

IAFWA-ASA Data Mining Project

Initial Maryland Findings

November 7, 2006

This analysis, funded by a Sport Fish Restoration multi-state conservation grant awarded jointly to the Association of Fish and Wildlife Agencies (AFWA) and the American Sportfishing Association (ASA), is designed to help Maryland improve efforts to increase fishing licenses sales and revenues. This report represents the first step, which is an initial review of Maryland’s fishing license data by Southwick Associates, Inc., the grant’s subcontractor. The results are intended to help Maryland understand basic license sales trends, and generate questions for additional investigation. A second step will be a second round of data analysis based on questions Maryland has regarding the contents of this report. We encourage Maryland to consider its current or potential future marketing efforts when reviewing this document. Southwick Associates, Inc. will be available by phone or email to answer any questions (904-277-9765, rob@southwickassociates.com) and to discuss follow-up ideas.

The analysis below is based primarily on Maryland residents. The data had some quality issues with the gender information. Therefore, questionable data are labeled as “Unknown.” The unknowns only affect interpretation of the gender statistics and no other analyses in this report. The tables primarily focus on residents who bought a resident license for fishing between 2001 and 2005.

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Section 1: Basic License Sales Information

Tables 1 through 4 present initial information regarding Maryland's 2005 license sales for all buyers. This is a basic look at Maryland's license sales, which mirrors the examinations traditionally available prior to the advent of electronic license systems. Additional licenses were sold that are not represented here because they represented less than 0.1 percent of sales. Table 1 lists only the top 33 of the 162 types of licenses offered in Maryland.

**Table 1. 2005 Licenses Sales, by Type of Licenses Sold
Resident and Non-Resident**

License	Percent
Resident Non-Tidal	33.7%
Resident Bay Sport	26.3%
Consolidated Bay Sport Boat	9.4%
Recreational Crabbing w/Bay License	6.2%
Non-Resident Bay Sport	5.0%
Resident Senior Consolidated	4.3%
Recreational Crabbing License	2.2%
Consolidated Bay Sport Boat NR	2.2%
Bay Sport 5-Day NR	2.1%
Non-Res. Non-Tidal (PA)	1.2%
NR Recreational Crabbing License	1.2%
Recreation Crabbing w/ Bay Lic. (Sr)	0.6%
Non-Tidal 3-Day NR (PA)	0.5%
Non-Res. Non-Tidal (WV)	0.4%
Non-Tidal 3-Day NR (VA)	0.4%
Non-Res. Non-Tidal (VA)	0.4%
Recreational Crabbing Boat License	0.4%
Bay Sport 5-Day	0.3%
Non-Res. Non-Tidal (DE)	0.3%
Non-Tidal 5-Day	0.2%
Non-Res. Non-Tidal (DC)	0.2%
Recreational Crabbing Boat Lic. (NR)	0.2%
Non-Tidal 3-Day NR (WV)	0.2%
Non-Tidal 5-Day NR (VA)	0.1%
Recreational Crabbing License (Sr)	0.1%
Non-Tidal 3-Day NR (OH)	0.1%
Non-Tidal 5-Day NR (PA)	0.1%
Non-Tidal 3-Day NR (NJ)	0.1%
Non-Tidal 3-Day NR (NY)	0.1%
Non-Tidal 3-Day NR (FL)	0.1%
Non-Tidal 3-Day NR (DE)	0.1%
Non-Res. Non-Tidal (OH)	0.1%
Non-Tidal 3-Day NR (DC)	0.1%

Table 2. 2005 License Distribution

	<u>Percent</u>
Resident	80.2%
Non-Resident	18.8%
Unknown	1.0%

Table 3. 2005 Licenses Sold by Gender

	<u>Resident</u>	<u>Non-Resident</u>	<u>Unknown</u>
Female	5.4%	0.1%	
Male	46.3%	0.9%	
Unknown	28.5%	17.9%	1.0%

Table 4. 2005 Age of License Buyers at Time of Purchase

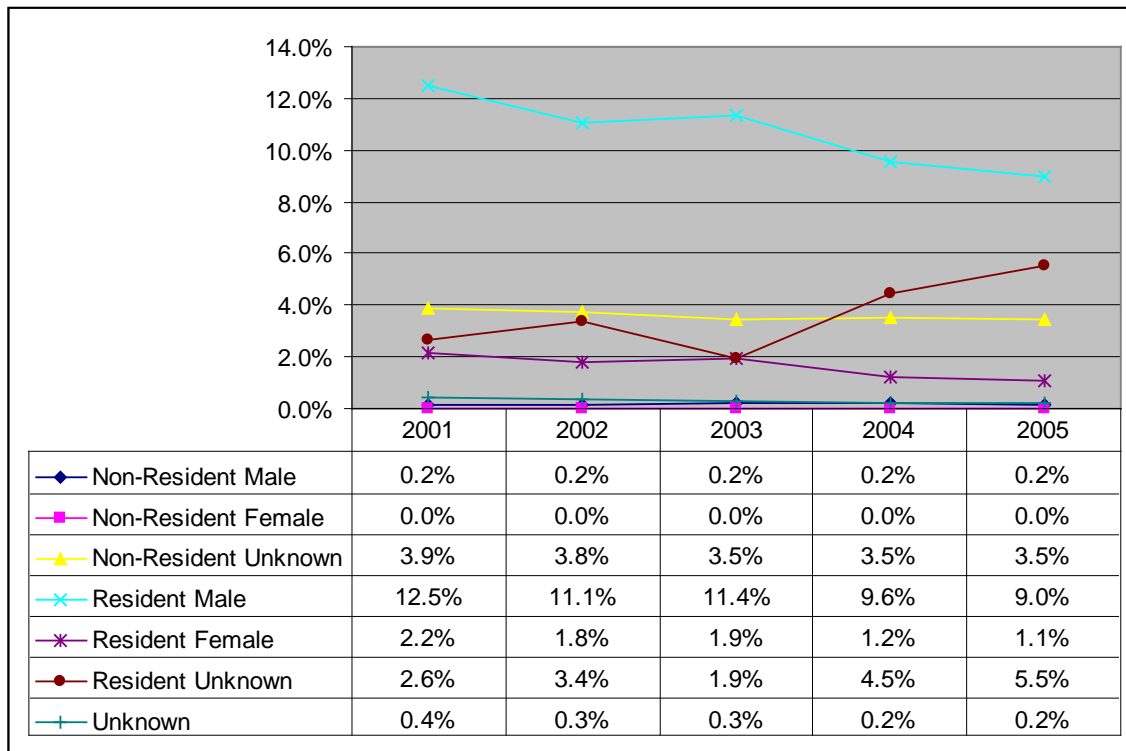
Age	<u>All Buyers</u>	<u>Non-Resident</u>	<u>Resident</u>	<u>Unknown</u>
16 and under	0.1%	0.1%	0.1%	0.1%
17 to 19	2.9%	2.1%	3.1%	0.1%
20 to 29	15.8%	14.6%	16.1%	3.9%
30 to 39	19.5%	20.8%	19.2%	15.5%
40 to 49	26.2%	26.1%	26.3%	29.5%
50 to 59	18.6%	19.7%	18.3%	27.0%
60 to 69	11.2%	12.0%	11.0%	16.8%
70 and older	5.6%	4.6%	5.8%	7.2%
Total	100.0%	100.0%	100.0%	100.0%

