.6	-1.2
Small & Large County Control	13,123	2,864	21.8	--	--
Statewide Control	42,004	9,407	22.4	--	--

Source: Fedler 2008

Additionally, the summarized results of the broadcast marketing effort and the direct mail marketing effort in the target counties are listed at the bottom of these tables. The results for angler groups show that purchase rates are highest for males with more complete and more recent purchase histories. There were no differences among buying groups in response to direct mail (Table 25), and minimal differences between targeted counties (Appendix 9).

The broadcast advertising program, though, resulted in a lift of 4.9% over the control counties for male purchasers. One target county, Pottawattamie, did not receive any radio advertising, and the response rates in that county were not different from the counties that did receive radio advertising. Breaking out the target population of males into smaller age groups (25-34, 35-44, 45-54) showed no differences in their response to advertising (Fedler 2008).

For females, the buying groups that included the most recent and the most frequent purchases responded best to direct mail, but showed no differences in regard to the general advertising program. Differences were seen between target counties, but the responses oscillated between slightly positive and slightly negative, with the slight positive responses seen in Black Hawk, Dallas, and Linn counties (Appendix 9). The overall advertising program, though, resulted in a lift of 1.1% over the control counties for female purchasers. When breaking out the target population of females into smaller age groups (25-34, 35-44, 45-54), the 25-34 age group purchased at the lowest rate, but all groups showed a slight positive response to direct mail (Fedler 2008).

Male and female anglers were assigned to Tapestry groups according to their geocoded mailing address. For males, the Tapestry classifications yielded only slight results, and the results showed the same patterns as target/control advertising. Females also showed mixed results in this analysis. Small sample sizes do suggest that the results should be interpreted with caution. Fedler indicates that “it does appear that the Tapestry segments may have some usefulness as the advertising program had a significant effect overall” (Appendix 9).

Further analysis was undertaken to build a predictive model to classify the likelihood of groups of anglers to purchase a license. Past purchase history of fishing licenses was used in this effort, but Fedler indicated that other data such as demographics, hunting license purchase history, and boat ownership are also valuable variables to include in this type of modeling. Greater details are included in Appendix 9, but neither the equations used nor the coefficients calculated are presented. Fedler used purchase history from 2002-2005 to develop the algorithm and coefficients to predict 2006 license sales. For males, the model classified nearly 74% of the non-buyers correctly, while 60% of the buyers were classified correctly. For females, about 70% of the predicted non-buyers were classified correctly, while two-thirds of the buyers after May 15 were classified correctly.

The target counties in 2007 were spread across the state, so the weather model is not a great tool to assess differences between target and control areas. The 7 target counties were located in 5 of the 9 climate reporting zones for which license sales are estimated. The actual statewide sales data for the months of April, May and June, showed a 5.5% decrease in sales from 2006. The weather model predicted a 13% decrease in sales during that time frame, and the model underestimated sales by 8.2%. These percentages, actual sales and predicted sales, were exactly the same for the 5 zones with target counties and the 4 other zones. The overall data indicate that weather conditions should have had a negative impact on license sales during this time frame. April was cooler and wetter than average, May was warmer and wetter than average, and June had normal temperatures and was drier than average.

There was no program cost or return on investment reported for this effort (Fedler 2008).

2007 Discussion and Conclusions

Fishing license sales were 1.0% lower in 2007 than 2006 during the marketing effort evaluation period. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were 5.5% lower statewide in 2007 versus 2006. The weather model estimated that sales would be 13% lower statewide. This information provides a base for other comparisons, and indicates that weather should have had a negative impact on license sales in 2007.

Target county overall license sales decreased by 0.1% in the 2007 marketing period, while sales declined by 1.7% in control counties. License sales in the remaining counties fell by 1.3% in 2007. The data indicates that the marketing approaches used were successful, since the rate of decline was less that the statewide rate, and less than expected according to the weather model. Considering that urban residents are less likely to participate in fishing than small town and rural residents, the urban-targeted marketing resulted in a substantive response.

In 2007, males and females responded favorably to the marketing program. However, males responded to general advertising, with negligible response to direct mail. Females responded to the direct mail campaign, with negligible response to general advertising. The positive response by males to general advertising (radio) indicates that targeting top local radio stations is an effective mechanism for reaching male constituents. This conclusion is slightly confounded by the lack of a difference in response rates among counties, since Pottawattamie County did not receive radio advertising. The positive response by females to direct mail advertising (biologist letter) indicates that providing localized information is an effective mechanism for reaching female constituents. Post marketing analysis indicate that predictive models could help narrow the scope of direct mail programs, and also may also identify geographic areas where aggregations of buyers open to advertising messages reside.

The 2007 marketing program again reinforced the concept that anglers with longer and more consistent purchase histories respond best to marketing efforts. As in 2005 and 2006, advertising activities performed a very important service in getting anglers to renew their fishing license, rather than lapse.

2008-2013 Statewide Lapsed Angler and Non-renewed Angler Marketing Effort

The evaluation reports for 2005-2007 were completed by Anthony Fedler, Human Dimensions Consulting. Starting in 2008, these reports were prepared by Southwick Associates for RBFF. Lapsed anglers are individuals who did not purchase in the previous year, but do have a previous purchase history. A non-renewed angler is an individual who purchased a license the previous year, but had not yet purchased at the commencement of the marketing program for the current year.

2008 Methods

The 2008 marketing effort expanded to a statewide program, and the RBFF campaign focused solely on lapsed anglers. Lapsed anglers are individuals who did not purchase in the previous year, but do have a previous purchase history. The 2007 program found few differences according to gender, so the 2008 effort did not differentiate between males and females. RBFF's national 2008 "Take Me Fishing" program included local radio and online advertising, specifically radio advertising on 61 local stations statewide and online advertising on 3 prominent Iowa websites. Iowa DNR broadcast marketing activities included weekly e-mail fishing forecasts, family fishing events, additions to the Iowa DNR website and corresponding media coverage. The individualized marketing included two separate direct mailings, a postcard followed up by a self-mailer (Appendix 6), which coincided with the timeframe of the national broadcast marketing. In addition, Iowa DNR conducted a paired marketing effort targeting non-renewed anglers that coincided with the lapsed angler effort. A non-renewed angler is an individual who purchased a license the previous year, but had not yet purchased at the commencement of the marketing program for the current year.

The target audience of lapsed anglers were classified into tiers (previously called buying groups) based upon their past purchase history (Table 21), and into Tapestry groups based upon their place of residence. Program budget allowed all anglers in Tiers 1-5 to be included in the target audience, less a 10% control group per tier as requested by DNR. The remaining 40,065 anglers were sent the initial postcard mailing on April 28, 2008. The message on the postcard was to encourage lapsed anglers to once again become active. On May 27, a self-mailer was sent to 36,696 anglers from the original target population who had not yet purchased a license. Iowa DNR offered an incentive with each mailing. The first postcard offered a one-year subscription to Iowa Outdoors for the first 500 respondents. The second incentive included a drawing for a free trip to Honey Creek Resort State Park. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 10 (RBFF 2009a).

Table 21. Definition of Lapsed Tiers.

Lapse Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2003	2004	2005	2006	2007		
1	x	x	x	x		17,537	18.4
2		x	x	x		7,718	8.1
3	x		x	x		5,163	5.4
4			x	x		12,777	13.4
5	x	x		x		6,175	6.5
6		x		x		5,970	6.3
7				x		39,927	41.9

Source: RBFF 2009a

The target audience of non-renewed anglers (N=222,424) were also classified into tiers based upon their past purchase history (Table 22), and into Tapestry groups based upon their place of residence. Program budget allowed for a total of 60,000 pieces to be sent at the time of the second mailing, May 27. With nearly 37,000 lapsed anglers being sent the second mailing, around 23,000 non-renewed anglers in Tiers A-F were selected to be included in the target audience. These anglers were sent a postcard mailing on May 27, urging them to renew their fishing license. On June 24, a second postcard was sent to 16,827 anglers from the non-renewed target population who had not yet purchased a license. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 11 (RBFF 2009b). The RBFF reports did not include an evaluation of control groups compared to the target population of the marketing effort. Iowa DNR requested that control groups be removed from the target population, and the response rate of the control groups were evaluated by DNR.

Table 22. Definition of Non-renewed Tiers.

Non-renewed Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2003	2004	2005	2006	2007		
A	x	x	x	x	x	52,534	23.6
B		x	x	x	x	12,786	5.7
C	x		x	x	x	7,223	3.2
D			x	x	x	14,285	6.4
E	x	X	x	x*	x*	14,972	6.7
F	x*	x*		x	x	8,957	4.0
G	All other sales combinations				x	111,667	50.2

*x = a license was purchased one of the years indicated for that tier
Source: RBFF 2009ba

2008 Results

The results of the 2008 marketing effort include only license sales through June 30, which was the end of the marketing period. Statewide fishing license sales through June 30 decreased 15.9% from 2007 to 2008 (Table 23). The results presented by RBFF included a calculation of response rate from treatment groups (Table 24), the information from the control group was provided by Iowa DNR. The cumulative response rate for both mailings was 15.6%, and the response rate from the control group was 14.5%. Individuals with the most consistent purchase history (Tier 1) responded at the highest rate, while individuals with less consistent and less recent purchases responded more poorly than the control group that received no marketing. The overall lift from the lapsed angler marketing effort was 1.1% (Table 30).

Table 23. Cumulative Annual Resident License Sales through June 30.

Year	2002	2003	2004	2005	2006	2007	2008	07-08 % Change
License Sales	279,397	276,825	253,312	270,570	265,070	270,818	233,765	-15.9%

Table 24. Lapsed Angler Response Rate, by Priority Tier.

Response by Tier	# in Reconciled Mail List	Response After 1st Mailing		Marginal Response From 2nd Mailing		Cumulative Response After 2nd Mailing	
		#	Response Rate (%)	#	Response Rate (%)	#	Response Rate (%)
Tier 1	13,152	1,479	11.2	960	7.3	2,439	18.5
Tier 2	6,055	530	8.8	416	6.9	946	15.6
Tier 3	4,129	368	8.9	271	6.6	639	15.5
Tier 4	10,350	752	7.3	526	5.1	1,278	12.3
Tier 5	5,000	450	9.0	282	5.6	732	14.6
Total	38,686	3,579	9.3	2,455	6.3	6,034	15.6
Control	4,945	418	8.5	297	6.0	715	14.5

Sources: RBFF 2009a, Iowa DNR

The results of the 2008 marketing effort to non-renewed anglers include only license sales through July 27, which was four weeks after anglers received the second mailing. Statewide fishing license sales through July 27 decreased 12.7% from 2007 to 2008 (Table 25). The results presented by RBFF included a calculation of response rate from treatment groups (Table 26), the information from the control groups was provided by Iowa DNR. Due to small sample sizes, one control group for Tier A was identified, and a second control group for Tiers B-F was selected. The cumulative response rate for both mailings was 34.7%. The response rate from Tier A anglers was 38.2%, and the response rate from the control group for Tier A was 33.6%, yielding a lift of 4.6%. The response rate from anglers in Tiers B-F was 27.4%, and the response rate from the control group for Tiers B-F was 26.0%, yielding a lift of 1.4%. Individuals with the most consistent

purchase history (Tier A) responded at the highest rate, while individuals with less consistent and less recent purchases responded slightly better than the control group that received no marketing.

Table 25. Cumulative Annual Resident License Sales through June 30.

Year	2002	2003	2004	2005	2006	2007	2008	07-08 % Change
License Sales	304,708	300,950	281,906	293,633	290,641	295,566	262,342	-12.7%

Table 26. Non-renewed Angler Response Rate, by Priority Tier.

Response by Tier	# in Reconciled Mail List	Response After 1st Mailing		Marginal Response From 2nd Mailing		Cumulative Response After 2nd Mailing	
		#	Response Rate (%)	#	Response Rate (%)	#	Response Rate (%)
Tier A	13,264	2,906	21.9	2,167	16.3	5,073	38.2
Tier B	1,333	229	17.2	191	14.3	420	31.5
Tier C	794	143	18.0	98	12.3	241	30.4
Tier D	1,485	201	13.5	191	12.9	392	26.4
Tier E	1,743	222	12.7	216	12.4	438	25.1
Tier F	1,019	132	13.0	124	12.2	256	25.1
Total	19,638	3,833	19.5	2,987	15.2	6,820	34.7
Tier A Control	1,836	403	21.9	214	11.7	617	33.6
Tiers B-F Control	1,000	163	16.3	97	9.7	260	26.0

Sources: RBFF 2009a, Iowa DNR

Response rates from lapsed angler marketing were calculated for each Tapestry group. Five Tapestry groups were identified that had response rates higher than the 15.6% average response rate for lapsed anglers, and four of those five have fishing identified as part of their lifestyle (Table 27). Aggregating Tapestry segments according to urban/rural splits showed that the small Metro Cities group had the highest response rate. The rural and small-town groups that comprised a large portion of the population (17,694 lapsed anglers, or 46% of total) also had cumulative response rates higher than the average of 15.6% (Table 28). Control groups were not identified or selected for the Tapestry group analysis.

Table 27. Significant* Tapestry Segments with Above-Average Response Rates.

Tapestry Name	Urban/ Rural	# in Reconciled Mail List	Response After 1st Mailing		Marginal Response From 2nd Mailing		Cumulative Response After 2nd Mailing	
			#	Rate (%)	#	Rate (%)	#	Rate (%)
Heartland Communities**	Small Towns	3,811	371	9.7	321	8.4	692	18.2
Prairie Living**	Rural	5,616	572	10.2	436	7.8	1,008	17.9
Aspiring Young Families**	Metro Cities	859	100	11.6	48	5.6	148	17.2
Midlife Junction	Suburban	2,424	240	9.9	156	6.4	396	16.3
Rustbelt Traditions**	Urban Outskirts	4,809	459	9.5	309	6.4	768	16.0

Source: RBFF 2009a

*Accounting for greater than 1.5% of mail list.

**Indicates Tapestry segments identified with fishing as a common characteristic of their lifestyle.

Table 28. Response Rate by Level of Urbanization.

Urbanization Group	# in Reconciled Mail List	Response After 1st Mailing		Marginal Response From 2nd Mailing		Cumulative Response After 2nd Mailing	
		#	Rate (%)	#	Rate (%)	#	Rate (%)
Urban Centers	93	9	9.7	7	7.5	16	17.2
Metro Cities	3,794	347	9.1	781	20.6	1,128	29.7
Urban Outskirts	7,241	673	9.3	455	6.3	1,128	15.6
Suburban	9,837	861	8.8	576	5.9	1,437	14.6
Small Town	4,484	420	9.4	352	7.9	772	17.2
Rural	13,210	1,268	9.6	878	6.6	2,146	16.2

Source: RBFF 2009a

Response rates from non-renewed angler marketing were calculated for each Tapestry group. Four Tapestry groups were identified that had response rates higher than or equal to the 34.7% average response rate for non-renewed anglers, and all have fishing identified as part of their lifestyle (Table 29). Control groups were not identified or selected for the Tapestry group analysis.

Table 29. Significant* Tapestry Segments with Above-Average Response Rates.

Tapestry Name	Urban/ Rural	# in Reconciled Mail List	Response After 1st Mailing		Marginal Response From 2nd Mailing		Cumulative Response After 2nd Mailing	
			#	Rate (%)	#	Rate (%)	#	Rate (%)
Prairie Living	Rural	5,200	1,126	21.7	831	16.0	1,957	37.6
Heartland Communities	Small Towns	3,254	701	21.5	485	14.9	1,186	36.4
Rooted Rural	Rural	400	76	19.0	68	17.0	144	36.0
Green Acres	Rural	2,095	396	18.9	330	15.8	726	34.7

Source: RBFF 2009a

*Accounting for greater than 1.5% of mail list. These Tapestry segments are all identified with fishing as a common characteristic of their lifestyle.

The actual statewide sales data for the months of April, May and June, showed a 12% decrease in sales from 2007. The weather model predicted a 3% increase in sales during that time frame, but it was still projected to be a very low sales year. The weather model overestimated sales by 7.9%. The overall data indicate that weather conditions should have had a negative impact on license sales during this time frame. April, May and June were all cooler and wetter than average.

The cost of the 2008 lapsed angler marketing program was $32,443 for Iowa mailing costs and $49,148 for RBFF advertising. With a lift of 1.1%, the sales of 67 licenses resulting in an income of $1,139 can be attributed to the lapsed angler marketing program. The lapsed angler marketing program lost $31,303. These figures do not match the RBFF report, but they did not calculate return on investment based on lift; calculating return on investment based on response rates is an invalid assumption.