Tables 1-4 above give us a general one-year picture of license sales in Maryland, but nothing very detailed, nothing new, and nothing that permits a focused marketing effort. Next, we will go into more detail by looking at multi-year trends.

Section 2: Licenses Sold, 2001-2005

By looking at multiple years of data, we can identify license sales trends.

Table 5. License Sales Trends, 2001-2005 (Y axis = the percentage of the total population of 2001-2005 license buyers)



Licenses show a decrease from 2001 to 2005 except for the Resident Unknown category. It appears that the data issues with the unknown licenses became worse in 2004 and 2005, and may cause the declines seen in sales of other license types in those two years. This table is presented to maintain comparability with similar analyses being conducted for other states. Regardless, the high percentage of “unknown” licenses makes it impossible to effectively analyze trends in license sales based on residence and gender. However, in terms of license buyers, 2005 numbers were 11.1 percent lower than 2001.

The overall “known” decline is mirrored in many other states, and may reflect a shift away from fishing and towards others forms of recreation. This is speculative reasoning, and is only provided as an observation based on reviews of other state license sales trends.

Even though overall sales show slight declines, there must be customer segments experiencing increases while others have above-average declines. Which segments are these?

Section 3: Lifestyle Analyses

People's preferences and activities vary based on income, age, urban/rural lifestyle, where they are in life (single, family, empty-nest, retired, etc.) and more. A 30 year old white male's preferences and purchases will vary if he is a New York attorney compared to a Chesapeake fishing guide, for example. This type of information is not available from the typical statistics provided by Maryland's electronic license database. To gain a better understanding of who is more likely to buy or not buy a license, we use TAPESTRY® lifestyle data:

ESRI of Arlington, VA provides the TAPESTRY® data service. TAPESTRY® is built from Census Bureau data and other sources. From the ESRI website: "The Community Tapestry segmentation system provides an accurate, detailed description of America's neighborhoods. U.S. residential areas are divided into 65 segments based on demographic variables such as age, income, home value, occupation, household type, education, and other consumer behavior characteristics." Using the ESRI service, we appended the complete set of data for purchasers of Maryland license purchasers with TAPESTRY® information. The resulting information explains the lifestyle typical to people who live on the same block or local neighborhood as the license purchaser. The appended data allow us to learn more about the lifestyles of people who purchase fishing licenses and gain a better understanding of who does and does not buy fishing licenses. The results will allow Maryland to better understand the license buying market and to become more focused and cost-effective in its marketing and recruitment programs.

TAPESTRY® divides the public into 12 major groupings called "LifeModes," each of which has sub-groupings referred herein as "segments." In all, there are 65 segments available. We give abbreviated descriptions of each LifeMode and segment when first presented, but encourage the reader to review the attached .pdf for more complete descriptions.

Who is Likely to Buy a Fishing License?

Let's take an initial look at the top license-purchasing LifeMode categories in 2005. These are ranked based on the number of licenses purchased by each in 2005. Table 6 ranks the resident LifeMode groups from the largest group of buyers to the least. The rank is based on total buyers from 2001 through 2005 and is used consistently throughout the report.

**Table 6. Sales by LifeMode Categories, 2005,
Ranked from Categories Purchasing the Most Licenses to The Least; Residents Only**

1) LifeMode Groups	2) % of State Pop.	3) % of 2006 Buyers	4) Cumulative %	4) Description
High Society	23.9%	25.4%	25.4%	Fastest growing group, highest income, married
Upscale Avenues	20.0%	23.9%	49.3%	Above average income
Senior Styles	9.9%	9.9%	59.2%	Retirees, average income, depend soc sec & pensions
Traditional Living	8.6%	8.5%	67.7%	Hard working, modest income families, older towns losing kids to newer cities and growth areas
Family Portrait	7.6%	7.8%	75.5%	Generally younger families, homeowners
American Quilt	2.7%	6.0%	81.5%	Small towns/rural, modest income, blue-collar or rural nearing retirement, modest or mobile homes
High Hopes	6.5%	5.2%	86.7%	Young, college educated, single or married w/out kids
Factories and Farms	2.2%	4.5%	91.2%	Small towns often in America's breadbasket states, lower income, married, employed in ag & manufac.
Metropolis	7.1%	3.1%	94.2%	City families, row houses & public transportation
Solo Acts	6.5%	2.5%	96.7%	Young, educated, city life
Global Roots	4.0%	2.4%	99.1%	Ethnically diverse, recent immigrants, want to improve
Scholars & Patriots	1.1%	0.9%	100.0%	Youthful, lower income, in college or military

Nearly half of Maryland's license buyers hail from the state's highest-income neighborhoods. People from higher-income areas are more likely to buy a license compared to the average state resident (column #3 compared to column #2). People from younger, single, and immigrant neighborhoods are the least likely to buy a license.

The LifeMode categories presented in Table 6 provide an initial look at Maryland's anglers, and there are greater details still available. Let's take a look at the top license-purchasers by TAPESTRY® segments from 2001 to 2005. These are ranked based on the number of licenses purchased by each segment for all five years. Table 7 is long and detailed, and summary discussions follow.