The cost of the 2008 non-renewed angler marketing program was $12,623 for Iowa mailing costs. With a lift of 4.6% for Tier A anglers, and 1.4% for anglers from the remaining tiers, the sales of 258 licenses resulting in an income of $4,386 can be attributed to the non-renewed angler marketing program. This angler marketing program lost $8,237. This figure does not match the RBFF report, but they did not calculate return on investment based on lift.

2008 Discussion and Conclusions

Fishing license sales were 15.9% lower in 2008 than 2007 through the lapsed angler marketing effort evaluation period, and 12.7% through the non-renewed angler marketing evaluation period. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were 12% lower statewide in 2008 versus 2007. The weather model estimated that sales would be 3% higher statewide, but would still be very low overall. This

information provides a base for other comparisons, and indicates that weather should have had a negative impact on license sales in 2008.

The response rate for the lapsed angler effort was low, but was similar to response rates from lapsed anglers in previous years. The response rate for non-renewed anglers was also lower than previous years, but was still more than 100% higher than the rate from lapsed anglers. Lift from the marketing effort to lapsed anglers was only 1.1%, while the marketing to non-renewed Tier A anglers was 4.6%, and the lift from the remaining tiers of non-renewed anglers was 1.4%. Iowa DNR required the inclusion of control groups, as well as continued marketing to non-renewed anglers. Both of these addition steps were vital in determining the effectiveness and value of the 2008 efforts.

No post-marketing survey was conducted in 2008 to assess the impact of the broadcast and individualized marketing efforts. Previous survey efforts concluded that males respond positively to radio advertising, and that females responded well to direct mail advertising (biologist letter) that providing localized information. The mail pieces used in 2008 were not biologist letters providing specific information, however. The similarity of 2008 response rates to previous years indicates that marketing activities may have had a similar impact to previous years in generating angler responses, potentially mitigating further losses in license sales. There is no available data to assess the actual impact.

The return on investment for the 2008 program was a negative $39,540. However, utilizing the likelihood of responses rates from the previous efforts, the 60,000 direct mail pieces could have been distributed to mostly Tier A non-renewed anglers. If they had responded at a similar rate to those targeted this year, Iowa DNR would have seen income of $46,920, and a positive return on investment of at least $1,854 from the marketing effort. Since the marketing effort included 3 separate mailings, the profit might have been even higher if only two mailings had been sent, and they had been better targeted.

An additional note about 2008 is that fishing license sales were the lowest in that year of any year in the 2000s, so it is also the lowest of any year for which electronic data exists. License sales totals from 2008 are comparable to 1993, which was the wettest year on record. It was also similar to 1998, which followed the elimination of combination licenses, and which had an extremely wet and cool June. Of particular interest, however, is that during such a low sales year, 67% of licenses sold were to anglers who had purchased in 2007, and 62% of 2007 purchasers returned in 2008. These percentages are very similar to previous years (Table 14) with higher sales totals, so it does not seem that renewing anglers compose a higher volume of sales during low-volume years.

The 2008 marketing program reinforced the concept that anglers with longer and more consistent purchase histories respond best to marketing efforts.

2009 Methods

The 2009 marketing effort continued as a statewide program, and the RBFF campaign focused solely on lapsed anglers. Lapsed anglers are individuals who did not purchase in the previous year, but do have a previous purchase history. RBFF's national 2009 "Take Me Fishing" program included local radio, print and online advertising, specifically radio advertising on 11 top ranked local stations statewide. Iowa DNR broadcast marketing activities included weekly e-mail fishing forecasts, family fishing events, additions to the Iowa DNR website and corresponding media coverage. The individualized marketing included two separate direct mailings, an initial postcard followed up by a second postcard (Appendix 6), which coincided with the timeframe of the national broadcast marketing. In addition, Iowa DNR conducted a paired marketing effort targeting non-renewed anglers that coincided with the lapsed angler effort. A non-renewed angler is an individual who purchased a license the previous year, but had not yet purchased at the commencement of the marketing program for the current year.

The target audience of lapsed anglers (N=101,636) were classified into tiers (previously called buying groups) based upon their past purchase history (Table 30), and into Tapestry groups based upon their place of residence. Program budget allowed all anglers in Tiers 1-7 to be included in the target audience, less a 10% control group per tier, plus enough Tier 8 anglers to reach a total of 75,000 lapsed anglers. The remaining 26,643 anglers were the control group.

Table 30. Definition of Lapsed Tiers.

Lapse Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2004	2005	2006	2007	2008-9		
1	x	x	x	x		18,660	16.9
2		x	x	x		9,131	8.2
3	x		x	x		4,792	4.3
4			x	x		14,004	12.6
5	x	x		x		6,726	6.1
6		x		x		7,317	6.6
7	x			x		6,597	6.0
8				x		43,482	39.3

Source: RBFF 2010a

After correcting the mailing list for individuals who had purchased a fishing license, the target audience of 68,199 lapsed anglers was sent the initial postcard mailing on May 8, 2009. The message on the postcard was to encourage lapsed anglers to once again become active. On June 19, a second postcard was sent to 61,707 anglers from the original target population who had not yet purchased a license. Iowa DNR offered an incentive of a drawing for a free fishing weekend trip to Honey Creek Resort State Park. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 12 (RBFF 2010a).

The target audience of non-renewed anglers (N=297,242) were also classified into tiers based upon their past purchase history (Table 31), and into Tapestry groups based upon their place of residence. The target audience of non-renewed anglers predicted to have the highest probability of lapsing was selected to receive direct mail marketing. The anglers with the highest probability of lapsing were from Tiers F-H. Program budget allowed for 50,000 pieces to be sent to the target groups in Tiers F and G, less a 10% control group per tier, plus enough Tier H anglers to reach a total of 50,000 non-renewed anglers. These mailings coincided with the mailings to the lapsed angler targets. Anglers were sent the initial postcard mailing on May 8, urging them to renew their fishing license. On June 19, a second postcard was sent to 34,089 anglers from the non-renewal target population who had not yet purchased a license. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 13 (RBFF 2010b).

Iowa participated with 8 other states in an online survey of lapsed anglers conducted by RBFF in the winter of 2009, the complete details of which are included in Appendix 14 (RBFF 2010c). This survey was a follow-up to the 2009 lapsed angler marketing effort, and was used to assess recall of advertising and direct mail activities. The survey also asked questions regarding motivations for fishing, and tested preferences about various marketing messages and images. The survey was emailed to 1,116 Iowa anglers, and the emails were provided to RBFF by Iowa DNR.

Table 31. Definition of Non-renewed Tiers.

Non-renewed Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2005	2006	2007	2008	2009		
A	x	x	x	x		125,822	42.3
B		x	x	x		26,551	8.9
C	x		x	x		14,590	4.9
D			x	x		30,410	10.2
E	x	x		x		13,925	4.7
F		x		x		11,021	3.7
G	x			x		11,735	4.0
H				x		63,190	21.3

Source: RBFF 2010b

2009 Results

The results of the 2009 marketing effort include only license sales through August 3, which was the end of the assessment period. Statewide fishing license sales through August 3 increased 17.2% from 2008 to 2009 (Table 32). The cumulative response rate for both mailings was 22.2%, and the response rate from the control group was 20.4%. Individuals with the most consistent purchase history (Tier 1) responded at the highest rate. The overall lift from the lapsed angler marketing effort was 1.86% (Table 33).

The results of the 2009 marketing effort to non-renewed anglers also include license sales through August 3. Statewide fishing license sales through August 3 increased 17.2% from 2008 to 2009. The cumulative response rate for both mailings was 26.9%, and the response rate from the control group was 26.0% (Table 34). Individuals with the more recent and more consistent purchase history of the target population (Tier G) responded at the highest rate, while individuals with less consistent and less recent purchases responded similarly to the control group that received no direct marketing. The overall lift from the non-renewed angler marketing effort was 0.83%.

Table 32. Cumulative Annual Resident License Sales through August 3.

Year	2003	2004	2005	2006	2007	2008	2009	08-09 % Change
License Sales	305,703	287,534	297,570	293,588	299,792	267,002	313,204	17.2%

Table 33. Lapsed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
1	13,027	4,260	32.7	1,449	416	28.7	3.99	520
2	6,680	1,758	26.3	727	166	22.8	3.48	233
3	3,574	901	25.2	396	116	29.3	-4.08	-146
4	10,462	2,168	20.7	1,179	213	18.1	2.66	278
5	5,096	1,315	25.8	571	137	24.0	1.81	92
6	5,682	1,115	19.6	622	111	17.9	1.78	101
7	5,132	993	19.4	575	105	18.3	1.09	56
8	18,546	2,655	14.3	19,483	2,647	13.6	0.73	135
Total	68,199	15,165	22.2	25,002	5,094	20.4	1.86	1,269

Sources: RBFF 2010a

Table 34. Non-renewed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
F	7,289	2,247	30.8	826	250	30.3	0.56	41
G	7,664	2,306	30.1	848	240	28.3	1.79	137
H	24,382	6,016	24.7	23,281	5,602	24.1	0.61	149
Total	39,335	10,569	26.9	24,955	6,498	26.0	0.83	327

Sources: RBFF 2010b

Response rates and lift from lapsed angler marketing were calculated for each Tapestry group. Six Tapestry groups were identified that accounted for more than 1.5% of the mailing list, but only 3 of those had a lift higher than the 3.13 break-

even threshold (Table 35). There were numerous Tapestry groups with small sample sizes that exceeded the 3.13 lift threshold (Appendix 12). Aggregating Tapestry segments according to urban/rural splits showed that the small Urban Centers group had the highest lift, and was the only group with a lift above 3.13 (
Table 36). The Rural group had the highest response rate to the advertising, but also the highest purchase rate from the control group.

Table 35. Significant (>1.5% of mail list) Lapsed Angler Tapestry Segments with Response Rates and Lift.

Tapestry Name	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Enterprising Professionals	1,165	256	22.0	478	76	16.0	5.98	70
Green Acres*	4,025	934	23.2	1,426	270	18.9	4.27	172
Midlife Junction	4,029	851	21.1	1,582	278	17.6	3.55	143
Prairie Living*	9,903	2,336	23.6	3,472	724	20.9	2.72	270
Rustbelt Retirees	3,623	806	22.3	1,230	240	19.5	2.72	98
Rustbelt Traditions*	8,515	1,961	23.0	3,104	636	20.5	2.53	216

*Indicates Tapestry segments identified with fishing as a common characteristic of their lifestyle.
Sources: RBFF 2010a

Table 36. Lift by Urban/Rural Characteristic of Lapsed Angler Neighborhoods

Tapestry Name	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Urban Centers	162	27	16.7	65	8	12.2	4.46	7
Metro Cities	7,075	1,462	20.7	2,768	517	18.7	2.00	142
Urban Outskirts	12,797	2,876	22.5	4,825	1,000	20.7	1.74	223
Suburban	17,574	3,794	21.6	6,589	1,284	19.5	2.10	370
Small Towns	7,574	1,638	21.6	2,689	553	20.6	1.06	80
Rural	22,994	5,362	23.3	8,049	1,702	21.1	2.18	501

Sources: RBFF 2010a

Response rates from non-renewal angler marketing were calculated for each Tapestry group. No large (exceeding 1.5% of mailing list) Tapestry groups were identified that had lift higher than or equal to the break-even threshold of 3.38 (Table 37), however, a number of the smaller groups did. Aggregating Tapestry segments according to urban/rural splits showed that the small Urban Centers group had the highest lift, but it did not exceed the break-even threshold of 3.38 (Table 38). The larger 4 groups all had high response rates (>26%) to the direct mail advertising, but also the highest purchase rate from the control group, and thus low lift rates (<1.0).

Table 37. Non-renewed Angler Tapestry Segments by Lift and Response Rate.

Tapestry Name	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Main Street, USA	158	51	32.3	80	13	16.6	15.67	25
City Dimensions	398	100	25.1	244	33	13.4	11.73	47
Old and Newcomers	372	92	24.7	243	35	14.5	10.22	38
Prosperous Empty Nesters	450	114	25.3	290	48	16.7	8.64	39

Tapestry Name	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Crossroads*	584	153	26.2	400	74	18.6	7.65	45
Young and Restless	197	44	22.3	112	18	15.9	6.48	13
Sophisticated Squires	550	162	29.5	349	85	24.3	5.11	28
Rustbelt Traditions*	4,767	1,333	28.0	2,936	755	25.7	2.26	108
Prairie Living*	6,163	1,771	28.7	3,811	1,016	26.7	2.08	128

*Indicates Tapestry segments identified with fishing as a common characteristic of their lifestyle.
Sources: RBFF 2010b

Table 38. Lift by Urban/Rural Characteristic of Non-renewed Angler Neighborhoods.

Urbanization Group	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Urban Centers	110	23	20.9	72	13	18.2	2.74	3
Metro Cities	3,846	932	24.2	2,558	551	21.5	2.69	104
Urban Outskirts	7,372	2,003	27.2	4,565	1,218	26.7	0.50	37
Suburban	9,798	2,582	26.4	6,398	1,645	25.7	0.65	63
Small Towns	4,653	1,262	27.1	2,979	805	27.0	0.09	4
Rural	13,537	3,762	27.8	8,374	2,255	26.9	0.87	117

Sources: RBFF 2010b

The actual statewide sales data for the months of April, May and June, showed a 15.8% increase in sales from 2008. The weather model predicted a 3% increase in sales during that time frame, but only underestimated total sales by 4.4%. The overall data indicate that weather conditions should have had a positive impact on license sales during this time frame. April was slightly cooler and wetter than average, but May and June were equivalent to long term averages for temperature and precipitation.

The post-marketing online survey distributed in the winter of 2009 yielded 3,246 usable responses from 9 states. The complete details are included in Appendix 13. The results were aggregated across states, and weighted to balance the different number of responses from each state. The post-marketing survey indicated that respondents noticed fishing advertising as follows: magazines 81%, television 52%, mail 33%, radio 18%. Radio advertising was recalled by 16.6% of individuals in the direct marketing treatment group, and by 20.3% of anglers in the direct marketing control group. Magazine advertising had the highest recall among respondents, but 33% of respondents indicated that the magazine ad left them with a negative impression. Television, radio, and direct mail all left less than 2% of respondents with a negative impression.

The cost of the 2009 lapsed angler marketing program was $36,784 for Iowa mailing costs and $22,673 for RBFF advertising. With a lift of 1.86%, the sales of 1,269 licenses resulting in an income of $21,883 can be attributed to the lapsed angler marketing program. The lapsed angler marketing program lost $14,901.

The cost of the 2009 non-renewed angler marketing program was $22,587 for Iowa mailing costs. With a lift of 0.83%, the sales of 341 licenses resulting in an income of $5,549 can be attributed to the non-renewed angler marketing program. This angler marketing program lost $17,038.

2009 Discussion and Conclusions

Fishing license sales were 17.2% higher in 2009 than 2008 through the lapsed angler marketing effort evaluation period. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales

were 15.8% higher statewide in 2009 versus 2008. The weather model estimated that sales would be only 3% higher statewide, but the model only underestimated total sales by 4.4%. July of 2009 was cooler than average, which may have had a positive impact on fishing license sales through the remainder of the marketing effort. Southwick Associates (2010) suggests that fishing license sales in Iowa reactive positively to a down economy, and Iowa was in the midst of the Great Recession in 2009, thus economic factors may have also positively influenced license sales in 2009. This information provides a base for other comparisons, and indicates that weather and economy should have had a positive impact on license sales in 2009.

The response rate for the lapsed angler effort was low, but was similar to response rates from lapsed anglers in previous years. Response rate and lift were highest for anglers with the most consistent and most recent purchases (Tier 1, and progressively less as numbers increase). The response rate for non-renewed anglers was also lower than previous years. Lift from the marketing effort to lapsed anglers was only 1.86%, while lift from the marketing to non-renewed was 0.83%. The marketing to non-renewed anglers in 2009 was a substantial departure from previous efforts. All previous work indicated the highest lift and highest response rates were from anglers with the most consistent and most recent purchases (Tier A, and progressively less as you move down the alphabet). This effort targeted anglers most likely to lapse (Tiers F-H), rather than anglers most likely to respond (Tiers A-C, Table 36). The response rates of non-renewed anglers in Tiers F-H in 2009 (Table 40) resembles the response rates from the similar Tiers E-F in 2008 (Table 32). The focus on re-recruitment of lapsed anglers, and preventing lapsing of anglers least likely to renew, seemingly prevented inclusion of those anglers that had demonstrated the greatest responsiveness to the marketing efforts. This was definitely a factor leading to the low lift rates for the non-renewed angler program in 2009.