**Table 7. 2001-2005 License Sales by Segment, Residents,
Ranked by Market Share ('% of 2001-2005 License Sales')**

Rank	Tapestry Segment	LifeMode Groups	% of 2001-2005 License Buyers	Cumulative %	% of State Pop.	Description
1	Sophisticated Squires	High Society	8.88%	8.88%	6.91%	Country living on urban fringe, above avg income, 35-54, SUVs, married w/ kids, golf
2	Cozy and Comfortable	Upscale Avenues	7.48%	16.36%	5.15%	Older suburban areas, middle aged, married, older kids, use computers, above avg income, not really do-it-yourselfers
3	Green Acres	Upscale Avenues	7.45%	23.81%	3.30%	Married w/ kids, blue collar baby boomers with college ed., Above average income, near suburban fringe, do-it-yourselfers, outdoors
4	Exurbanites	High Society	7.38%	31.19%	4.78%	Affluent, likes open space on urban edge, married/empty nesters, golf, kayakers, active in volunteer groups and donate to causes
5	Up and Coming Families	Family Portrait	4.94%	36.14%	4.22%	Fast growing segment, avg age = 32, married with kids, affluent, own home on suburban fringe, little time, fast food.

Rank	Tapestry Segment	LifeMode Groups	% of 2001-2005 License Buyers	Cumulative %	% of State Pop.	Description
6	In Style	Upscale Avenues	3.70%	39.83%	4.39%	Suburb living/prefers city lifestyles, married/no kids, age=38, higher income, tech savvy, rock music, health oriented
7	Aspiring Young Families	High Hopes	3.66%	43.49%	4.92%	Young start-up families, married or divorced, typical age=30, 22% with degrees, ½ rent, live in growing metro areas, avg income
8	Suburban Splendor	High Society	3.53%	47.03%	3.89%	Maturing families, very affluent, dual incomes, avg age=40, younger neighborhoods (but not new), like to invest
9	Rustbelt Retirees	Senior Styles	3.16%	50.19%	2.21%	Married/no kids, avg income, Great Lakes & Northeast, own homes, not inclined to move, loyal to community & country, gets involved
10	Pleasant-ville	Upscale Avenues	2.79%	52.98%	2.77%	Slightly older, families with kids, above average income, urban/suburban, long commutes common, moves infrequently
11	Main Street, USA	Traditional Living	2.74%	55.72%	2.53%	Suburbs of smaller metro areas in older homes, avg age= 36, ½ married, slightly above avg income, service/manufacturing
12	Salt of the Earth	Factories and Farms	2.72%	58.44%	1.12%	Two-thirds are married with kids, blue collar, avg income, Midwestern, often rural, own single family homes, conservative
13	Rustbelt Traditions	Traditional Living	2.59%	61.03%	2.04%	Older Great lakes industrial cities, avg age = 36, mix of married or single, slightly below avg income, don't move much, forego fads
14	Milk and Cookies	Family Portrait	2.42%	63.45%	1.97%	Young families but affluent for their age, two incomes, prefer single-family homes, focused on families & future, leisure time = kid time
15	Prosperous Empty Nesters	Senior Styles	2.36%	65.81%	2.18%	½ over 55, kids moved out, above avg income, still working, suburban, physically active, investors
16	Enterprising Professionals	Upscale Avenues	2.19%	68.01%	3.43%	Young, highly educated, single or recently married. Above average income, rent, mobile, tech savvy, likes to travel
17	Midlife Junction	Traditional Living	2.17%	70.18%	1.84%	Exiting child-rearing, mix married & single, slightly below avg income, 33% live in apts, suburban, conservative, budget-conscious
18	Midland Crowd	American Quilt	2.14%	72.32%	0.93%	Avg age=36, married, ½ with kids, typical income, new housing in rural areas, blue collar, conservative, likes Fords & fishing
19	Connoisseurs	High Society	1.88%	74.20%	3.04%	Very high incomes, slightly older, slightly older & many still with kids, live in dense city centers, liberal, travel, like to spend
20	Rooted Rural	American Quilt	1.87%	76.08%	0.83%	Slightly older, rural, empty-nesters, lower income, less likely to have college experience, trucks, do-it-yourselfers
21	Boomburbs	High Society	1.77%	77.85%	2.20%	Younger families with busy upscale lifestyle, two incomes, college ed., homeowners, into computers & tech, CNN, Discovery channel
22	Rural Resort Dwellers	American Quilt	1.71%	79.56%	0.74%	Rural non-farm, married/kids moved out, typically older, avg income, boats/fish/hunt
23	Urban Rows	Metropolis	1.49%	81.04%	3.90%	Smallest tapestry segment & shrinking due to urban renewal programs. 70% black with many black hispanics. 1/2 = single parent households. Urban.
24	Great Expectations	High Hopes	1.43%	82.48%	1.60%	Young singles & married couples, lower income & growing, many rent, music taste varies: MTV to country, like outdoor sports
25	Wealthy Seaboard Suburbs	High Society	1.39%	83.87%	2.12%	Coastal metro areas, age=40's, white, few kids, high income & high wealth, professionals, travels, seldom moves