The results of post-marketing survey conducted in 2009 indicated that the RBFF campaign did not leave a lasting impression with anglers. This is not surprising since the advertising campaign finished in June, and the survey was distributed in December. Since the report is an aggregate of responses from 9 states, results are not necessarily directly applicable to Iowa anglers or advertising campaigns. The results of previous survey efforts, which concluded that males respond positively to radio advertising, and that females responded well to direct mail advertising, should be viewed as more applicable to Iowa anglers.

The return on investment for 2009 was a negative $14,901 for Iowa for the lapsed angler effort. RBFF paid for the entire cost of the non-renewed angler effort, which lost $17,038. The lapsed angler effort yielded more insights in regard to targeted marketing, and continued to improve its efficiency. The non-renewed angler effort showed that targeting anglers most likely to lapse is less profitable than targeting anglers most likely to respond.

An additional note regarding 2009 is that it was a “normal” weather year, with a poor economy. License sales from 2009 were the highest since 2001, and the highest since the fee increase in 2004. Thus, 2009 may be the standard against which we measure other years, even though the weather was average.

The 2009 marketing program reinforced the concept that anglers with longer and more consistent purchase histories respond best to marketing efforts.

2010 Methods

The 2010 marketing effort continued as a statewide program, and included both lapsed anglers and non-renewed anglers. RBFF’s national 2010 broadcast marketing program was much reduced in scope in Iowa in 2010, and aired only on small ESPN-affiliated AM radio stations in Iowa. Iowa DNR broadcast marketing activities included an additional radio buy on two Des Moines radio stations, weekly e-mail fishing forecasts, family fishing events, additions to the Iowa DNR website and corresponding media coverage. The individualized marketing included two direct mailings (Appendix 6) coinciding with the RBFF’s radio advertising campaign. The target audience of 75,000 lapsed and non-renewed anglers was split into 3 groups of 25,000 each to test two different incentives versus a reminder postcard with no incentive. Iowa DNR targeted 60% of the direct mailing (45,000) to lapsed anglers, and 40% of the mailing to non-renewed anglers (30,000).

The target audience of lapsed anglers (N=84,009) were classified into tiers based upon their past purchase history (Table 39), and into Tapestry groups based upon their place of residence. The 2009 marketing effort identified five Tapestry

segments that showed negative lift (control group outperformed treatment group), and 18 segments that showed statistically significant positive lift. Program budget allowed all anglers in Tiers 1-5 to be included in the target audience, excluding those anglers from Tapestry groups that showed negative lift in 2009. Additional lapsed anglers from Tiers 7 and 8, in the 18 Tapestry segments that showed statistically significant positive lift in 2009, were included in the treatment group.

The target audience of non-renewed anglers (N=244,487) were also classified into tiers based upon their past purchase history (Table 40), and into Tapestry groups based upon their place of residence. The target audience of non-renewed anglers was randomly drawn from all tiers, excluding the five Tapestry segments with negative lift in 2009. Tier H was limited to a maximum of 2,000 anglers.

Table 39. Definition of Lapsed Tiers.

Lapse Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2005	2006	2007	2008	2009-10		
1	x	x	x	x		13,096	15.6
2		x	x	x		6,654	7.9
3	x		x	x		3,985	4.7
4			x	x		10,711	12.7
5	x	x		x		4,949	5.9
6		x		x		5,190	6.2
7	x			x		5,402	6.4
8				x		34,022	40.5

Source: RBFF 2011

Table 40. Definition of Non-renewed Tiers.

Non-renewed Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2006	2007	2008	2009	2010		
A	x	x	x	x		69,569	21.2
B		x	x	x		21,609	6.6
C	x		x	x		11,003	3.3
D			x	x		26,167	8.0
E	x	x		x		17,256	5.2
F		x		x		14,529	4.4
G	x			x		13,137	4.0
H				x		71,217	21.7

Source: RBFF 2011

A target audience of 88,211 anglers was found to have valid in-state addresses, and a control group of 15% of anglers per tier (13,232) was excluded from the target population. The remaining 69,599 anglers were split evenly among the three postcard types. The initial postcard mailing occurred on May 22, 2010. The three types of postcards were: 1) a reminder to purchase a fishing license with no incentive and outdoor imagery, 2) a family-theme based card with a sweepstakes offer for a weekend at Honey Creek Resort, and, 3) an additional outdoor-themed postcard with a rebate offer from Shakespeare (Appendix 6). On June 20, the same postcards were sent a second time to 61,570 anglers from the original target population who had not yet purchased a license. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 15 (RBFF 2011).

2010 Results

The results of the 2010 marketing effort include only license sales through August 5, which was the end of the assessment period. Statewide fishing license sales through August 5 decreased 8.3% from 2009 to 2010 (Table 41). For lapsed anglers, the cumulative response rate for both mailings was 13.8%, and the response rate from the control group was 13.4% (Table 42). Lapsed anglers with the most consistent purchase history (Tier 1) responded at the highest rate. The overall lift from the lapsed angler marketing effort was 0.40%. For non-renewed anglers, the cumulative response rate for both mailings was 31.7%, and the response rate from the control group was 32.0%. Non-renewed anglers with the most consistent purchase history (Tier A) responded at the highest rate. The overall lift from the non-renewed angler marketing effort was -0.26% (Table 43). No tiers, neither lapsed nor non-renewed, showed statistically significant lift.

Table 41. Cumulative Annual Resident License Sales through August 5.

Year	2004	2005	2006	2007	2008	2009	2010	09-10 % Change
License Sales	288,247	298,870	295,255	300,889	268,056	314,125	288,130	-8.3%

Table 42. Lapsed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
1	8,081	1,525	18.9	1,469	280	19.1	-0.19	-15
2	4,224	702	16.6	782	121	15.5	1.15	48
3	2,593	460	17.7	431	75	17.4	0.34	9
4	7,115	969	13.6	1,201	145	12.1	1.55	110
5	3,289	496	15.1	609	93	15.1	-0.03	-1
6	3,507	452	12.9	614	81	13.2	-0.30	-11
7	2,234	267	12.0	406	49	12.1	-0.12	-3
8	12,219	1,094	9.0	2,129	180	8.5	0.50	61
Total	43,219	5,965	13.8	7,641	1,023	13.4	0.40	173

Sources: RBFF 2011

Table 43. Non-renewed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
A	6,492	2,988	46.0	1,158	525	45.3	0.69	45
B	3,410	1,215	35.6	572	201	35.1	0.49	17
C	1,766	562	31.8	337	116	34.4	-2.60	-46
D	4,512	1,235	27.4	810	222	27.4	-0.04	-2
E	2,982	869	29.1	522	157	30.1	-0.94	-28
F	2,771	659	23.8	488	111	22.8	1.04	29
G	2.541	522	20.5	457	101	22.1	-1.56	-40
H	1,863	304	16.3	340	65	19.1	-2.80	-52
Total	26,337	8,354	31.7	4,684	1,498	32.0	-0.26	-69

Sources: RBFF 2011

Response rates and lift from the marketing effort (lapsed and non-renewed anglers combined) were calculated for each Tapestry group. Three Tapestry groups were identified that exhibited statistically significant lift, but only 2 of those had a lift higher than the 2.99 break-even threshold (Table 44). Aggregating Tapestry segments according to urban/rural splits showed that the small Urban group had the highest lift, but none of those had a lift higher than the 2.99 break-even threshold (Table 45). The Rural group had the highest response rate to the advertising, but also the highest purchase rate from the control group.

Table 44. Tapestry Segments with Response Rates and Statistically Significant Positive Lift.

Tapestry Name	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Suburban Splendor	258	63	24.4	45	6	13.3	11.09	29
Aspiring Young Families	1,257	286	22.8	231	33	14.3	8.47	106
Prairie Living	13,568	2,779	20.5	2,345	440	18.8	1.72	233

Sources: RBFF 2011

Table 45. Lift by Urban/Rural Characteristic of Angler Neighborhoods.

Urbanization Group	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Urban	6,415	1,299	20.2	1,131	222	19.6	0.62	40
Suburban	30,267	5,970	19.7	5,449	1,094	20.1	-0.35	-107
Rural	32,621	6,992	21.4	5,691	1,196	21.0	0.42	136

Sources: RBFF 2011

Response rates from combined lapsed and non-renewal angler marketing were calculated for a variety of demographic characteristics. Males (21.7%) responded at a higher rate than females (18%), but there was no difference in lift for either gender. All age groups responded at similar rates, from 18%-22%, lift ranged from -7.3 to 1.1, and there was no significant difference in lift for any age group. All income categories responded at similar rates, from 17%-24%, lift ranged from -1.3 to 8.7, and the only statistically significant lift was from the small portion of households with more than $100,000 annual income. The license type analysis revealed that if an angler's most recent purchase was an annual license, instead of a short-term license, they were more likely to purchase again; the lift was 0.5. The incentive analysis indicated that the most effective method was a reminder postcard with no incentive; the lift was 0.5. More specific details regarding these results are included in Appendix 15 (RBFF 2011).

The actual statewide sales data for the months of April, May and June, showed a 0.9% decrease in sales from 2009. The weather model predicted a 13% increase in sales during that time frame, overestimating total sales by 8.5%. The overall data indicate that weather conditions should have had a positive impact on license sales during this time frame. April was much warmer than normal, with average precipitation. May and June were equivalent to long term averages for temperature, and May precipitation was average, but June was extremely wet.

The cost of the 2010 marketing program was $41,775 for mailing costs and advertising. The license sales revenue attributable to lift was $1,511. The Iowa revenue of $1,511 minus the direct mail cost of $37,875, and minus an additional $3,900 spent on advertising, resulted in a net loss of $40,264.

2010 Discussion and Conclusions

Fishing license sales were 8.3% lower in 2010 than 2009 through the angler marketing effort evaluation period. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were 0.9% lower statewide in 2010 versus 2009. The weather model estimated that sales would be 13% higher statewide, overestimating total sales by 8.5%. April and June of 2010 were warmer than average, influencing high predictions from

the model on fishing license sales. However, statewide rainfall in June was 100% greater than the long-term average, with some portions of the state receiving more than 200% of the average monthly total. Model development included no instances of such catastrophic rainfall, so the error from actual sales is understandable. Overall sales were down nearly 9% in 2010, and were likely impacted by poor weather. Also, the marketing period commenced on May 22, so the extremely wet month of June was a large portion of the marketing period. This information provides a base for other comparisons, and indicates that weather had an unusual impact on license sales in 2010.

The response rate for the lapsed angler effort was low, but was similar to response rates from lapsed anglers in previous years. Response rate and lift were highest for anglers with the most consistent and most recent purchases (Tier 1, and progressively less as numbers increase). The response rate for non-renewed anglers was also similar to previous years. Response rate was highest for anglers with the most consistent and most recent purchases (Tier A, and progressively less as you move down the alphabet). Lift from the marketing effort to lapsed anglers was only 0.40%, while lift from the marketing to non-renewed was -0.26%.

The combined lapsed and non-renewal angler marketing strategies were assessed across a variety of demographic characteristics to determine if there were differences in response rates. Past work indicated that males responded better to broadcast marketing efforts, but the radio marketing effort was much reduced in 2010. Similarly, previous work indicated that females responded best to direct marketing. However, the past direct mail pieces provided specific angling tips and other guidance, while this effort only sent a reminder postcard. There were no significant differences according to gender in the response rates, and response rates were low. All age groups responded at similar rates, from 18%-22%, and no age group responded significantly better than the others. According to income categories, the only statistically significant lift was from the small portion of households with more than $100,000 annual income. The license type analysis revealed that if an angler's most recent purchase was an annual license, they were more likely to purchase again. The incentive analysis indicated that the most effective method was a reminder postcard with no incentive. None of these results provide substantial information to help refine future efforts, likely because overall sales were greatly reduced in 2010.

The return on investment for 2010 was a negative $40,264 for Iowa for the angler marketing effort. This substantial loss led RBFF to recommend that further refinement of the target audience alone would not result in enough revenue to make the program profitable, instead, substantially reducing cost by transitioning to an email-based program instead of a direct mail program was necessary (RBFF 2011).

2011 Methods

The 2011 program included a direct mail piece and email, as well as social media pieces and a radio buy on WHO. RBFF did not conduct a radio advertising campaign. On April 27, 2011, 60,000 lapsed and non-renewed anglers were sent a direct mail piece (3 versions, Appendix 6). On May 12 and June 16, follow-up emails were sent to 25,156 anglers who had not yet purchased a license. All anglers sent marketing materials were classified into a Tapestry group; into tiers based upon their past purchase history; by gender, age, income, license type; and by direct mail/email groupings (RBFF 2012).

The 2011 marketing effort continued as a statewide program, and included both lapsed anglers and non-renewed anglers. RBFF's national 2011 broadcast marking program remained reduced in scope in Iowa. The marketing plan indicated that only ESPN-affiliated AM radio stations would be included in the radio campaign, however, this is not mentioned in the final report. Iowa DNR broadcast marketing activities included an additional radio buy on two Des Moines radio stations, social media pieces on Facebook and Twitter, weekly e-mail fishing forecasts, family fishing events, additions to the Iowa DNR website and corresponding media coverage. The individualized marketing included a direct mail piece coinciding with the RBFF's radio advertising campaign, followed up with an email effort. The target audience of 60,000 lapsed and non-renewed anglers was split into 3 groups of 20,000 each to test different direct mail pieces and email. An additional 15,000 new recruits, or individuals new to the database, were sent a "Welcome to Iowa fishing" mail piece which included tips and potential fishing locations.

The target audience of lapsed anglers (N=116,892) were classified into tiers based upon their past purchase history (Table 46), and into Tapestry groups based upon their place of residence. No details are given regarding how the target

audience was selected, however, it appears that approximately 25% of individuals in Tiers 1-7 were included. All individuals from Tier 8 were excluded from the target population. Due to the email campaign, a valid email address must have also been a requirement for a portion of the selected target audience.

The target audience of non-renewed anglers (N=258,693) were also classified into tiers based upon their past purchase history (Table 47), and into Tapestry groups based upon their place of residence. No details are given regarding how the target audience was selected, however, it appears that approximately 25% of individuals in Tiers A-G were included. Only 4% of Tier H were included in the target. Due to the email campaign, a valid email address must have also been a requirement for a portion of the selected target audience.

Table 46. Definition of Lapsed Tiers.

Lapse Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2006	2007	2008	2009	20010-11		
1	x	x	x	x		17,550	15.0
2		x	x	x		8,544	7.3
3	x		x	x		4,686	4.0
4			x	x		13,209	11.3
5	x	x		x		8,421	7.2
6		x		x		8,590	7.3
7	x			x		7,949	6.8
8				x		47,943	41.0

Source: RBFF 2012

Table 47. Definition of Non-renewed Tiers.

Non-renewed Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2007	2008	2009	2010	2011		
A	x	x	x	x		86,352	27.5
B		x	x	x		23,339	7.4
C	x		x	x		16,775	5.3
D			x	x		33,077	10.5
E	x	x		x		11,673	3.7
F		x		x		9,709	3.1
G	x			x		11,922	3.8
H				x		65,846	21.0

Source: RBFF 2012

A target audience of 70,560 anglers was selected for inclusion in the marketing program. Program budget allow for 60,000 selected individuals to receive the mailing, with the remaining 10,584 anglers (15% of each tier) simultaneously selected to serve as the control group. The 60,000 anglers were split evenly among the three mail pieces. The initial mailing occurred on April 27, 2011. The three mail pieces were: 1) a plain postcard with an "Official Renewal Notice" theme, 2) a four-color promotional postcard extolling the benefits of fishing (family memories, relax), and, 3) an official DNR letter with renewal notices and supporting fishing benefits messages. On May 12, a follow up email was sent to 29,990 anglers from the original target population who had not yet purchased a license. A second follow up email was sent on June 16. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 16 (RBFF 2012).

2011 Results

The results of the 2011 marketing effort include only license sales through July 27, which was the end of the assessment period. Statewide fishing license sales through July 27 decreased 3.9% from 2010 to 2011 (Table 48). The lapsed angler cumulative response rate for direct mail and email was 22.8%, and the response rate from the control group was 21.0% (Table 49). Individuals with the most consistent purchase history (Tier 1) responded at the highest rate. The overall lift from the lapsed angler marketing effort was 1.82%. For non-renewed anglers, the cumulative response rate for both mailings was 48.1%, and the response rate from the control group was 45.5% (Table 50). Non-renewed anglers with the most consistent purchase history (Tier A) responded at the highest rate. The overall lift from the non-renewed angler marketing effort was 2.59%. Tiers 4, A, and H showed statistically significant lift.

Table 48. Cumulative Annual Resident License Sales through July 27.

Year	2005	2006	2007	2008	2009	2010	2011	10-11 % Change
License Sales	293,633	290,641	295,566	262,342	307,734	284,060	272,860	-3.9%

Table 49. Lapsed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
1	3,972	1,169	29.4	672	202	30.1	-0.63	-25
2	2,027	468	23.1	326	63	19.3	3.76	76
3	1,218	295	24.2	213	47	22.1	2.15	26
4	2,981	556	18.7	524	79	15.1	3.58	107
5	1,905	445	23.4	326	70	21.5	1.89	36
6	1,928	368	19.1	329	56	17.0	2.07	40
7	1,822	320	17.6	312	51	16.4	1.22	22
Total	15,853	3,621	22.8	2,702	568	21.0	1.82	288

Sources: RBFF 2012

Response rates and lift from the marketing effort (lapsed and non-renewed anglers combined) were calculated for each Tapestry group. Fifteen large Tapestry groups were identified that accounted for more than 1.5% of the mailing list, but only 4 of those had a statistically significant lift (Table 51). The break-even threshold for lift for the marketing program was 2.23, and there were 7 of the large Tapestry segments that exceeded this threshold. There were numerous Tapestry groups with small sample sizes that exceeded the 2.23 lift threshold (Appendix 13). Aggregating Tapestry segments according to urban/rural splits showed that the Rural group had the highest response rate, highest lift, and was the only group with a lift above 2.23 (Table 52).

Response rates from combined lapsed and non-renewal angler marketing were calculated for a variety of demographic characteristics. Males (41.9%) responded at a higher rate than females (37.7%), but lift was higher for females (2.57) than males (1.93). The 18-24, 25-34, and 65 and older age groups responded at similar rates, from 37.5%-38.3%, while the 35-44, 45-54, and 55-64 age groups all responded at rates from 42.2%-42.8%. Lift ranged from 0.81 to 5.52, and four age groups (25-34, 45-54, 55-64, and 65 and over) showed statistically significant lift. All income categories responded at similar rates, from 32.5%-40.6%, lift ranged from -8.8 to 7.4, and statistically significant lift resulted from households with income ranges of $25,000-$49,999, $50,000-$74,999, and more than $100,000. The license type analysis revealed that if an angler's most recent purchase was an annual license, instead of a short-term license, they were more likely to purchase again; the lift was 2.1%. The mailing type analysis showed all mail pieces had similar response rates (39.3%-41.7%), but response rates using an in-house email (39.1%) were much higher than those from purchased email lists (34.1%). Lift was highest for the plain postcard (2.18), then the letter (1.75) followed by the promotional postcard (0.62). When followed up with an email, the letter resulted in the highest lift (3.07), followed by the plain postcard (2.61), then the promotional postcard (2.48). More specific details regarding these results are included in Appendix 16 (RBFF 2012).

Table 50. Non-renewed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
A	14,697	9,084	61.8	2,562	1,524	59.5	2.32	342
B	4,732	2,280	48.2	922	419	45.4	2.74	130
C	3,622	1,709	47.2	673	303	45.1	2.16	78
D	6,560	2,686	41.0	1,085	418	38.5	2.42	159
E	2,434	928	38.1	455	170	37.4	0.76	19
F	2,107	655	31.1	397	119	30.0	1.11	23
G	2,447	758	31.0	442	129	29.2	1.79	44
H	2,203	562	25.5	412	80	19.4	6.09	134
Total	38,802	18,662	48.1	6,948	3,162	45.5	2.59	1,003

Sources: RBFF 2012

Table 51. Significant* Lapsed Angler Tapestry Segments with Response Rates and Statistically Significant Lift.

Tapestry Name	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Exurbanites	1,247	457	36.7	186	83	44.6	-7.98	-99***
Enterprising Professionals	871	351	40.3	132	43	32.6	7.72	67***
Cozy and Comfortable	1,321	562	42.5	225	81	36.0	6.54	86***
Salt of the Earth**	4,884	2,154	44.1	911	370	40.6	3.49	170***
Green Acres**	3,424	1,401	40.9	652	247	37.9	3.03	104
Midland Crowd**	1,286	556	43.2	244	99	40.6	2.66	34
Midlife Junction	3,220	1,278	39.7	554	205	37.0	2.69	86
Home Town	2,171	864	39.8	412	153	37.1	2.66	58

*Accounting for greater than 1.5% of mail list.

**Indicates Tapestry segments identified with fishing as a common characteristic of their lifestyle.

***Indicates statistically significant lift

Sources: RBFF 2012

Table 52. Lift by Urban/Rural Characteristic of Angler Neighborhoods.

Urbanization Group	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Urban	4,930	1,891	38.4	819	301	36.8	1.60	79
Suburban	23,414	9,369	40.0	4,106	1,576	38.4	1.63	382
Rural	26,086	10,944	42.0	4,695	1,844	39.3	2.68	699

Sources: RBFF 2012

The actual statewide sales data for the months of April, May and June, showed a 7.0% decrease in sales from 2010. The weather model predicted an 11.0% decrease in sales during that time frame, but only overestimated total sales by 4.3%. The overall data indicate that weather conditions were very near the long-term averages, and thus should have had minimal impact on license sales during this time frame.

The cost of the 2011 marketing program was $25,798 for mailing costs, email and advertising and license sales revenue attributable to lift was $21,350 for a net loss of $4,448. Costs were also calculated for each direct mail piece, with positive return on investment for the plain postcard alone, and both postcards with follow-up emails. The email follow-ups resulted in gross revenue of $9,962 with a cost of $1,623, for a net gain of $8,339. A portion of the overall program loss may be offset by an estimated $7,904 in addition SFR funds due to the increased license sales. (RBFF 2012).

2011 Discussion and Conclusions

Fishing license sales were 3.9% lower in 2011 than 2010 through the angler marketing effort evaluation period. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were 7.0% lower statewide in 2011 versus 2010. The weather model estimated that sales would be 11% lower statewide, but the model only overestimated total sales by 4.3%. This information provides a base for other comparisons, and indicates that weather should have had minimal impact on license sales in 2011.

The response rate for the marketing effort was high, above the response rates from lapsed anglers in previous years. Response rates were highest for anglers with the most consistent and most recent purchases (Tier 1, and progressively less as numbers increase), but lift did not track with response rates. The response rate for non-renewed anglers was also higher than previous years. Response rate was highest for anglers with the most consistent and most recent purchases (Tier A, and progressively less as you move down the alphabet), and lift tracked well with response rate except for Tier H. Tier H had unusually high lift in 2011 (6.09%). Lift from the marketing effort to lapsed anglers was very similar to the previous year at 1.82%, while lift from the marketing to non-renewed anglers was 2.59%.

The combined lapsed and non-renewal angler marketing strategies were assessed across a variety of demographic characteristics to determine if there were differences in response rates. Past work indicated that males responded better to broadcast marketing efforts, but the radio marketing effort remained low in 2011. Previous work also indicated that females responded best to direct marketing pieces that provide specific angling tips and other guidance. Both males and females responded to the marketing efforts with statistically significant lift, and females responded at a lift rate higher than the break-even threshold of 2.23. The data was not teased apart to examine gender difference according to mail piece type, however, a plausible explanation might be that the renewal letter with fishing benefits and tips might have resulted in the increased lift. All age groups responded at similar rates (37.5%-42.85), and only the 35-44 age group showed lift much worse (0.81) than the others. According to income categories, the small portion of households with more than $100,000 annual income showed the highest lift. The license type analysis revealed that if an angler's most recent purchase was an annual license, they were more likely to purchase again.

The three versions of the direct mail piece had different response rates, as did follow-up emails. The letter, with and without a follow-up email, had greater lift than either the plain or colored postcard. Adding a follow-up email increased the lift for all of the direct mail pieces, and aggregate lift by adding email follow-up was 0.35. The lift observed was almost twice as high when using email addresses supplied to DNR (3.62) versus emails addresses purchased from an external source (1.83). Developing a plan to have customers provide their email address should be a high priority for Iowa DNR.

The return on investment for 2011 was a negative $4,448 for Iowa for the angler marketing effort. This was a substantial improvement compared to recent years, and can be partially attributed to reduced costs by implementing an email campaign and reducing the amount of direct mail (RBFF 2012). The 2011 marketing program reinforced the concept that anglers with longer and more consistent purchase histories respond best to marketing efforts.

2012 Methods

The 2012 marketing effort continued as a statewide program, and included lapsed anglers, non-renewed anglers, and a special retention effort targeting first-time buyers from 2011. RBFF did not conduct a radio advertising campaign in 2012. Iowa DNR broadcast marketing activities included a radio buy on two Des Moines radio stations, social media pieces on Facebook and Twitter, weekly e-mail fishing forecasts, additions to the Iowa DNR website, fishing events and corresponding media coverage. The individualized marketing included direct mail (Appendix 6) and email piece coinciding with the Iowa DNR's radio advertising campaign, and a subset that were followed up with an email effort. The target audience of 92,500 lapsed and non-renewed anglers was split into 3 groups of 11,500 each to test different direct

mail pieces and email, plus 58,000 who would only receive the initial postcard. The 15,000 anglers who were sent the "Welcome to Iowa fishing" mail piece in 2011 were also sent a renewal reminder postcard.

Lapsed anglers (N=95,857) were classified into tiers based upon their past purchase history (Table 53), and into Tapestry groups based upon their place of residence. No details are given regarding how the target audience was selected, however, it appears that 86%-88% of individuals in Tiers 1-5 were included, 57% of individuals from Tier 6 were included, and 15% of individuals from Tiers 7-8 were included. Due to the email campaign, a valid email address must have also been a requirement for a portion of the selected target audience.

Non-renewed anglers (N=190,401) were also classified into tiers based upon their past purchase history (Table 54), and into Tapestry groups based upon their place of residence. No details are given regarding how the target audience was selected, however, it appears that 30%-34% of individuals in Tiers A-F were included, 28% of individuals from Tier G were included, and 42% of individuals from Tier H were included. Tier H individuals included the 15,000 anglers targeted from the Welcome piece in 2011, and that group accounted for 22% of Tier H anglers. Due to the email campaign, a valid email address must have also been a requirement for a portion of the selected target audience.

On April 26, 2012, 107,425 lapsed and non-renewed anglers were sent a letter, postcard or email. On May 17 follow-up emails were sent to 27,054 anglers who had not yet purchased a license.

Table 53. Definition of Lapsed Tiers.

Lapse Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2007	2008	2009	2010	20011-12		
1	x	x	x	x		15,251	15.9
2		x	x	x		7,515	7.8
3	x		x	x		5,771	6.0
4			x	x		13,791	14.4
5	x	x		x		4,753	5.0
6		x		x		5,034	5.3
7	x			x		6,112	6.4
8				x		37,630	39.3

Source: RBFF 2013a

Table 54. Definition of Non-renewed Tiers.

Non-renewed Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2008	2009	2010	2011	2012		
A	x	x	x	x		53,202	27.9
B		x	x	x		20,716	10.9
C	x		x	x		7,660	4.0
D			x	x		21,167	11.1
E	x	x		x		12,060	6.3
F		x		x		12,509	6.6
G	x			x		8,464	4.4
H				x		54,623	28.7

Source: RBFF 2013a

There were 126,379 anglers selected for inclusion in the marketing program, of whom 11,029 purchased prior to the initial mailing. Program budget allowed for 98,001 selected individuals to receive the mailing, with the remaining 17,337 anglers (15% of each tier) simultaneously selected to serve as the control group. The 98,001 anglers were split among

four treatment mail pieces. The initial mailing/emailing occurred on April 26, 2012. The four mail/email pieces were: 1) a postcard with a renewal notice theme with no follow up (n=67,719), 2) the same postcard with a follow up email (n=10,107), 3) an official DNR letter with a follow up email (n=10,048), and 4) an initial email with a follow up email (n=10,127). The follow up emails were sent on May 17. More specific details regarding these marketing activities are documented in the final report, included here as Appendix 17 (RBFF 2013a).

2012 Results

The results of the 2012 marketing effort include only license sales through June 27, which was the end of the assessment period. Statewide fishing license sales through June 27 increased 15.0% from 2011 to 2012 (Table 55). The lapsed angler cumulative response rate for direct mail and email was 18.1%, and the response rate from the control group was 17.8% (Table 55). Individuals with the most consistent purchase history (Tier 1) responded at the highest rate. The overall lift from the lapsed angler marketing effort was 0.34% (Table 56). For non-renewed anglers, the cumulative response rate for both mailings was 33.5%, and the response rate from the control group was 32.5% (Table 57). Non-renewed anglers with the most consistent purchase history (Tier A) responded at the highest rate. The overall lift from the non-renewed angler marketing effort was 1.02%. Only Tier H showed statistically significant lift.

Table 55. Cumulative Annual Resident License Sales through June 27.

Year	2006	2007	2008	2009	2010	2011	2012	11-12 % Change
License Sales	260,773	265,198	229,743	274,807	261,862	245,392	282,261	15.0%

Table 56. Lapsed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
1	11,137	2,585	23.2	1,944	423	21.8	1.45	162
2	5,523	1,021	18.5	964	175	18.2	0.33	18
3	4,257	828	19.5	773	152	19.7	-0.21	-9
4	10,336	1,680	16.3	1,846	305	16.5	-0.27	-28
5	3,531	638	18.1	622	96	15.4	2.63	93
6	2,379	328	13.8	468	76	16.2	-2.45	-58
7	798	124	15.5	134	20	14.9	0.61	5
8	4,569	497	10.9	772	90	11.7	-0.78	-36
Total	42,530	7,701	18.1	7,523	1,337	17.8	0.34	142

Sources: RBFF 2013a

Table 57. Non-renewed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
A	13,679	7,096	51.9	2,465	1,244	50.5	1.41	193
B	5,642	2,269	40.2	1,022	399	39.0	1.18	66
C	2,227	805	36.2	393	149	37.9	-1.77	-39
D	5,816	1,900	32.7	994	332	33.4	-0.73	-43
E	3,501	1,119	32.0	621	202	32.5	-0.57	-20
F	3,291	911	27.7	575	151	26.3	1.42	47
G	2,015	517	25.7	347	87	25.1	0.59	12

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
H	19,300	3,980	20.6	3,397	626	18.4	2.19	423
H*	9,875	1,991	20.2	1,752	315	18.0	2.18	216
Total	55,471	18,597	33.5	9,814	3,190	32.5	1.02	566

H* - 2011 Welcome group, which is a component of Tier H, but was not included in the Tier H treatment
Sources: RBFF 2013a

Response rates and lift from the marketing effort (lapsed and non-renewed anglers combined) were calculated for each Tapestry group. The ten largest Tapestry groups were included in the final report, but only 3 of those had a statistically significant lift (Table 58). The three segments with statistically significant lift also exceeded 1.49 break-even threshold for lift for the marketing program. Aggregating Tapestry segments according to urban/rural splits showed that the Rural group had the highest response rate, the Suburban group had the highest lift, but no group had a lift above 1.49 (Table 59).

Table 58. Significant* Lapsed Angler Tapestry Segments with Response Rates and Statistically Significant Lift.

Tapestry Name	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Cozy and Comfortable	2,318	618	26.7	389	88	22.6	4.04	94
Home Town**	3,786	1,026	27.1	705	170	24.1	2.99	113
Rustbelt Traditions**	11,216	3,116	27.8	1,974	501	25.4	2.40	269

*Accounting for greater than 1.5% of mail list.
**Indicates Tapestry segments identified with fishing as a common characteristic of their lifestyle.
Sources: RBFF 2013a

Table 59. Lift by Urban/Rural Characteristic of Angler Neighborhoods.