Rank	Tapestry Segment	LifeMode Groups	% of 2001-2005 License Buyers	Cumulative %	% of State Pop.	Description
26	Simple Living	Senior Styles	1.35%	85.22%	1.41%	Older, ½ single, kids rare, low income, ¼ didn't finish high school, community is important
27	Inner City Tenants	Global Roots	1.25%	86.47%	2.53%	Ethnically diverse, urban, 27 years=avg, single, lower than average income, college is a goal, rents, not outdoorsy.
28	Family Foundations	Traditional Living	1.11%	87.58%	2.14%	Mostly African-American, slightly older families, active in community, average income, urban.
29	Heartland Communities	Senior Styles	1.09%	88.67%	0.49%	Above avg age, married, modest income, small Midwest towns, hunt/fish/bowl, country music, do-it-yourselfers
30	Old and Newcomers	Solo Acts	1.01%	89.68%	2.08%	In transition-starting careers or retiring, renters, more single person and shared households, few families, lower income
31	Young and Restless	Solo Acts	0.97%	90.65%	2.08%	Avg age=29, most are single, educated but income < avg. Renters, women more likely to work, metro areas, tech savvy.
32	Retirement Communities	Senior Styles	0.90%	91.55%	1.67%	Retired, ½ single, below avg income, ½ own single-family homes/others in multi-unit places, live in metro areas, health conscious
33	Home Town	Factories and Farms	0.84%	92.39%	0.60%	Young, tend to remain in hometown, low avg income, some married, 1/3 without diploma, suburban but prefer country lifestyle
34	Metropolitans	Metropolis	0.66%	93.05%	1.30%	City living, older neighborhoods, single or childless couples, educated, slightly above average income, mobile, homeowners
35	Military Proximity	Scholars & Patriots	0.61%	93.66%	0.40%	Young, married, embracing parenthood, second youngest Tapestry segment, 3/4's active duty or work on bases. Above avg education.
36	Metro City Edge	Metropolis	0.54%	94.20%	0.84%	Many single parent families (1/3 married households), older children at home, below avg education & income, high unemployment
37	Southern Satellites	Factories and Farms	0.54%	94.74%	0.25%	Primarily found in rural South, 37 yrs, most married, some with kids, below avg income, 1/3 without diploma, fishing, NASCAR
38	Silver and Gold	Senior Styles	0.53%	95.27%	0.54%	These are the wealthiest & older seniors, commonly live on the outer edge of suburbs, like to travel, active, seek sunshine
39	Urban Chic	Upscale Avenues	0.39%	95.66%	0.99%	Professional, urban couples, less than ½ with kids, 41 yrs, above avg income, uptown living (highrises) common, prefer city life
40	International Marketplace	Global Roots	0.38%	96.03%	0.74%	Young families, many immigrants, ethnically diverse, common to NY and LA, lower income than urban villages.
41	City Dimensions	Global Roots	0.37%	96.40%	0.35%	Young, 2/3's single, many single parents, low income, urban, lack education, renters, frequent moves, dense neighborhoods
42	Crossroads	American Quilt	0.34%	96.74%	0.23%	Married couples/single parents, 32 years, below avg income, smaller towns, mobile homes common, above avg unemployment
43	Metro Renters	Solo Acts	0.34%	97.08%	1.76%	Urban, young, educated & single, slightly above avg income & rising, internet savvy, have disposable income, ethnically diverse
44	Top Rung	High Society	0.34%	97.42%	0.92%	Mature, married, well educated and wealthy. Live in coastal urban areas, travel frequently. Home values near \$1 million.
45	Urban Villages	Family Portrait	0.32%	97.74%	0.35%	Multicultural areas, young families, in dense urban centers, 40% with no diploma, often hispanic, older single-family homes

Rank	Tapestry Segment	LifeMode Groups	% of 2001-2005 License Buyers	Cumulative %	% of State Pop.	Description
46	City Commons	Family Portrait	0.26%	98.00%	1.03%	Young, single or single parents in urban areas. Mostly African American. Blue collar, service-oriented employment. Low income, low rent.
47	City Strivers	Metropolis	0.23%	98.24%	0.71%	Live in dense urban areas, 38 yrs, generally above avg income, families/singles and culture types, most in apts, not outdoorsy
48	Prairie Living	Factories and Farms	0.23%	98.47%	0.11%	Midwest small farms mostly, avg age = 40, married, half have kids, typical income, pets, country music, hunts and fish
49	NeWest Residents	Global Roots	0.22%	98.69%	0.29%	Over 1/2 foreign born, largely hispanic, urban, renters in mid-to-high rise apts. Low education rates but modest (not low) income.
50	College Towns	Scholars & Patriots	0.22%	98.90%	0.55%	Avg age=24.3, almost 1/2 enrolled in college & others on staff, part-time jobs, low income, renters or some in dormitories.
51	Social Security Set	Senior Styles	0.22%	99.12%	0.76%	Mostly elderly, most live alone, ethnically diverse, very low income, apartment renters in high-rise urban locations, few recreation \$
52	Rural Bypasses	Factories and Farms	0.16%	99.28%	0.09%	Rural, low income & education, trucks, fishing, NASCAR, mostly white & 1/3 African-American.
53	The Elders	Senior Styles	0.15%	99.43%	0.47%	Oldest Tapestry segment (73 years = avg), 96% white, growing in numbers, senior communities, golf, travel, above avg wealth
54	Trendsetters	Solo Acts	0.12%	99.56%	0.35%	Young, single, culturally diverse, above average income, educated. Most rent. Live the urban life style.
55	City Lights	Metropolis	0.11%	99.66%	0.19%	Live in dense urban areas, 38 yrs, generally above avg income, families/singles and culture types, most in apts, not outdoorsy
56	Senior Sun Seekers	Senior Styles	0.10%	99.76%	0.14%	Older, growing segment, many are winter snow-birds & go south, education levels are below avg, over half receive social security.
57	Modest Income Homes	Metropolis	0.10%	99.86%	0.18%	Mostly young singles & single parents, many grandparents raising kids, low income, low valued homes, 1/2 rent
58	Dorms to Diplomas	Scholars & Patriots	0.05%	99.91%	0.15%	College students, youngest Tapestry segment. 3/4's hold part-time jobs. 1/2 live in dorms.
59	Laptops and Lattes	Solo Acts	0.05%	99.95%	0.19%	Avg age = 38, mostly single, live in urban centers, affluent, cosmopolitan, educated, rents, traveled and tech savvy.
60	Urban Melting Pot	Global Roots	0.02%	99.98%	0.08%	Mostly immigrants, ethnically diverse, urban, income below avg (\$37K), public transportation, fashion conscious,
61	Industrious Urban Fringe	Global Roots	0.01%	99.99%	0.02%	Family is key. Largely hispanic, many foreign born, live on city's edge, avg. income, commonly owns home. Thrifty.
62	High Rise Renters	Global Roots	0.01%	100.00%	0.03%	Diverse race and ethnic mix, younger (29 yrs), low income, lots in NYC, rent in medium to high rises
63	Southwestern Families	Family Portrait	0.00%	100.00%	0.00%	Young hispanic families, not recent immigrants, low income, high unemployment, prefer low-cost homes (2/3's own home)
64	Las Casas	Global Roots	0.00%	100.00%	0.00%	Newest Western immigrants, young, 62% married (above avg), \$35K income, mostly skilled workers, large household size.

The above table gives us a better picture of Maryland's license buyers. *It is not necessarily a picture of Maryland's anglers as many marine anglers are not required to*

possess a license. The segments highlighted in yellow in general live on the outer edges of the State’s metropolitan areas, tend towards outdoor recreation, and have above-average incomes. The young-educated-urban or ethnically diverse types do not appear in the top segments. This does not mean these people will not fish in the future, but at this stage in their lives, fishing is not a common activity. The second group of license customers showing above-average rates of consuming licenses, have average to above-average incomes, tend to be suburban, but their ages vary.

Where Do We Find Residents More or Less Likely to Buy Licenses?