Urbanization Group	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Urban	9,625	2,354	24.5	1,696	410	24.2	0.28	27
Suburban	42,556	11,295	26.5	7,549	1,913	25.3	1.20	511
Rural	45,368	12,543	27.7	8,011	2,183	27.3	0.40	180

Sources: RBFF 2013a

Response rates from combined lapsed and non-renewal angler marketing were calculated for a variety of demographic characteristics. Males (28.0%) responded at a higher rate than females (24.2%), but lift was higher for females (1.23) than males (0.54). The 18-24, 25-34, and 65 and older age groups responded at similar rates, from 23.2%-25.0%, while the 35-44, 45-54, and 55-64 age groups all responded at rates from 28.3%-30.3%. Lift ranged from -0.10 to 2.02, but only the 55-64 age group showed statistically significant lift. All income categories responded at similar rates, from 19.0%-27.2%, lift ranged from -1.38 to 0.88, and statistically significant lift resulted only from the $25,000-$49,999 household income group. The mailing type analysis showed the postcard with no follow up generated a response rate of 25.5%, while the mail/email first contact with an email follow up had similar response rates (29.2%-30.9%). Response rates using an in-house email (31.5%) were much higher than those from purchased email lists (29.0%); lift followed the same trend (2.15 in house versus 0.11 for purchased). Lift was highest for the letter/email (1.84), followed by the postcard alone (0.71), email/email (0.42) and postcard/email (0.09). More specific details regarding these results are included in Appendix 17 (RBFF 2013a).

The actual statewide sales data for the months of April, May and June, showed a 7.2% decrease in sales from 2011. The weather model predicted a 1.3% increase in sales during that time frame, and overestimated total sales by 12.4%. March of 2012 was the warmest March in recorded history in Iowa. License sales from 2002-2011 varied from 19,809-35,242, but license sales in March 2012 were 76,107. This unique set of circumstances accelerated sales in 2012, and was not accounted for in the weather model. The overall data indicate that weather conditions were warmer and drier than the long-term averages, and thus should have had positive impact on license sales during this time frame.

The statewide average high temperature on March 10, 2012 was 67 degrees, and the daily high temperature stayed above 59 until April 10. During that 32 day stretch, nearly 100,000 licenses were sold, over 1,000 fishing licenses were sold every day, and the average daily sales were over 3,000. When the high temperature dipped to 56 on April 11, sales dropped to 852. Saturday, March 25, 2012 saw 7,434 licenses sold, the second highest daily total since ELSI launched; the highest sales were Saturday, May 25, 2002, which was Memorial Day weekend. Overall, 2012 had the highest annual resident fishing license sales since 2002.

The cost of the 2012 program was $29,039 for mailing costs, email and advertising. The license sales revenue attributable to lift was $14,116. The revenue of $14,116 minus the program cost of $29,039 results in a net loss of $14,923. Costs were also calculated for each direct mail piece, with positive return on investment only for the email/follow-up email group. A portion of the overall program loss may be offset by an estimated $4,447 in addition SFR funds due to the increased license sales (RBFF 2013a).

2012 Discussion and Conclusions

Fishing license sales were 15% higher in 2012 than 2011 through the angler marketing effort evaluation period. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were 7.2% lower statewide in 2012 versus 2011. The weather model estimated that sales would be 1.3% higher statewide, but the model does not account for the huge license sales that occurred in March 2012. March 2012 was the warmest March in recorded history in Iowa. This information provides a base for other comparisons, and indicates that weather had a large, positive impact on license sales in 2012.

The response rate for the marketing effort was moderate, similar to the response rates from lapsed anglers in previous years. Response rates were highest for anglers with the most consistent and most recent purchases (Tier 1, and progressively less as numbers increase), but lift did not track with response rates. The response rate for non-renewed anglers was also similar to previous years. Response rate was highest for anglers with the most consistent and most recent purchases (Tier A, and progressively less as you move down the alphabet), and lift tracked well with response rate except for Tier H. Tier H had high lift in 2012 (2.19%). Lift from the Welcome to Iowa fishing program (2.19) in 2011 was above the break-even threshold and was statistically significant, indicating it was a very successful effort. Lift from the marketing effort to lapsed anglers was very low at 0.34%, while lift from the marketing to non-renewed anglers was 1.02%.

The marketing effort commenced on April 26. Average license sales through that date (2002-2013) are approximately 140,000, but in 2012, nearly 175,000 licenses had been sold already. The unusually warm spring seems to have spurred these sales, and likely resulted in many inconsistent license purchasers to buying a license prior to the marketing effort. It is probable that the moderate response rates and low lift in 2012 resulted from many individuals more likely to respond to the marketing having already responded to the weather queue. It should be unsurprising, then, that remaining lapsed and non-renewed anglers exhibit low response rates and lift to the marketing effort, since they did not respond to the weather.

The combined lapsed and non-renewal angler marketing strategies were assessed across a variety of demographic characteristics to determine if there were differences in response rates. Past work indicated that males responded better to broadcast marketing efforts, but the RBFF radio marketing effort was eliminated in 2012, and Iowa DNR only had a small radio marketing effort. Previous work also indicated that females responded best to direct marketing pieces that provide specific angling tips and other guidance. Females responded to the marketing efforts with statistically significant lift, and at a lift rate higher than males, but lower than the break-even threshold of 1.49. The data was not teased apart to examine gender difference according to mail piece type, however, a plausible explanation might be that

the renewal letter with fishing benefits and tips might have resulted in the increased lift. All age groups responded at similar rates (23.2%-30.3%), and only the 55-64 age group showed lift much better (2.02) than the others. According to income categories, the small portions of households with less than $25,000 income or more than $100,000 annual income showed negative lift.

The four versions of the direct marketing had different response rates, as did follow-up emails. The letter, with a follow-up email, had greater lift than either the postcard, postcard/email, or email/email. However, the lift from the letter/email marketing (1.81) was not higher than the break-even threshold for that activity (2.42). The lift observed was much higher when using email addresses supplied to DNR (2.15) versus emails addresses purchased from an external source (0.11). Developing a plan to have customers provide their email address should be a high priority for Iowa DNR.

The return on investment for 2012 was a negative $14,923 for Iowa for the angler marketing effort. This was a step back from the previous year, and could be partially attributed to record license sales prior to the marketing campaign.

The 2012 marketing program reinforced the concept that anglers with longer and more consistent purchase histories respond best to marketing efforts. Overall sales in 2012 reinforced the concept that anglers respond to weather queues.

2013 Methods

The 2013 marketing effort continued as a statewide program run completely by RBFF, and included only lapsed anglers. RBFF did not conduct a radio advertising campaign in 2013, but did continue their overall media marketing. Iowa DNR broadcast marketing activities were similar to previous years, but all occurred after the end of the RBFF marketing effort. The individualized marketing was a direct mail piece (Appendix 6). The target audience of 55,155 lapsed anglers was split into 2 groups of approximately 27,780 each to test different two different postcard pieces, which were sent on April 2, 2013.

There were 91,256 anglers who lapsed in 2012. Of that group, a target audience (N=66,203) were selected for the marketing program. The target audience was classified into tiers based upon their past purchase history (Table 60), and into Tapestry groups based upon their place of residence. No details are given regarding how the target audience was selected, however, it appears that approximately 70% of individuals in Tiers 1-5 and Tier 8 were in the treatment group, and 12% from each selected tier were included in the control group. The 55,155 anglers in the treatment group were split between two treatment mail pieces. The two mail pieces were: 1) a four-color postcard touting the benefits of fishing (n=27,576), and, 2) a black and white renewal notice postcard (n=27,579). More specific details regarding these marketing activities are documented in the final report, included here as Appendix 18 (RBFF 2014).

Table 60. Definition of Lapsed Tiers.

Lapse Tier	Years in which a license was purchased (x)					Number in Tier	Percent of Lapsed Anglers
	2008	2009	2010	2011	20012-13		
1	x	x	x	x		14,893	16.3
2		x	x	x		8,658	9.5
3	x		x	x		3,417	3.7
4			x	x		10,831	11.9
5	x	x		x		6,053	6.6
6		x		x		7,308	8.0
7	x			x		5,072	5.6
8				x		35,024	38.4

Source: RBFF 2014

2013 Results

The results of the 2012 marketing effort include only license sales through May 17, which was the end of the assessment period. Statewide fishing license sales through May 17 decreased 23.5% from 2012 to 2013 (Table 61). The lapsed angler cumulative response rate for direct mail was 7.3%, and the response rate from the control group was 7.1% (Table 62).

Individuals with the most consistent purchase history (Tier 1) responded at the highest rate. The overall lift from the lapsed angler marketing effort was 0.19% (Table 62). Only Tier 5 showed statistically significant lift.

Response rates and lift from the marketing effort were calculated for each Tapestry group. The ten largest Tapestry groups were included in the final report, but none had a statistically significant lift. Aggregating Tapestry segments according to urban/rural splits showed that the Rural group had the highest response rate, the Urban group had the highest lift (Table 63).

Table 61. Cumulative Annual Resident License Sales through May 17.

Year	2007	2008	2009	2010	2011	2012	2013	12-13 % Change
License Sales	183,313	152,115	187,872	183,030	161,467	208,759	159,637	-23.5%

Table 62. Lapsed Angler Response Rate and Lift by Priority Tier.

Response by Tier	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
1	10,112	1,244	12.3	1,798	228	12.7	-0.38	-38
2	6,068	551	9.1	1,086	107	9.9	-0.77	-47
3	2,406	223	9.3	398	39	9.8	-0.53	-13
4	7,481	517	6.9	1,424	103	7.2	-0.32	-24
5	4,331	368	8.5	732	37	5.1	3.44	149
8	24,757	1,140	4.6	4,300	181	4.2	0.40	98
Total	55,155	4,043	7.3	9,738	695	7.1	0.19	107

Sources: RBFF 2014

Table 63. Lift by Urban/Rural Characteristic of Angler Neighborhoods.

Urbanization Group	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
Urban	5,771	422	7.3	1,019	59	5.8	1.52	88
Suburban	24,159	1,716	7.1	4,201	311	7.4	-0.30	-72
Rural	25,225	1,905	7.6	4,518	325	7.2	0.36	90

Sources: RBFF 2014

Response rates were calculated for a variety of demographic characteristics. Males (8.4%) responded at a higher rate than females (5.1%), and males show small, but not statistically significant, lift (0.38). All age groups responded at similar rates (6.8% - 7.9%), and lift ranged from -0.71 to 1.1, but only the 25-34 and 45-54 age groups showed statistically significant lift. All income categories responded at similar rates, from 6.0%-7.6%, lift ranged from -1.03 to 0.94, but no income category showed statistically significant lift. The mailing type analysis showed the black and white postcard generated a response rate of 7.6%, while the color postcard had a response rate of 7.0%. Positive lift was observed for the black and white postcard (0.5), while the color postcard had negative lift (-0.11). More specific details regarding these results are included in Appendix 18 (RBFF 2014).

RBFF conducted additional analyses on the treatment group from 2013. Due to the low response rates, they investigated which individuals responded to the marketing effort, and who did not, according to purchase history and demographic characteristics. Responders were most likely to be in Tier 1, while non-responders were much more likely to be in Tier 8. There was not a great difference between responders and non-responders in the distribution across urbanization

groups, age groups, income groups or Tapestry segments. Also, females were less likely to respond to the marketing efforts used in 2013.

The actual statewide sales data for the months of April, May and June, showed a 6.0% increase in sales above 2012 levels. The weather model predicted an 11.0% decrease in sales during that time frame, and underestimated total sales by 4.4%. The overall data indicate that weather conditions were cooler and wetter than the long-term averages until June, which was near normal conditions. Weather should have had slight negative impact on license sales during this time frame.

The cost of the 2013 program was completely borne by RBFF, and was $11,522 for mailing costs. The license sales revenue attributable to lift was $2,561. The revenue minus the program cost results in a net loss of $8,961.

2013 Discussion and Conclusions

Fishing license sales were 23% lower in 2013 than 2012 through the angler marketing effort evaluation period. The sales data and weather model developed by French indicates that during April-June, overall fishing license sales were 6.0% higher statewide in 2013 versus 2012, but recall that the majority of 2012 sales occurred in March. The weather model estimated that sales would be 11.0% lower statewide, but underestimated the total sales by only 4.4%. This information provides a base for other comparisons, and indicates that weather had a small negative impact on license sales in 2013.

The response rate for the marketing effort was low compared to the response rates from lapsed anglers in previous years. Response rates were highest for anglers with the most consistent and most recent purchases (Tier 1, and progressively less as numbers increase), but lift did not track with response rates. Lift from the marketing effort to lapsed anglers was very low at 0.19. It should not be surprising that the results of the 2013 marketing effort were dismal. This effort targeted only lapsed anglers, who have consistently responded much more poorly to marketing efforts than non-renewed anglers. Also, 2012 had excellent weather and the highest license sales in a decade, thus anglers who lapsed in 2012 likely were not committed to fishing. Marketing to that set of anglers in 2013 was unlikely to be successful.

The lapsed angler marketing strategies were assessed across a variety of demographic characteristics to determine if there were differences in response rates. Previous work indicated that females responded best to direct marketing pieces that provide specific angling tips and other guidance. Females responded very poorly to the postcard marketing effort, exhibiting negative lift. Males responded better, but the lift rate was only 0.50, and was not higher than the break-even threshold of 0.87. All age groups responded at similar rates (6.8%-7.5%), and with the 25-34 and 45-54 age groups showing statistically significant lift. The lift from both of these age groups exceeded the break-even threshold of 0.87. There were no noteworthy results from the income categories analysis.

The two versions of the direct marketing had different response rates. The black and white postcard had positive lift, while the color postcard had negative lift. However, the lift from the black and white postcard marketing (0.50) was not higher than the break-even threshold (0.87).

The responder v. non-responder analysis corroborates much of what Iowa has seen through the years, individuals with the most recent and most consistent purchase history are most likely to respond. Also, females only respond well to certain types of marketing efforts.

The return on investment for 2013 was a negative $8,961 for the angler marketing effort, but Iowa incurred no expenses for this effort.

The 2013 marketing program reinforced the concept that anglers with longer and more consistent purchase histories respond best to marketing efforts. Targeting lapsed anglers is less likely to yield a positive return on investment than if non-renewals are included, especially after a year of heightened license sales.

Factors Influencing Iowa DNR's Marketing Efforts

Weather

Weather can have a substantial impact on fishing license sales. As mentioned previously, angler surveys have indicated that the weather is the most important influence on anglers' decisions to go fishing (Responsive Management 2013a). As an illustration of this the average statewide temperature and rainfall during Memorial Day weekend (Friday-Monday) correlated with fishing license sales for 2002-2013 (Table 64). Memorial Day is commonly thought of as the gateway to summer and a time spent undertaking outdoor activities. As such, fishing is common on this weekend. When the weather is good on the holiday weekend, greater than 20,000 licenses can be sold, and over 10% of annual sales can occur on this weekend alone. Precipitation, however, can drastically reduce sales. As an example, the weekend temperatures were nearly identical in 2004 (77.5) and 2009 (78.5), however, 2004 had much greater rainfall (1.58" versus 0.20"). The resulting license sales were more than double in 2009. License sales data compared with daily temperature and rainfall data indicate that weather can affect fishing license sales, especially on weekends in April through June.

Table 64. Memorial Day Weekend Annual Resident Fishing License Sales, 2002-2013.

Year	Weekend Dates	Average Temperature	Total Rainfall	Total Sales	% of Annual
2002	24-27	69.5	0.69	26,203	13.11
2003	23-26	70.0	0.16	24,078	11.98
2004	28-31	77.5	1.58	11,446	5.63
2005	27-30	71.3	0.17	21,397	10.17
2006	26-29	86.0	0.32	21,161	10.53
2007	25-28	72.3	0.64	19,347	9.33
2008	23-26	70.0	1.23	16,683	9.63
2009	22-25	78.5	0.20	23,537	11.55
2010	28-31	85.3	0.14	22,179	10.44
2011	27-30	74.0	0.55	18,871	10.10
2012	25-28	84.3	0.44	15,254	6.68
2013	24-27	66.8	2.51	11,409	6.43

The 2005 direct mail piece was sent out on May 9, 2005. The temperature was 80 degrees the day the mailing went out, but dropped into the 50s by the weekend. The weekend of May 7-8 (prior to the mailing) was in the 80s, and nearly 7000 licenses were sold that weekend; however, the cool weekend after the mailer went out saw only 3279 licenses sold. The remainder of the month of May was pleasant, with highs in the 70s and 80s, and no rainfall events greater than 0.20 inches. June was warm, and only slightly wetter than average. At the start of evaluation period, total sales were 10,500 ahead of the 12-year average for that date (May 9). At the end of June, total sales were 7,000 ahead of that 12-year average. The positive impact that mailer might have had was likely lessened by the cool weather the weekend immediately after the target population would have received the mailing.

The 2006 direct mail piece was sent out on May 15, 2006. The weather the following weekend was warm and dry, with highs of 75 and 81. The weekend of May 13-14 (prior to the mailing) was near 60 degrees, and 2,356 licenses were sold; however, the warm weekend after the mailer went out saw 7,671 licenses sold. The remainder of the month of May was pleasant, with highs in the 80s, and no rainfall events greater than 0.35 inches. June was warm and dry. At the start of evaluation period, total sales were 3,000 behind the 12-year average for that date (May 15). At the end of June, total sales were 1,500 ahead of that 12-year average. The mailer arrived at a time when beneficial weather might have combined with the marketing effort to have a positive impact.

The 2007 direct mail piece was sent out on May 15, 2007. The weather the following weekend was warm and dry, with highs of 76 and 82. The weekend of May 12-13 (prior to the mailing) was over 80 degrees, and 8,477 licenses were sold; similarly, the warm weekend after the mailer went out saw 8,355 licenses sold. The remainder of the month of May was pleasant, with highs in the 70s and 80s, but there were two rainfall events greater than 0.5 inches. June was warm and

dry. At the start of evaluation period, total sales were 6,000 ahead of the 12-year average for that date (May 15). At the end of June, total sales were 7,000 ahead of that 12-year average. The mailer arrived at a time when beneficial weather might have combined with the marketing effort to have a positive impact.

The 2008 marketing program had multiple facets and mail pieces. The first direct mail piece, directed to lapsed anglers, was sent out on April 28, 2008. The weather warmed up during the week, to a high of 75 on Friday, cooling to 60 and 62 on Saturday and Sunday. The weekend of April 26-27 (prior to the mailing) was in the mid-50s, and 3,318 licenses were sold; while the slightly warmer weekend after the mailer went out saw 4,362 licenses sold. The remainder of the month of May was cooler and wetter than average, with highs in the 60s and 70s, and there were six rainfall events greater than 0.25 inches. The next direct mail pieces were a reminder to the lapsed anglers and first mailing to non-renewed anglers, and these were sent out simultaneously on May 27, 2008. Memorial Day weekend (May 24-25) was prior to the mailing, and saw highs of 63 and 72 degrees, and 9,625 licenses were sold; the warm weekend after the mailer went out (highs in the 80s) saw 7,410 licenses sold. June experienced average temperatures, but was very wet. At the start of evaluation period, total sales were 25,000 behind the 12-year average for that date (April 28). At the end of June, total sales were 30,000 behind that 12-year average. The mailers arrived at times when cool temperatures and/or substantial rainfall did not allow them to have a positive impact. However, license sales were well behind before any marketing effort commenced, likely because the spring of 2008 was the 19th coldest and 12th wettest in 136 years of recordkeeping.

The 2009 initial direct mail piece was sent out on Friday, May 8, 2009. The weather the following weekend (May 16-17) was cool, with highs of 63 and 61, and 0.58 inches of rain fell on Saturday. The weekend of May 2-3 (prior to the mailing) was in the 60s with no rain, and 9,030 licenses were sold; the cool and rainy weekend after the mailer went out saw 4,987 licenses sold. The remainder of the month of May was seasonal, with highs in the 70s and 80s, and two rainfall events greater than 0.25 inches. June was also very near the long-term averages for temperature and precipitation. A second mail piece was sent out on Friday, June 19, a date when over 80% of annual sales had already been completed. The value of sending a mailing at this late date is dubious, as sales the weekend of June 27-28 were only 3,431. At the start of evaluation period, total sales were 6,000 ahead of the 12-year average for that date (May 8). At the end of June, total sales were 15,000 ahead of that 12-year average. The mailer arrived at a time when beneficial weather might have combined with the marketing effort to have a positive impact.

The 2010 initial direct mail piece was sent out on Saturday, May 22, 2010. The weather the following weekend (Memorial Day weekend, May 29-30) was warm and dry, with highs of 86 and 87. The weekend of May 15-16 (prior to the mailing) was in the mid-60s with slight rain, and 5,440 licenses were sold; the warm weekend after the mailer went out saw 12,207 licenses sold. June was also very near the long-term averages for temperature, but had very high precipitation. A second mail piece was sent out on Saturday, June 19, a date when nearly 85% of annual sales had already been completed. The value of sending a mailing at this late date is dubious, as sales the weekend of June 27-28 were only 2,312. At the start of evaluation period, total sales were 4,500 ahead of the 12-year average for that date (May 22). At the end of June, total sales were 500 ahead of that 12-year average, and by the end of July total sales were 6,000 behind that 12-year average. The first mailer arrived at a time when beneficial weather might have combined with the marketing effort to have a positive impact; however, the second mailer was late in the season and arrived during a very wet time period.

The 2011 initial direct mail piece was sent out on Wednesday, April 27, 2011. The weather the following weekend (April 30-May 1) was warm and dry, with highs of 68 and 60. The weekend of April 23-24 (prior to the mailing) was in the mid-50s and dry, and 3,122 licenses were sold; the warmer weekend after the mailer went out saw 4,248 licenses sold. May was very near the long-term averages for temperature and precipitation. A second marketing piece was sent out on Thursday, May 12, but the weather the following weekend saw rain both days, and highs of 53 and 62. The sales the weekend of May 14-15 were only 3,374. A third marketing piece was sent out on Thursday, June 16, but the weather the following weekend saw rain both days, and highs of 79 and 85. The sales the weekend of June 18-19 were 6,488. At the start of evaluation period, total sales were 17,000 behind the 12-year average for that date (April 27). At the end of June, total sales were 15,000 behind that 12-year average, and by the end of July total sales were still 15,000 behind the 12-year average. The first mailer arrived at a time when beneficial weather might have combined with the marketing effort to have a positive impact; however, the second and third mailers arrived just prior to wet weekends.

The 2012 initial direct mail piece was sent out on Thursday, April 26, 2012. The weather the following weekend (April 28-29) was the coldest days of the month and it rained. The weekend of April 21-22 (prior to the mailing) was around 60 degrees and dry, and 4,025 licenses were sold; the cooler and wetter weekend after the mailer went out saw 2,370 licenses sold. May was warmer and drier than the long-term averages. A second marketing piece was sent out on Thursday, May 17, but the weather the following weekend saw rain on Saturday, and highs of 86 and 75. The sales the weekend of May 19-20 were only 6,645. At the start of evaluation period, total sales were 34,000 ahead of the 12-year average for that date (April 26). At the end of June, total sales were 22,000 ahead of that 12-year average. The first mailer arrived at a time when beneficial weather might have combined with the marketing effort to have a positive impact; however, great weather in March and early April combined to boost early season license sales.

The 2013 direct mail piece was sent out on Tuesday, April 2, 2013. The weather the following weekend (April 6-7) was in the mid-60s with only a slight amount of rain. The weekend of March 30-31 (prior to the mailing) was in the mid-50s with slight rain, and 3,433 licenses were sold; the warmer weekend after the mailer went out saw 6,529 licenses sold. April was cooler and wetter than the long-term averages, but 3 of the 4 weekends in April had high temps in the 60s, and all of those weekends had good license sales. May experienced average temperatures, but was very wet. June was very near the long-term averages for temperature and precipitation. At the start of evaluation period, total sales were 16,000 behind the 12-year average for that date (April 2). At the end of June, total sales were 26,000 behind that 12-year average. The first mailer arrived at a time when beneficial weather might have combined with the marketing effort to have a positive impact.

In summary, the pattern seems to be the temperatures in the 60s and above will enhance license sales, but below that is a deterrent. The average April temperature for Iowa is approximately 50 degrees, 60 for May, and 70 for June. Also, rainfall in excess of 0.3 inches daily is a deterrent, regardless of temperature. These weather factors are especially strong on spring weekends and holidays. French (2006) indicates that the deflection from average temperature and precipitation in April-June is the best predictor of license sales, with dryer and warmer conditions driving sales up, and cooler and wetter conditions reducing sales. The findings of Southwick (2010) that March weather is a determinant of annual license sales seems to indicate that anglers respond to a warm March and get an early start on spring fishing, especially if the warming trend continues through the remainder of spring.

Economic Conditions

Economic factors seem to be less correlated to license sales than weather (Iowa Department of Revenue, 2013). In general, when the economy is improving, license sales have been lower, with the exception of 2012. In 2012, the springtime weather was exceptionally good. Conversely, when the economy is slipping, license sales have been higher with the exception of 2008. In 2008, the springtime weather was exceptionally poor, but the recession also did not take hold until late 2008. Responsive Management (2013a) indicates that increases in housing starts (a factor in economic upswings) are negatively correlated with license sales, and that approximately 10% of anglers are employed in the construction trades. At times of increased housing starts, substantial numbers of anglers will have less free time to go fishing because of work obligations, and that the inverse is likely true when the economy is in decline. When assessing the need for marketing actions, or the performance of a marketing activity, a review of local economic indicators, especially housing starts, is warranted.

Tapestry Segments, Urbanization Level of Residence, and Income Levels

Tapestry Segments - Results from the Tapestry segment-based analyses yielded highly variable results. One reason is that this type of analysis was not instituted until the third year of the marketing program. Another reason is that the method of analysis and reporting changed four times between 2007 and 2013, such as separating results from lapsed and non-renewing anglers in certain years, and combining their results in others. These variations make it difficult to discern consistent trends.

The Prairie Living Tapestry segment contains the greatest number of Iowa anglers, and is very indicative of a generic Iowa angler. This segment depicts a rural population, and members of this group always respond very well to any marketing efforts undertaken. However, the control group from this segment, who are not sent any marketing materials, usually buy licenses at a very similar rate to those individuals who receive marketing materials. Thus, the lift from the marketing effort to this segment is usually low, and was always below the reported break-even threshold. The

Green Acres (rural), Heartland Communities (small town), and Home Town (small town) segments also performed similar to Prairie Living, but those Tapestry segments did exhibit statistically significant lift at times during marketing evaluations. Individuals from these groups represent the "solid base" of consistent fishing license purchasers in Iowa.

A second set of Iowa anglers that are also part of this solid base live in suburban or urban outskirts neighborhoods. These Tapestry segments include Rustbelt Traditions, Rustbelt Retirees, Midlife Junction and Midland Crowd. These are not high-income neighborhoods, and some of them include fishing as one of their lifestyle components. In these segments, response rates from marketing targets are generally high, but often the control population responds at a high rate as well. These Tapestry segments did exhibit statistically significant lift at times during marketing evaluations, but generally were just consistent performers.

An interesting result from the Tapestry segment analysis is the tendency for small segments from wealthy, urban/metropolitan areas to boom periodically. Individuals from these areas may be responding to the combination of agreeable weather, a particular type of marketing message, and perhaps simply a queue to consider fishing as a get-away from their city life. Tapestry segments of this type that responded well to marketing include Aspiring Young Families (2008, 2010), Enterprising Professionals (2009, 2011), Cozy and Comfortable (2011, 2012), City Dimensions (2009), Prosperous Empty Nesters (2009), Crossroads (2009), Young and Restless (2009), Sophisticated Squires (2009), and Suburban Splendor (2010). It is not possible to discern what messaging was effective for these segments, because multiple message types were used each year, and that information is not broken out across Tapestry segments.

Urbanization Level of Residence - Aggregating Tapestry segments according to urban/rural splits showed that across all years, rural groups most commonly had the highest response rate, and never exhibited negative lift (Table 65). Residents of suburban areas were more variable in their responses, and members of the control groups out-performed target populations over 30% of the years, resulting in negative lift (Table 66). At times, urban areas had the highest response rate (2008) or the highest lift (2009, 2010, 2013) (Table 67). This reinforces the observation from individual Tapestry segments that urban/metropolitan are responding to some cue to purchase a license again.

Table 65. Annual results from Rural Angler Neighborhoods.

Year	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
2008, lapsed	13,210	2,146	16.2	n/a	n/a	n/a	n/a	n/a
2009, lapsed	22,994	5,362	23.3	8,049	1,702	21.1	2.18	501
2009, non-renewal	13,537	3,762	27.8	8,374	2,255	26.9	0.87	117
2010, Combined	32,621	6,992	21.4	5,691	1,196	21.0	0.42	136
2011, Combined	26,086	10,944	42.0	4,695	1,844	39.3	2.68	699
2012, Combined	45,368	12,543	27.7	8,011	2,183	27.3	0.40	180
2013, Lapsed	25,225	1,905	7.6	4,518	325	7.2	0.36	90

Table 66. Annual results from Suburban Angler Neighborhoods.

Year	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
2008, lapsed	9,837	1,437	14.6	n/a	n/a	n/a	n/a	n/a
2009, lapsed	17,574	3,794	21.6	6,589	1,284	19.5	2.10	370
2009, non-renewal	9,798	2,582	26.4	6,398	1,645	25.7	0.65	63
2010, Combined	30,267	5,970	19.7	5,449	1,094	20.1	-0.35	-107
2011, Combined	23,414	9,369	40.0	4,106	1,576	38.4	1.63	382

Year	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
2012, Combined	42,556	11,295	26.5	7,549	1,913	25.3	1.20	511
2013, Lapsed	24,159	1,716	7.1	4,201	311	7.4	-0.30	-72

Table 67. Annual results from Urban Angler Neighborhoods.

Year	Treatment Group			Control Group			Lift	
	# in Reconciled Mail List	# Purchased	% Response Rate	# in Reconciled Mail List	# Purchased	% Purchase Rate	Lift (%)	Increase # anglers
2008, lapsed	3,794	1,128	29.7	n/a	n/a	n/a	n/a	n/a
2009, lapsed	7,075	1,462	20.7	2,768	517	18.7	2.00	142
2009, non-renewal	3,846	932	24.2	2,558	551	21.5	2.69	104
2010, Combined	6,415	1,299	20.2	1,131	222	19.6	0.62	40
2011, Combined	4,930	1,891	38.4	819	301	36.8	1.60	79
2012, Combined	9,625	2,354	24.5	1,696	410	24.2	0.28	27
2013, Lapsed	5,771	422	7.3	1,019	59	5.8	1.52	88

Income Levels - Response rates and lift were attributed to neighborhood household income levels starting in 2010. Individuals with household incomes greater than $100,000 showed statistically significant lift in 2010 and 2011. Individuals with household incomes between $25,000 and $50,000 showed statistically significant lift in 2011 and 2012. Individuals with household incomes between $50,000 and $75,000 showed statistically significant lift in only 2011. No income level groups showed statistically significant lift in 2013. The analysis of this population demographic does not seem to yield much usable information. If anything, the marketing pieces sent in 2010 and 2011 arrived at times that were followed by favorable weather, so perhaps higher income individuals are more likely to respond when favorable weather conditions occur.

Gender and Age

Post-marketing surveys conducted in 2005, 2006 and 2009 provide information about different responses to marketing activities by gender. This work indicated that males responded better to broadcast marketing efforts, but the radio marketing effort was reduced in 2010 and 2011, and eliminated as of 2012. Previous work also indicated that females responded best to direct marketing pieces that provide specific angling tips and other guidance, but these types of mail pieces have not been used consistently. The marketing reports have not broken out response rates and lift by mail piece type according to gender. However, in years that a letter-type mail piece that included angling tips and other guidance was delivered, female response rates and lift were better (2007, 2011, and 2012). This information indicates that utilizing this type of mail piece specifically targeting females could be effective. The information gained thus far has not shown any specific item that could effectively target males. Response rates and lift were attributed to age groups starting in 2010. Across all years and age groups, there are very few differences in response rates. The only trend is that the older age groups (35-44, 45-54, 55-64) respond at a slightly higher rate, but lift does not follow this response rate trend. In 2010, no age group showed statistically significant lift, and in no year has the 35-44 age group shown statistically significant lift. The 55-64 age group showed statistically significant lift in 2011 and 2012, while the 25-34 and 45-54 age groups showed statistically significant lift in 2011 and 2013. For marketing planning, the only revelation regarding age groups is that the 35-44 set may not be a worthwhile target.