Table 8 below lists all segments recorded as having bought a license in Maryland between 2001 and 2005, for residents only. The third column presents the larger LifeMode group each belongs to, and the fourth column presents the urban-rural areas in which the segments are generally located. The fifth column presents the percentage of buyers of fishing licenses from 2001 through 2005, based on the real number of licenses sold. Column 6 represents the market share of buyers from 2001 through 2005. The percentage change in market share is in column seven. For example, referring to the first row, the total licenses sold to the “Sophisticated Squires” segment decreased from 2001 to 2005 by 9.25 percent. The sixth column reports each segment’s total share of all licenses sold from 2001-2005 (8.88 percent), and the last column reports how much each segment’s share increased or decreased during this time (1.93 percent). Column six is important as it allows the agency to decide if the trends represented by a specific segment are worth the agency’s time to focus on strategies to maintain or boost sales to this segment.

Table 8 below lists all Tapestry[®] segments recorded as having bought a license in Maryland between 2001 and 2005, for residents only. The third column presents the larger LifeMode group each segment belongs to, and the fourth column presents the urban-rural areas where the segments are generally located. The fifth column presents the trend in the actual, or real, number of licenses sold to each segment from 2001 through 2005. For example, the number of licenses purchased by the top ranked Sophisticated Squires segment decreased 9.25 percent over the past five years. Column six reports each segments overall share of Maryland license sales from 2001 to 2005. The amount by which each segments’ market share has changed from 2001 to 2005 is reported in the last column (column seven). For example, the total market share held by the Sophisticated Squires increased by 1.93 percent. Compared to column five, this indicates Sophisticated Squires is decreasing in terms of total licenses purchased, but since they are decreasing at a slower rate than overall license sales (11.1% statewide decrease since 2001), their market share is actually increasing. Please note that column six is a key item as it shows us which segments are the most significant in terms of license sales and revenues.

**Table 8. Resident License Buyers by Segment,
as a Percentage of All Licenses Sold Annually**

1) Rank	2) Tapestry Segment	3) LifeMode Groups	4) Urban Group	5) Net Change in Real Licenses Sold from 2001-2005	6) Percentage Market Share from 2001-2005	7) Percentage Change in Market Share from 2001-2005
1	Sophisticated Squires	High Society	Suburban Periphery I	-9.25%	8.88%	1.93%
2	Cozy and Comfortable	Upscale Avenues	Suburban Periphery II	-15.40%	7.48%	-4.98%
3	Green Acres	Upscale Avenues	Rural I	-10.73%	7.45%	0.27%
4	Exurbanites	High Society	Suburban Periphery I	-9.43%	7.38%	1.73%
5	Up and Coming Families	Family Portrait	Suburban Periphery I	-13.55%	4.94%	-2.90%
6	In Style	Upscale Avenues	Suburban Periphery I	-7.20%	3.70%	4.24%
7	Aspiring Young Families	High Hopes	Metro Cities II	-8.47%	3.66%	2.80%
8	Suburban Splendor	High Society	Suburban Periphery I	-9.79%	3.53%	1.33%
9	Rustbelt Retirees	Senior Styles	Suburban Periphery II	-13.41%	3.16%	-2.74%
10	Pleasant-ville	Upscale Avenues	Metro Cities I	-11.69%	2.79%	-0.81%
11	Main Street, USA	Traditional Living	Urban Outskirts I	-15.22%	2.74%	-4.77%
12	Salt of the Earth	Factories and Farms	Rural I	-10.83%	2.72%	0.15%
13	Rustbelt Traditions	Traditional Living	Urban Outskirts I	-12.61%	2.59%	-1.85%
14	Milk and Cookies	Family Portrait	Metro Cities I	-15.60%	2.42%	-5.20%
15	Prosperous Empty Nesters	Senior Styles	Suburban Periphery I	-11.10%	2.36%	-0.15%
16	Enterprising Professionals	Upscale Avenues	Metro Cities I	-9.41%	2.19%	1.76%
17	Midlife Junction	Traditional Living	Suburban Periphery II	-8.65%	2.17%	2.61%
18	Midland Crowd	American Quilt	Rural I	-11.45%	2.14%	-0.54%
19	Connoisseurs	High Society	Metro Cities I	-7.52%	1.88%	3.87%
20	Rooted Rural	American Quilt	Rural II	-7.08%	1.87%	4.37%
21	Boomburbs	High Society	Urban Outskirts I	-5.55%	1.77%	6.08%
22	Rural Resort Dwellers	American Quilt	Rural I	-14.05%	1.71%	-3.46%
23	Urban Rows	Metropolis	Principal Urban Centers II	-17.70%	1.49%	-7.56%
24	Great Expectations	High Hopes	Urban Outskirts I	-16.11%	1.43%	-5.77%
25	Wealthy Seaboard Suburbs	High Society	Metro Cities I	-11.69%	1.39%	-0.80%
26	Simple Living	Senior Styles	Urban Outskirts II	-12.43%	1.35%	-1.64%
27	Inner City Tenants	Global Roots	Metro Cities II	5.00%	1.25%	17.94%
28	Family Foundations	Traditional Living	Metro Cities II	-19.98%	1.11%	-10.12%
29	Heartland Communities	Senior Styles	Small Towns	-4.77%	1.09%	6.97%
30	Old and Newcomers	Solo Acts	Metro Cities II	-7.72%	1.01%	3.65%
31	Young and Restless	Solo Acts	Metro Cities II	-5.70%	0.97%	5.91%
32	Retirement Communities	Senior Styles	Metro Cities II	-7.78%	0.90%	3.58%
33	Home Town	Factories and Farms	Suburban Periphery II	-10.77%	0.84%	0.22%
34	Metropolitans	Metropolis	Metro Cities I	-10.28%	0.66%	0.78%
35	Military Proximity	Scholars & Patriots	Suburban Periphery II	-17.19%	0.61%	-6.99%
36	Metro City Edge	Metropolis	Urban Outskirts II	-20.46%	0.54%	-10.66%
37	Southern Satellites	Factories and Farms	Rural II	-1.69%	0.54%	10.42%
38	Silver and Gold	Senior Styles	Suburban Periphery I	-18.22%	0.53%	-8.14%