Past Purchase Patterns

Multiple analyses over the course of the marketing evaluations indicated that if an angler's most recent purchase was an annual license, they were more likely to purchase again. A more detailed review of this pattern indicates that consistently, between 61%-68% of annual resident licenses sold are purchased by anglers who had purchased that same type of license the previous year (Table 68). Further review of this pattern shows a consistent decay across years of

consecutive purchases of annual resident fishing licenses (Table 69). Additionally, comparisons between lapsed anglers (Tiers 1-8) and non-renewed anglers (Tiers A-H) consistently showed higher response rates and lift from non-renewed anglers. Purchase rates decline as you move down through these tiers, with the exception of Tiers 4/5 and D/E. Tiers 4 and D represent more recent, but fewer purchases, while Tiers 5 and E represent more purchases that were not as recent. Lift does not always track with response rate, however, it is important to remember that lift is a measure of the effectiveness of a marketing activity, while response rate is a measure of total sales. High sales years, and thus high revenue years, can occur at times when response rates are high but lift may be low. That may mean marketing was ineffective, but a more likely explanation is that factors other than marketing are driving sales.

Determining which particular purchase history pattern to target with a marketing program is less important than the decision to target non-renewed anglers instead of lapsed anglers. After that, the variety of potential population segments discussed throughout this document can provide insight regarding subsets of anglers from individual tiers to target, especially with regard to Tier H. Through time, Tier H and Tier 1 anglers have responded at similar rates, so individuals from those two tiers should be viewed as having similar priority in a potential target evaluation.

Table 68. Annual resident fishing license sales during 2001-2014 and buyer types.

License Year	Annual License Sales	First-Time Buyers*		Renewals		Returning Lapsers**	
		Number	Percent	Number	Percent	Number	Percent
2001	335,570	335,570	100		0	0	0
2002	320,793	103,480	32	217,313	68	0	0
2003	318,496	77,161	24	211,344	66	29,991	9
2004	302,997	59,115	20	205,481	68	38,401	13
2005	309,682	57,269	18	201,982	65	50,431	16
2006	304,412	53,175	17	200,743	66	50,494	17
2007	310,335	51,608	17	200,982	65	57,745	19
2008	287,991	43,099	15	192,792	67	52,100	18
2009	325,319	52,111	16	198,232	61	74,976	23
2010	298,811	40,751	14	203,659	68	54,401	18
2011	296,894	40,571	14	192,500	65	63,823	21
2012	317,713	46,659	15	198,344	62	72,710	23
2013	296,432	40,377	14	196,608	66	59,447	20
2014	285,502	39,144	14	179,919	63	66,439	23

*First time buyers are individuals with no previous history, but the database did not exist until 2001

**individuals in this column have a previous purchase history, but they did not purchase the preceding year

Table 69. Consecutive retention of annual fishing license buyers during 2001-2014.

License Purchase Year	Number of Buyers	Renewals in 2002		Renewals in 2003		Renewals in 2004		Renewals in 2005		Renewals in 2006		Renewals in 2007	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2001	335,570	217,313	65%	166,432	50%	133,825	40%	112,978	34%	96,364	29%	84,357	25%
2002	320,793			211,344	66%	160,344	50%	131,314	41%	109,808	34%	94,879	30%
2003	318,496					205,481	65%	158,677	50%	128,372	40%	108,801	34%
2004	302,997							201,982	67%	154,233	51%	126,858	42%
2005	309,682									200,743	65%	155,315	50%
2006	304,412											200,982	66%
2007	310,335												
2008	287,991												
2009	325,319												
2010	298,811												
2011	296,894												
2012	317,713												
2013	296,432												
2014	285,502												

Table 69 continued.

License Purchase Year	Renewals in 2008		Renewals in 2009		Renewals in 2010		Renewals in 2011		Renewals in 2012		Renewals in 2013		Renewals in 2014	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2001	72,917	22%	66,044	20%	58,860	18%	52,714	16%	47,705	14%	42,824	13%	38,848	12%
2002	81,100	25%	72,950	23%	64,564	20%	57,562	18%	51,938	16%	46,453	14%	41,660	13%
2003	91,506	29%	81,561	26%	71,644	22%	63,506	20%	57,041	18%	50,757	16%	44,980	14%
2004	104,329	34%	91,967	30%	79,852	26%	70,221	23%	62,728	21%	55,498	18%	48,611	16%
2005	122,910	40%	106,382	34%	90,863	29%	79,107	26%	70,044	23%	61,496	20%	53,175	17%
2006	148,826	49%	125,078	41%	104,562	34%	89,624	29%	78,615	26%	68,455	22%	58,418	19%
2007	192,792	62%	153,335	49%	123,738	40%	103,651	33%	89,729	29%	77,187	25%	64,896	21%
2008			198,232	69%	150,154	52%	121,406	42%	103,202	36%	87,375	30%	72,375	25%
2009					203,659	63%	153,094	47%	125,559	39%	103,491	32%	83,711	26%
2010							192,500	64%	150,143	50%	119,817	40%	94,672	32%
2011									198,344	67%	147,726	50%	112,293	38%
2012											196,608	62%	139,666	44%
2013													179,919	61%
2014														

The Welcome to Iowa Fishing program that was tested in 2011 and evaluated in 2012 showed promise. The selected individuals were sent the welcome packet in 2011, and then sent a reminder in 2012. The 2012 evaluation showed from program targets that was statistically significant and was above the break-even threshold, indicating it was a very successful effort.

Aggregate purchase history patterns for Iowa provide some insight regarding when potential target lists should be queried, and when mailings should occur. Early purchasers comprise about 15% of Iowa anglers, and they will have purchased a license by the end of January. Annual sales will reach 25% of the yearly total somewhere between March 15 and April 2, depending on how quickly spring arrives. Sales will reach 50% of the annual total by May 15, 70% by June 1, 80% by July 1, 90% by July 20, and 95% by August 10. This information indicates that initial classification should occur in April, with a second check against licenses purchased by May 15. Anglers seem to respond to temperatures above 60 degrees, and average May temperatures are at that benchmark. It is not surprising that past mailings that occurred in May had more consistent results than April mailing dates (Table 70). If a direct mail campaign continues in the future, a mid- to late May mailing date will allow a printing run to occur and mail to be delivered prior to Memorial Day weekend. This will also allow Iowa DNR to capitalize on advertising being run by commercial interests and vendors promoting outdoor activities that include fishing.

More thorough investigations of purchase history patterns should be undertaken and should include an analysis of the timing of purchases by individuals. Patterns, such as purchase timing, should be assessed to see if there exists a segment of the population that consistently purchases early/late. Early purchasers that are missing could be targeted, as well as attempting to influence late purchasers to buy early.

Table 70. Annual response rates and mailing dates from marketing efforts.

Year	Target population	Mailing Date	Response rate
2005	I-380 corridor	May 9	24%
2006	I-380 corridor	May 15	26%
2007	7 metropolitan counties	May 15	30%
2008	Statewide, lapsed anglers and non-renewals	April 28	16%
2009	Statewide, lapsed anglers and non-renewals	May 8	22%
2010	Statewide, lapsed anglers and non-renewals	May 22	21%
2011	Statewide, lapsed anglers and non-renewals	April 27	41%
2012	Statewide, lapsed anglers and non-renewals	April 26	27%
2013	Statewide, lapsed anglers only	April 2	7%

RBFF has chosen to continue to target lapsed anglers as the base marketing plan. The high volume of sales that occurred in 2012 provided an opportunity to target non-renewed anglers in 2013. Considering the results of the 2013 program and the propensity of non-renewals to respond to marketing efforts, this was a significant misstep. Iowa's research indicates that it is more productive to undertake efforts to prevent anglers from lapsing, an effort was missing in 2013. Iowa DNR should prepare in advance for the next big sales year, and plan to aggressively market to non-renewals in the following year. Future efforts should focus more resources on preventing the lapse from occurring.

Additional Studies of Angler Purchase Behaviors and Opinions

A number of studies beyond Iowa have also been conducted over the past twenty years which provide insight into angler purchasing behaviors and participation in fishing. Their findings are also relevant to Iowa's fishing population and therefore to Iowa DNR's marketing efforts. They are summarized below for your convenience.

First time and Repeat Angler Analysis

RBFF has undertaken multiple marketing efforts to increase fishing participation and fishing license sales in numerous states, including Iowa. One of their discoveries has been that understanding angler characteristics is important to develop successful angler recruitment and retention strategies. High angler "churn", or movement into and out of the fishing license buying population, has been a consistent issue for state agencies. This analysis was carried out to

determine if differences exist between first-time anglers and those who have been repeat anglers in recent years (Appendix 19; RBFF 2013b). Repeat anglers are not necessarily "avid" anglers, a term used throughout this document. Repeat anglers are either "avid" or "inconsistent", and in this section are compared against first-time, or newly recruited anglers.

Methods

RBFF acquired and analyzed resident annual license sales record from 2008-2012, and constructed a license purchase history for each angler in the database. Lifetime license purchasers and individuals exempt from needing to purchase an annual license (e.g. youth) were excluded from the analysis. Street addresses for each angler were geocoded, and each angler was attributed with ESRI Tapestry data for lifestyle, urbanization and income characteristics based on the neighborhood in which they live.

First-time anglers were defined as those who purchased in 2012, but not from 2008-2011. Some Iowa purchasers may have had a purchase history prior to 2008, but those records were excluded from this analysis. Repeat anglers for this analysis purchased licenses in 2012, and in at least three of the four preceding years. Characteristics of anglers who lapsed more than one year were not included in the analysis or the report.

Results

Iowa sold fishing licenses to 579,333 people from 2008-2012 (Table 71). The greatest portion, 37.8%, bought a license only once during this time, and the second largest group (19.6%) bought only two out of five years. These are the individuals who fuel the churn. There were 275,517 licenses sold in 2008, and 299,590 sold in 2012, resulting in an increase of 8.7% during the study.

Table 71. Five-year frequency of license buying by all anglers between 2008 and 2012.

Number of Years Purchased	Number of Anglers	Percent of Anglers
One year out of five	218,805	37.8
Two years out of five	113,681	19.6
Three years out of five	78,763	13.6
Four years out of five	64,925	11.2
Five years out of five	103,159	17.8
Total	579,333	100

Source: RBFF 2013b

The analysis looked at how previous buying patterns influenced the likelihood of buying again in the future (Table 72). First-time anglers purchasing in 2011 lapsed at a rate of 60.4% in 2012, while anglers with multiple purchases including 2011 only lapsed at a rate of 25.4% in 2012. The five-year purchase history breakdown of all anglers who purchased in 2012 shows that repeat anglers are the majority (50.8%), followed by first-time buyers (18.6%) (Table 73).

Table 72. Lapse rate of first-time and repeat anglers who bought a license in 2011.

Angler Group	Anglers in 2011	Lapsed in 2012	Lapse Rate
First-time anglers in 2011	55,857	33,718	60.4%
Repeat anglers in 2011	226,950	57,703	25.4%
Total	282,807	91,421	32.3%

First-time anglers are those who bought in 2011 but not between 2008-2010.
Source: RBFF 2013b

Table 73. Purchase patterns of all anglers who bought a license in 2012.

Years Purchased	2008	2009	2010	2011	2012	Number of Anglers	Percent of Anglers
5	X	X	X	X	X	103,159	34.4
4		X	X	X	X	21,493	7.2
4	X		X	X	X	7,290	2.4
4	X	X		X	X	9,294	3.1
4	X	X	X		X	10,974	3.7
3			X	X	X	15,819	5.3
3		X		X	X	7,287	2.4
3	X			X	X	4,905	1.6
3		X	X		X	6,626	2.2
3	X		X		X	3,328	1.1
3	X	X			X	6,903	2.3
2				X	X	22,139	7.4
2			X		X	8,603	2.9
2		X			X	8,816	2.9
2	X				X	7,142	2.4
1					X	55,812	18.6
Total						299,590	100

Source: RBFF 2013b

Additional analyses showed few differences between repeat and first-time buyer. They purchase the same type of license (annual), purchased the same number of privileges (one), spent the same amount of money, had the same average income, and basically represented the same Tapestry segments. The average age of a first-time angler was 38.7, while repeat anglers were 44.0. The gender ratio of repeat anglers was approximately 85 male:15 female, while the gender ratio of first-time anglers was 60 male:40 female. Forty percent of repeat anglers reside in rural areas, while only 31% of first-time anglers reside in rural areas. This difference is made up in more first-time anglers residing in metropolitan areas, urban outskirts, and suburban locations.

Discussion and conclusions

This assessment covered the period of 2008-2012, but Iowa's license database contains information back to 2001, so a portion of these "first-time" anglers may have had a purchased history with Iowa prior to 2008. Additionally, this assessment focused on 2012 license buyers, and 2012 was an extremely high sales year for Iowa. Thus, the results may be skewed since many 2012 purchasers would not have purchased in an average year. The comparison of 2008 to 2012 should be viewed as the breadth of potential variation, a nearly 10% difference, assessing a very low sales year against a very high sales year.

This analysis did not reveal much new information about repeat anglers. These anglers comprise a majority of annual license buyers, and their characteristics are similar to what has been seen from previous assessments of Iowa fishing license purchasers. As expected, avid anglers (every year purchasers) comprise roughly one-third of annual purchases. The interesting finding for 2012 was that the remaining portion of repeat buyers, those that purchase four out of five years, comprise an additional 16% of annual purchases. Taken together, repeat anglers account for only 29% of license buying population in this study, but account for 50% of annual purchases.

This study did provide some new insights regarding first-time anglers. First-time anglers are very numerous, as individuals who purchased only once during this five-year window (and thus had to be a first-time angler in that year) accounted for nearly 40% of the license buying population. In any given year, they generally are responsible for 20% of license purchases. As a group, they are younger than repeat anglers and are more likely to live in or near an urban area.

While only 15% of repeat anglers are female, 40% of first-time anglers are female. First-time anglers are also more than twice as likely to lapse as repeat anglers.

This study reinforces that recruitment of new anglers continues to be successful. The high number of first-time anglers indicates that some mechanism is at work to get them to go fishing. The causal factors are not identified, but the result is that they are choosing to buy a license.

This study also reinforces that retention of license buyers continues to be an issue in Iowa. There are two factors that illustrate this point. The first is that the small number (29%) of repeat anglers account for over 50% of annual sales. To boost annual sales totals, a greater portion of the license buying population should be transitioned into this subset. The second factor is that newly recruited first-time anglers are not coming back to fishing in following years to the degree that repeat anglers are. Targeting retention outreach activities at this group would likely be fruitful.

The results of this analysis suggest the following plan of action to improve angler retention:

- Identify purchases made by first-time anglers, and respond immediately with a "Welcome to Iowa fishing" packet
- Target first-time and inconsistent anglers (2- or 3-years out of 5) with license renewal notifications, perhaps at the beginning of the year.
- During spring (May) repeat renewal notifications (or another reminder piece) to non-purchasers, either all non-purchasers or a target population, in an effort to move them into the repeat purchasers category.
- Past initiatives have shown that instructive mail pieces (biologist letters) are effective with female anglers, and these should be sent to first-time female anglers.

Hunters' and Anglers' Opinions on Factors Related to License Purchasing Behavior : A Comparison of Avid, Inconsistent, and One-time License buyers

The Iowa DNR contracted with Responsive Management to conduct a survey of Iowa hunters and anglers, to discern more about what influenced purchase behavior of various segments of the license buying population (Appendix 20; Responsive Management 2013b).

Methods

Responsive Management (2013b) acquired and analyzed resident annual license sales record from 2005-2012, and constructed a license purchase history for each hunter and angler in the database. Both hunters and anglers were surveyed in this project, but only results from the angler surveys will be presented here. Avid anglers were defined as those who purchased every year from 2005-2012, and inconsistent anglers were defined as those who purchased 3-6 time from 2005-2012. One-time license buyers for this survey were selected only from purchasers from 2008-2012.

A telephone survey was used to collect data from individuals within each of the avidity groups. A total of 918 angler surveys were completed, with 309 avid anglers surveyed, 305 inconsistent anglers, and 304 one-time anglers.

Results

Over 70% of anglers rated fishing in Iowa as excellent or good, and over 80% indicated that they were very satisfied or somewhat satisfied with their fishing experiences. Anglers were asked to select what the most important reason was for why they participated in fishing, and the most popular reasons were 1) being with family and friends, 2) for the sport and recreation, 3) for relaxation, 4) to be close to nature, 5) to catch fresh fish to eat, and 6) to catch a large and/or trophy fish. Social reasons, including to be with family and friends, for the sport and recreation, and for relaxation were most popular among anglers. One-time buyers most often fished to be with family and friends, while avid anglers more often fished for sport and recreation.