1) Rank	2) Tapestry Segment	3) LifeMode Groups	4) Urban Group	5) Net Change in Real Licenses Sold from 2001-2005	6) Percentage Market Share from 2001-2005	7) Percentage Change in Market Share from 2001-2005
39	Urban Chic	Upscale Avenues	Metro Cities I	-11.07%	0.39%	-0.11%
40	International Marketplace	Global Roots	Principal Urban Centers I	6.24%	0.38%	19.32%
41	City Dimensions	Global Roots	Metro Cities II	-13.42%	0.37%	-2.75%
42	Crossroads	American Quilt	Small Towns	-16.70%	0.34%	-6.44%
43	Metro Renters	Solo Acts	Principal Urban Centers I	-18.06%	0.34%	-7.97%
44	Top Rung	High Society	Metro Cities I	-16.07%	0.34%	-5.73%
45	Urban Villages	Family Portrait	Principal Urban Centers I	-4.35%	0.32%	7.43%
46	City Commons	Family Portrait	Principal Urban Centers II	-18.85%	0.26%	-8.85%
47	City Strivers	Metropolis	Principal Urban Centers II	-13.06%	0.23%	-2.35%
48	Prairie Living	Factories and Farms	Rural II	-9.67%	0.23%	1.46%
49	NeWest Residents	Global Roots	Principal Urban Centers II	15.28%	0.22%	29.48%
50	College Towns	Scholars & Patriots	Urban Outskirts II	-10.29%	0.22%	0.76%
51	Social Security Set	Senior Styles	Principal Urban Centers II	-10.71%	0.22%	0.29%
52	Rural Bypasses	Factories and Farms	Rural II	-8.94%	0.16%	2.28%
53	The Elders	Senior Styles	Suburban Periphery II	2.56%	0.15%	15.20%
54	Trendsetters	Solo Acts	Principal Urban Centers I	-2.33%	0.12%	9.70%
55	City Lights	Metropolis	Principal Urban Centers I	-14.29%	0.11%	-3.73%
56	Senior Sun Seekers	Senior Styles	Small Towns	-14.29%	0.10%	-3.73%
57	Modest Income Homes	Metropolis	Urban Outskirts II	5.15%	0.10%	18.11%
58	Dorms to Diplomas	Scholars & Patriots	Metro Cities II	17.54%	0.05%	32.03%
59	Laptops and Lattes	Solo Acts	Principal Urban Centers I	-19.33%	0.05%	-9.39%
60	Urban Melting Pot	Global Roots	Principal Urban Centers I	-26.98%	0.02%	-17.99%
61	Industrious Urban Fringe	Global Roots	Urban Outskirts I	-23.08%	0.01%	-13.60%
62	High Rise Renters	Global Roots	Principal Urban Centers II	-4.55%	0.01%	7.22%
63	Southwestern Families	Family Portrait	Urban Outskirts II	-100.00%	0.00%	-100.00%
64	Las Casas	Global Roots	Principal Urban Centers II	#DIV/0!	0.00%	#DIV/0!

* Each urbanization group is divided into two categories, I and II. "I" categories are typically more affluent, with higher incomes, than "II" categories.

The top nine segments provide 50 percent of the State's license buyers. The top five segments provide over 36 percent. Seven of the nine top segments are from the suburban periphery. Of these nine, the LifeMode groups "High Society" and "Upscale Avenues" appear three times each. These top nine segments are mostly suburban, with above average incomes, and buy the largest share of Maryland's licenses. Their

purchases of licenses have decreased 10.96% since 2001, having a significant impact on license sales.

Sales decreases are nearly uniform across all segments, indicating a public shift away from purchasing licenses and likely away from fishing over the past five years. The first bright spot is seen down at the 27th ranked segment, Inner City Tenants. Poor, ethnic and located in the inner cities, these people bought 5 percent more licenses in 2005 compared to 2001. They only purchase 1.25 percent of the State’s annual sales, so the fiscal impact is small. However, there could be a trend or activity in these neighborhoods the Maryland DNR might identify as leading this increase, and could be examined to see if it can be replicated elsewhere.

Although the majority of the segments show a decrease, there are other ways at looking at the data that might show bright spots. In Table 8 above, we added TAPESTRY[®] Urban Groups. These describe the level of urbanization where the segments, or neighborhoods, are found. In Table 9, we consolidated the resident data to get a better idea of the rural versus urban differences.

Table 9. License Sales Market Share by Urbanization Group, Residents only

Category	Market Share	% Change in Market Share
Suburban Periphery	45.75%	-0.13%
Metro Cities	21.38%	0.25%
Rural	16.81%	0.09%
Urban Outskirts	10.76%	-0.23%
Principal Urban Centers	3.77%	-0.03%
Small Towns	1.53%	0.05%

Table 9 shows the importance of suburban and urban residents to Maryland’s fishing license revenue base. These two categories make up 67 percent of license sales, which in general reflects the overall state population. The changes in market share between urban groups is not significant. Compared to other states analyzed to date where sharp decreases in license sales to more urbanized areas have been seen, the market share held by Maryland’s urbanized areas remains relatively stable.

Please note the data in this report is based on the purchaser’s home residence, not where he or she purchased their license. If a trend exists in Maryland for urban residents to buy their licenses close to their fishing site, that trend cannot be identified in this report.

Let us now take a look at those segments with the fastest growing market share. These groups have increased their share of annual license sales from 2001 to 2005. Table 10 presents the top 15 segments ranked by who is buying a greater portion of Maryland’s licenses.

Table 10. Top 15 Segments Ranked by Fastest Growth in Market Share, 2001-2005

1) Rank	2) Tapestry Segment	3) LifeMode Groups	4) Urban Group	5) Net Change in Real Licenses Sold from 2001-2005	6) Percentage Market Share from 2001-2005	7) Percentage Change in Market Share from 2001-2005
58	Dorms to Diplomas	Scholars & Patriots	Metro Cities II	17.54%	0.05%	32.03%
49	NeWest Residents	Global Roots	Principal Urban Centers II	15.28%	0.22%	29.48%
40	International Marketplace	Global Roots	Principal Urban Centers I	6.24%	0.38%	19.32%
57	Modest Income Homes	Metropolis	Urban Outskirts II	5.15%	0.10%	18.11%
27	Inner City Tenants	Global Roots	Metro Cities II	5.00%	1.25%	17.94%
53	The Elders	Senior Styles	Suburban Periphery II	2.56%	0.15%	15.20%
37	Southern Satellites	Factories and Farms	Rural II	-1.69%	0.54%	10.42%
54	Trendsetters	Solo Acts	Principal Urban Centers I	-2.33%	0.12%	9.70%
45	Urban Villages	Family Portrait	Principal Urban Centers I	-4.35%	0.32%	7.43%
62	High Rise Renters	Global Roots	Principal Urban Centers II	-4.55%	0.01%	7.22%
29	Heartland Communities	Senior Styles	Small Towns	-4.77%	1.09%	6.97%
21	Boomburbs	High Society	Urban Outskirts I	-5.55%	1.77%	6.08%
31	Young and Restless	Solo Acts	Metro Cities II	-5.70%	0.97%	5.91%
20	Rooted Rural	American Quilt	Rural II	-7.08%	1.87%	4.37%
6	In Style	Upscale Avenues	Suburban Periphery I	-7.20%	3.70%	4.24%

This table ranks segments based on their percentage change in *market share*, not on the change in *real* license revenues generated. The largest growth comes from the segments with the least impact on license revenue. Most of these segments have such a small share of the market that a change of one or two licenses from 2001 to 2005 had a major impact on their rankings. To help sort through the noise, we encourage all segments with a ranking greater than 30 be overlooked as their market share is small (<1%) and it is not known if the change is related to real trends or not. Of the top 15 growth segments listed in Table 10, In Style has the greatest market share. This segment may be worth concentrating on to see why their rate of license buying is decreasing slower than others. Looking at the reasons why several segments are increasing their share of license purchases may be worthwhile, too. Individuals from these segments who are buying licenses can be easily identified from Maryland's electronic license database.

It may be worth knowing which segments are shrinking the fastest. Table 11 presents the segments suffering the worst declines in market share (not license revenues).

Table 11. Top 15 Segments Ranked By Shrinking Market Share

1) Rank	2) Tapestry Segment	3) LifeMode Groups	4) Urban Group	5) Net Change in Real Licenses Sold from 2001-2005	6) Percentage Market Share from 2001-2005	7) Percentage Change in Market Share from 2001-2005
63	Southwestern Families	Family Portrait	Urban Outskirts II	-100.00%	0.00%	-100.00%
60	Urban Melting Pot	Global Roots	Principal Urban Centers I	-26.98%	0.02%	-17.99%
61	Industrious Urban Fringe	Global Roots	Urban Outskirts I	-23.08%	0.01%	-13.60%
36	Metro City Edge	Metropolis	Urban Outskirts II	-20.46%	0.54%	-10.66%
28	Family Foundations	Traditional Living	Metro Cities II	-19.98%	1.11%	-10.12%
59	Laptops and Lattes	Solo Acts	Principal Urban Centers I	-19.33%	0.05%	-9.39%
46	City Commons	Family Portrait	Principal Urban Centers II	-18.85%	0.26%	-8.85%
38	Silver and Gold	Senior Styles	Suburban Periphery I	-18.22%	0.53%	-8.14%
43	Metro Renters	Solo Acts	Principal Urban Centers I	-18.06%	0.34%	-7.97%
23	Urban Rows	Metropolis	Principal Urban Centers II	-17.70%	1.49%	-7.56%
35	Military Proximity	Scholars & Patriots	Suburban Periphery II	-17.19%	0.61%	-6.99%
42	Crossroads	American Quilt	Small Towns	-16.70%	0.34%	-6.44%
24	Great Expectations	High Hopes	Urban Outskirts I	-16.11%	1.43%	-5.77%
44	Top Rung	High Society	Metro Cities I	-16.07%	0.34%	-5.73%
14	Milk and Cookies	Family Portrait	Metro Cities I	-15.60%	2.42%	-5.20%

This table demonstrates that the worst declines are primarily in the urban areas, though Table 9 showed the declines are not as significant for all urban segments. Many urban segments are doing better than many suburban and rural segments. The rural segments are “middle of the road” in terms of changes in market share.

Next we will look at angler loyalty.

Purchasing Frequencies: Gender Differences

During the review of the five year sales trends, a question was raised if the frequency of fishing license purchases over five years differed between men and women. This analysis was run for resident license holders only and the results are presented below:

# of Years Bought a License Over the Last Five Years	Male	Female	Unknown
1	33.1%	10.4%	56.4%
2	63.2%	13.4%	23.4%
3	80.0%	12.6%	7.4%
4	86.9%	9.2%	3.9%
5	92.2%	6.2%	1.6%

Men are much more likely to buy a license in multiple years than women, indicating men are more likely to fish regularly. This has been seen in all states analyzed so far. Multiple reasons could be offered as to why, but the main purpose of this paper is to explore *what* is happening versus *why*. Any promotions encouraging anglers to purchase licenses more frequently, or any new initiatives such as a four-year license, would likely be more effective if targeted towards males.

Section 4: The “Churn” Issue

Let’s look at the “churn” issue. The “churn” issue refers to the rate of anglers entering and dropping out of the customer base. Considering all Maryland residents who purchased a license at least once over the past five years, Table 13 reports the percentage who bought a license in just one, two, up to all five years.

Table 12. License Purchasing Frequency

License Purchasing Frequency	Percentage of Customers, 2001 to 2005
1 of 5 years:	55.9%
2 of 5 years:	17.6%
3 of 5 years:	10.5%
4 of 5 years:	7.7%
5 of 5 years:	8.3%

It could be argued that over 73 percent of license customers are not loyal customers and only bought in one or two of the past five years and find other activities to spend their free time each year. Time constraints or competing recreations may be diverting their attention. Encouraging existing anglers to fish more often or adding convenience and simplicity to the license buying and renewal process could result in increased license revenues. Only 16 percent of anglers bought a license in four or five of the past five years. These are expected to be the more vocal and politically active anglers. The next steps are to find out which type of angler is more likely to purchase a license frequently or infrequently.

Tables 13 and 14 present purchasing frequencies for specific segments of resident customers.¹

Table 13. Top 15 Segments Likely to Buy Frequently, Residents Only

Rank	Tapestry Segment	Bought 1 or 2 years only, out of 5 years	Bought 4 or 5 years, out of 5 years
12	Salt of the Earth	65.66%	21.56%
29	Heartland Communities	66.44%	20.93%
9	Rustbelt Retirees	67.73%	20.35%
20	Rooted Rural	67.88%	20.01%
3	Green Acres	68.93%	19.33%
18	Midland Crowd	69.59%	19.00%
4	Exurbanites	69.70%	18.91%
2	Cozy and Comfortable	69.34%	18.89%
48	Prairie Living	68.28%	18.43%

¹ Non-residents are less likely to buy a Nebraska license annually. Their inclusion in this specific analysis could mislead the analysis.