Anglers were also asked about factors that constrained, or limited their participation in fishing. Areas in which anglers were dissatisfied included not enough fish, the weather, and not enough access. When asked why they had not bought a license, anglers indicated that work obligations and family obligations were most limiting, as well as having other interests that were more important. Inconsistent anglers also mentioned factors relating to the resource, including poor

water quality, not enough fish, access problems and crowding. One-time anglers were more constrained by not having someone to fish with, rather than things related to the resource.

Anglers were questioned further about various factors and messages that might encourage them to purchase a fishing license. The top factors that would influence inconsistent and one-time buyers to purchase a license were if they were asked by a child to go fishing, or if they were invited by friends/family members. Messages that would be effective in influencing anglers to buy a license were "Make memories. Take your family fishing." and "Get close to nature. Spend time in Iowa's great outdoors when you go fishing." Inconsistent anglers also indicated they would like to receive information on local fishing spots, being reminded that fishing helps them connect with nature, being able to learn ways to catch more fish, more specific tips on how/where/when to fish, and being able to spend time by themselves fishing. Anglers indicated the methods by which they would like to receive information were from the DNR web site, letters or emails from the respondent's local DNR biologist with fishing tips, DNR news releases, and postcards. When asked about the DNR's weekly fishing report, 40% of avid anglers indicate they use that information, compared with 26% of inconsistent anglers and only 10% of one-time anglers.

Anglers were also asked if the license purchase process limited their participation, and the overwhelming majority indicate that the license purchase process was not limiting. Approximately 75% of anglers purchase their license in a store, and over 90% of anglers rated their license purchase experience as excellent or good. Anglers did respond favorably to new methods which might make the license purchasing process more convenient, especially an automatic renewal option with their initial credit card purchase. Inconsistent and on-time anglers responded more favorably than avid anglers to a direct mail renewal option, online purchases, and cell phone apps.

Demographic information and other angler characteristics were collected in order to further elucidate where differences among avidity groups might occur. The male:female ratio was roughly 80:20 among avid anglers, 70:30 among inconsistent anglers, and 60:40 among one-time purchasers. Avid anglers also tend to be older than inconsistent and one-time anglers. Avid anglers fish with family less often than inconsistent and one-time anglers, but fish with friends more often. Avid anglers exhibited the highest rate of fishing alone, while one-time anglers rarely fish alone. Across all angler groups, participants also partook in hunting, camping, biking and boating for fun, relaxation, entertainment or healthy activities.

Discussion and conclusions

Responsive Management indicates that the avidity groups analyzed (one-time, inconsistent, avid) follow the progression of anglers along the continuum from initiation to fully engaged participant. As individuals move along this progression, their motivations for participation change, and thus strategies and communications need to be tailored for each group to achieve maximum effectiveness.

One-time anglers participate primarily for social reasons. Their initial license purchase occurred because someone invited them to go fishing, or they were asked by someone (e.g., a child) to be taken fishing. They are very loosely affiliated with the activity. Messages and outreach to this group should focus on the social and familial aspects that likely prompted their initial purchase, and should simply encourage further participation. Messages that would be effective in influencing one-time anglers to buy a license again are "Make memories. Take your family fishing." and "Get close to nature. Spend time in Iowa's great outdoors when you go fishing." Mechanisms for disseminating information to these anglers include broadcast/general communications, utilizing the DNR website, a letter or email from their local DNR biologist with fishing tips for their area, or a postcard.

Inconsistent anglers also participate for social reasons, but they are more strongly tied to the activity, and they desire the resources to improve their skills and success. Access, crowding, and poor-quality resources are constraints to their participation. They want more positive experiences with this activity, and as their skill and success increase, their dependence on others to initiate the activity decreases. Messages and outreach to this group should focus on skill development and expert tips that will enhance the participant's likelihood of success. Messages that would be effective in influencing inconsistent anglers to buy a license are "Make memories. Take your family fishing." and "Get close to nature. Spend time in Iowa's great outdoors when you go fishing." Mechanisms for disseminating information to these

anglers include utilizing the DNR website, a letter or email from their local DNR biologist with fishing tips for their area, or a postcard. Messages and outreach in more specialize venues will also reach these anglers.

Avid anglers participate because they are strongly tied to the sport, but providing quality services to them will insure that they continue to participate. They benefit from being provided specific information, such as fishing hot spots. They will likely respond to the same messages that would be effective for the other avidity groups, but messaging that encourages them to help others participate should also be disseminated. As Responsive Management indicated "The evidence is overwhelming that the route of initiation in which a novice is encouraged, invited, and mentored by another person is the best way to increase participation and license sales. Messages that link the future of hunting and fishing to current avid hunters' and anglers' encouragement of others will be effective at this stage."

Iowa is providing quality fishing experiences to anglers. Across all avidity groups, 80%-86% of anglers were satisfied with their fishing experiences, and one-time anglers were satisfied at a rate of 76%-82%. The lack of avidity by one-time and inconsistent anglers is not a function of poor fishing, it is a social issue. Improving water quality and fish populations do remain important goals, however.

Anglers indicated that an automatic renewal option would be welcomed, and it would be an effective way to encourage license sales. Cross marketing with other activities popular with anglers, such as hunting, camping and boating, may also be an effective way to increase license sales.

This study indicates that when the DNR undertakes general, or broadcast, advertising related to fishing, it should focus on messaging such as "Make memories. Take your family fishing." and "Get close to nature. Spend time in Iowa's great outdoors when you go fishing." These messages tie in to the social and familial aspects that work for all avidity groups, and they raise basic awareness in regard to the sport of fishing.

Direct marketing efforts require differential messaging for different patterns of purchasing behaviors. An initial stage of direct marketing for one-time anglers might be reminiscent of the "Welcome to Iowa Fishing" packet, with a tip sheet from their local biologist. Inconsistent anglers should be sent information that reminds them to purchase a license, and includes tips that will improve their skill and success. Further analysis of the timing of fishing license purchases by these two groups should be undertaken, to determine the appropriate time to send reminder email or direct mail regarding purchasing a fishing license.

Avid anglers are the core constituency who regularly provide the financial support which allows the continued operation of the agency. This group should be thanked for their continued participation, and should be encouraged to mentor other anglers.

The license buying process does not appear to be an important hindrance to fishing participation. In fact, the high portion of anglers who purchase at retail stores indicates that anglers prefer to interact with retail specialists during the purchase process, perhaps trying to glean information about fishing spots or new tackle.

New markets to investigate for potential cross marketing to gain more fishing license purchasers include hunters, boaters, and campers. Potential mechanisms for this cross marketing include integrating annual fishing forecasts into state park web pages, including fishing and lake information into park camping reservation communications, and creating signage at parks with lake maps and fishing information.

Conclusions and recommendations for future actions

Iowa is well positioned to grow its base of fishing license buyers, because many Iowans have fished in the past. Since 1980, youth participation in fishing in Iowa has been consistent and high. During that time, youth (ages 5-16) have participated at rates ranging from 48% to 55%, and the average rate of participation was 51%. Making changes to keep people fishing, in addition to getting people back into fishing, will likely be a fruitful undertaking.

Surveys (USFWS 1982, 1987, 1993, 1998, 2003, 2008, 2013) indicate that youth in Iowa are consistently being recruited to the sport of fishing. Retention of these young anglers as they transition to adulthood is low, and this is an area in

need of greater attention. A review of Iowa's marketing program should be undertaken to determine if changes in strategy could assist in transitioning youth anglers into adult license buyers.

Renewals by the previous year's anglers are the largest source of license renewals. The portion of the angler population that are repeat anglers is small (29%), but those repeat anglers account for over 50% of annual sales. Thus, expending effort to retain these customers is vitally important. Future actions should focus maximal effort on preventing anglers from lapsing. Actions that may aid in this retention effort include providing more reminders and encouragement to go fishing and more information about where they will have a high probability of catching fish locally.

High volume sales years, such as 2012, provide opportunities to aggressively market to non-renewed anglers in the following year. In 2013, RBFF chose to target anglers who had lapsed in 2012 - anglers who chose not to fish in a year that provide unprecedented external stimuli to participate in fishing. This was a significant missed opportunity, considering the results of the 2013 lapsed angler program and the propensity of non-renewals to respond to marketing efforts. Undertaking efforts to prevent anglers from lapsing is vitally important, and such efforts were missing in 2013. Iowa DNR should prepare in advance for the opportunities that the next big sales year will provide, and must plan to aggressively market to non-renewals in the following year.

When reviewing marketing efforts and results, it is important to remember that lift is a measure of the effectiveness of a marketing activity, while response rate is a measure of total sales. Lift does not always track with response rates, but a high response rate with no lift may still mean high revenue for an agency.

Future investigations of purchase history patterns should include an analysis of the timing of purchases by individuals, to see if there exists a segment of the population that consistently purchases early/late. Early purchasers that are missing could be targeted, as well as attempting to influence late purchasers to buy earlier.

Direct Mail and Email Campaigns

The most consistent and productive marketing efforts have been to contact non-renewals during the peak fishing period in the spring. These efforts always out-perform marketing to lapsed anglers. The future actions should emphasize preventing the lapse from occurring. Research to optimize the effectiveness of these efforts should include assessing the timing of purchases by individual anglers, identifying if patterns exist, and scheduling renewal reminders to coincide with when anglers have historically purchased.

Past marketing efforts have shown that renewal notice letters and postcards are effective, and that following these up with and email improves their effectiveness. Also, a localized renewal letter that provides tips for where and how to fish, may be highly effective, and should be tested. If necessary, this effort could be pared down to target first-time female anglers, as that purchase group seems to be most likely to respond to this method of outreach. Continuing assessments of email and renewal postcards to males may also be worthwhile, in conjunction with other demographic filters to limit the size of the target population. If effective, this protocol could also be tested on inconsistent license purchasers, using data from past purchase behaviors to identify those anglers most likely to respond.

Email reminders alone (with no direct mail) have shown similar response rates, and better return on investment than direct mail. This is largely because email campaigns are very cost effective, and require low response rates to be profitable. These types of campaigns are becoming more realistic for Iowa DNR. The agency must make it a priority to acquire email addresses for as many customers as possible. The first step was completed in 2014 when the DNR began requiring an email address for online sales. However, since most anglers prefer to purchase their fishing license at the store, and online sales comprise only 3%-5% of annual sales, expanded efforts to acquire email addresses must be undertaken.

Avid anglers are the core constituency who regularly provide the financial support which allows the continued operation of the agency. This group should be thanked for their continued participation, and should be encouraged to mentor other anglers. As of 2015, the potential exists to identify anglers who have purchased a fishing license for at least 15 consecutive years (2001-2015). There were 4,774 anglers who were already qualified by having purchased a 3-year license in 2013 or 2014, and there are a total of 38,848 with the potential to purchase their fifteenth consecutive license

in 2015. A postcard campaign could have been undertaken that thanks these anglers for their continued support once they purchase their 2015 license, and which encourages them to enhance their fishing legacy by mentoring a new or inexperienced angler in the coming season. We have now had such avid anglers for a decade more, as of 2025, with long histories of license purchase.

Weather has a dynamic impact on fishing license sales in Iowa, and is the most important factor in an angler's decision to go fishing. The results of any marketing effort must be viewed within the context of the influence of weather. A refinement of the previous analysis of the relationship between weather and fishing license sales should be undertaken, and should include the March-June period. The Southwick analysis indicated that March weather tends to be a bellwether for early/late spring, and fishing license sales generally trend up starting around April 1. Sales will reach 50% of the annual total by May 15, and 70% by June 1. Anglers seem to respond to temperatures above 60 degrees, and average May temperatures are at that benchmark. It is not surprising that past mailings that occurred in May had more consistent results than April mailing dates. This information indicates that initial identification on non-renewing anglers should occur in April, with a second check against licenses purchased by May 15 to finalize the non-renewal target list. A mid- to late May mailing date will allow a printing run to occur and mail to be delivered prior to Memorial Day weekend. This will also allow Iowa DNR to capitalize on advertising being run by commercial interests and vendors promoting outdoor activities that include fishing. If there are indications/predictions of cooler or wetter than average weather, perhaps marketing efforts should be slowed down to preserve financial resources and maximize the utility of marketing efforts during periods of warmer and drier weather.

Broadcast Media Campaigns

A basic tenet of marketing is that more impressions lead to more awareness, which results in a greater likelihood of action by the consumer. Post marketing surveys in 2005, 2006 and 2009 indicated that anglers do notice fishing advertising, and their responses showed a linear relationship between the number of advertisements recalled and purchase behavior. Broadcast advertising, such as radio and television, is an effective way to make more impressions on more potential fishing licenses purchasers.

RBFF has used marketing principles to implement an advertising campaign on television, in magazines and newspapers, on the radio, and via direct mail. The results of the 2009 survey, conducted 6 months after the marketing period ended, indicated little recall of radio advertisements, and it seems this finding resulted in RBFF discontinuing their radio advertising campaign. This result ran counter to the findings of the 2006 post-marketing survey in Iowa, in which the most often recalled advertisement was the "Take Me Fishing" radio ads.

The broadcast media campaign likely has a substantial and unquantified positive effect on license sales, as was evidenced by recall rates to their advertising messages. Any influence that can be exerted on RBFF to renew or continue its general advertising campaign should be undertaken, particularly to reinvest in locally-selected radio advertising in Iowa.

Messages that should be utilized in broadcast media campaigns should include "Make memories. Take your family fishing." and "Get close to nature. Spend time in Iowa's great outdoors when you go fishing." Advertising should be focused on the April 1 - June 1 timeframe, when 45% of annual license sales occur.

Recommendations for Future Action

Given the legacy of fishing in Iowa, continuing to recruit, retain, and re-activate anglers is an essential function to support the connection between Iowans and their publicly owned aquatic resources. Based on the many lessons learned from Iowa DNR's and others' marketing efforts to anglers, this report concludes with a number of recommendations for action by the Iowa DNR and its partners:

1. The future course of action should focus maximal effort on preventing the angler license purchase lapses from occurring. See the example of 2008 on page 37, where a negative $40,000 ROI could have potentially been a positive ROI with different targeting.
2. Continue to collect and utilize email addresses to the greatest extent possible.
3. Prepare in advance for the next big sales year, and plan to aggressively market to non-renewals in the following year.

4. Providing quality fishing opportunities close to home for our increasingly urban population must be a primary goal for Iowa DNR. To engage Iowa's increasingly city-based population in fishing in the future, it is imperative that providing community fishing opportunities be a priority.
5. The Welcome to Iowa Fishing program should be restarted and rigorously evaluated. Identify purchases made by first-time anglers, and respond immediately with a Welcome to Iowa fishing packet.
6. Past initiatives have shown that instructive mail pieces (biologist letters) are effective with female anglers, and these should be sent to first-time female anglers. Female anglers comprise 40% of the first-time angler population, but only 15% of the avid angler population. Converting these individuals into repeat anglers is vitally important.
7. Considerable thought and experimentation should be undertaken to determine how much marketing to avid anglers is necessary to maintain that base. A thank you program that identifies 15-year consecutive purchasers, which includes messaging that encourages them to establish a fishing legacy via mentoring, should be undertaken and evaluated.
8. A refinement of the previous analysis of the relationship between weather and fishing license sales should be undertaken, and should include the March-June period.
9. Future research to optimize the effectiveness of direct marketing efforts should include assessing the timing of purchases by individual anglers, identifying if patterns exist, and then scheduling renewal reminders to coincide with when anglers have historically purchased.
10. Target first-time and inconsistent anglers (2- or 3-years out of 5) with license renewal notifications, perhaps at the beginning of the year. During spring (May) repeat renewal notifications (or another reminder piece) to non-renewers, either all non-renewers or a target population, in an effort to move them into the repeat purchaser category.
11. Implement a general advertising campaign, particularly to reinvest in proven radio advertising in Iowa. Survey data showed that the high recall rate of radio advertising indicates that targeting top local stations is an effective mechanism for reaching constituents.
12. The Tapestry analysis showed the tendency for small segments from wealthy, urban/metropolitan areas to boom periodically. Individuals from these areas may be responding to the combination of agreeable weather, a particular type of marketing message, and perhaps simply a cue to consider fishing as a get-away from their city life. While this is not low-hanging fruit, it may be worth investigation after other segments have been targeted and methods refined.
13. Remember that weather has a dynamic, but predictable, impact on fishing license sales in Iowa. The results of any marketing effort must be viewed within the context of the influence of weather.

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