Rank	Tapestry Segment	Bought 1 or 2 years only, out of 5 years	Bought 4 or 5 years, out of 5 years
37	Southern Satellites	70.92%	18.34%
15	Prosperous Empty Nesters	70.21%	18.25%
22	Rural Resort Dwellers	69.25%	18.20%
52	Rural Bypasses	69.76%	17.89%
42	Crossroads	70.90%	17.80%
13	Rustbelt Traditions	71.23%	17.78%

Most of the segments listed in Table 13 are rural. Rural anglers are the most likely to fish every year. Even though rural areas are providing the most loyal anglers, a majority of customers from these rural segments still only bought a once or twice in the past five years.

In many states analyzed to date, the top license buying segments (Table 8) typically provide the most loyal license purchasers. But in Maryland, only four of the top ten segments are listed in Table 13. Efforts to boost license sales will likely succeed best if focused on encouraging more anglers from the top segments (Table 8) to renew their licenses annually. Those segments with higher-than-average participation rates that do not appear on Table 13 may merit special attention to see why they do not fish as regularly.

Table 14 reviews those segments most likely to have bought once or twice over the past five years.

Table 14. Top Segments Likely to Buy Licenses Only 1 or 2 of the Past 5 Years, Residents Only

Rank	Tapestry Segment	Bought 1 or 2 years only, out of 5 years	Bought 4 or 5 years, out of 5 years
63	Southwestern Families	100.00%	0.00%
64	Las Casas	100.00%	0.00%
35	Military Proximity	96.19%	1.15%
49	NeWest Residents	87.28%	5.61%
58	Dorms to Diplomas	87.28%	7.89%
43	Metro Renters	86.13%	8.03%
59	Laptops and Lattes	83.14%	9.47%
54	Trendsetters	83.10%	8.88%
16	Enterprising Professionals	83.04%	9.17%
40	International Marketplace	82.31%	9.57%
53	The Elders	81.72%	9.77%
27	Inner City Tenants	81.59%	10.07%
31	Young and Restless	81.21%	10.72%
50	College Towns	80.73%	10.78%
62	High Rise Renters	80.33%	16.39%

In Table 14, the rankings indicate that less loyal segments come from the segments less likely to fish. Not surprisingly, these segments are generally urban, young and/or single. Inner City Tenants appears in this table, and is the only segment to show a significant increase in licenses purchased since 2001. This indicates that while more people from these neighborhoods are buying licenses, they are not fishing regularly. Efforts to encourage anglers from these neighborhoods to fish every year may be worthwhile, and may be a way to reach others in these neighborhoods.

Propensity to Buy a License

Focusing on segments with a greater “propensity” to purchase a license may yield greater returns. “Propensity” is a person’s likelihood to purchase a license compared to the likelihood of the average state resident buying a license. Table 15 uses a ratio to determine each segment’s propensity. This ratio is the segment’s “market share of all licenses sold” divided by the “percentage of the Maryland population” held by that segment, and is known as the “Sales to Population” ratio. All segments with a “Sales/Pop Ratio” greater than one are more likely to buy a license compared to the average Maryland resident. Efforts to recruit new anglers or to encourage greater purchasing frequencies would likely have higher success if they targeted the segments with ratios greater than one.

Table 15. Segments with a Greater Propensity to Buy Licenses, Residents Only

Rank	Tapestry Segment	LifeMode Group	% of 2005 License Sales	% of State Population	Sales/Pop Ratio
12	Salt of the Earth	Factories and Farms	2.71%	1.12%	2.41
20	Rooted Rural	American Quilt	1.89%	0.83%	2.30
18	Midland Crowd	American Quilt	2.13%	0.93%	2.29
29	Heartland Communities	Senior Styles	1.13%	0.49%	2.28
3	Green Acres	Upscale Avenues	7.51%	3.30%	2.28
37	Southern Satellites	Factories and Farms	0.57%	0.25%	2.25
22	Rural Resort Dwellers	American Quilt	1.66%	0.74%	2.23
48	Prairie Living	Factories and Farms	0.24%	0.11%	2.21
52	Rural Bypasses	Factories and Farms	0.16%	0.09%	1.72
4	Exurbanites	High Society	7.41%	4.78%	1.55
42	Crossroads	American Quilt	0.33%	0.23%	1.45
9	Rustbelt Retirees	Senior Styles	3.13%	2.21%	1.42
2	Cozy and Comfortable	Upscale Avenues	7.29%	5.15%	1.42
35	Military Proximity	Scholars & Patriots	0.57%	0.40%	1.41
33	Home Town	Factories and Farms	0.83%	0.60%	1.40
1	Sophisticated Squires	High Society	9.02%	6.91%	1.30
13	Rustbelt Traditions	Traditional Living	2.56%	2.04%	1.25
17	Midlife Junction	Traditional Living	2.22%	1.84%	1.20
14	Milk and Cookies	Family Portrait	2.36%	1.97%	1.20
5	Up and Coming Families	Family Portrait	4.86%	4.22%	1.15
15	Prosperous Empty Nesters	Senior Styles	2.35%	2.18%	1.08

Rank	Tapestry Segment	LifeMode Group	% of 2005 License Sales	% of State Population	Sales/Pop Ratio
11	Main Street, USA	Traditional Living	2.67%	2.53%	1.05
41	City Dimensions	Global Roots	0.36%	0.35%	1.04
10	Pleasant-ville	Upscale Avenues	2.75%	2.77%	0.99
26	Simple Living	Senior Styles	1.35%	1.41%	0.96
45	Urban Villages	Family Portrait	0.33%	0.35%	0.95
38	Silver and Gold	Senior Styles	0.50%	0.54%	0.93
8	Suburban Splendor	High Society	3.57%	3.89%	0.92
24	Great Expectations	High Hopes	1.41%	1.60%	0.88
6	In Style	Upscale Avenues	3.80%	4.39%	0.86
49	NeWest Residents	Global Roots	0.25%	0.29%	0.86
21	Boomburbs	High Society	1.80%	2.20%	0.82
7	Aspiring Young Families	High Hopes	3.75%	4.92%	0.76
61	Industrious Urban Fringe	Global Roots	0.01%	0.02%	0.74
56	Senior Sun Seekers	Senior Styles	0.10%	0.14%	0.68
25	Wealthy Seaboard Suburbs	High Society	1.37%	2.12%	0.64
19	Connoisseurs	High Society	1.94%	3.04%	0.64
16	Enterprising Professionals	Upscale Avenues	2.17%	3.43%	0.63
36	Metro City Edge	Metropolis	0.50%	0.84%	0.60
32	Retirement Communities	Senior Styles	0.95%	1.67%	0.57
57	Modest Income Homes	Metropolis	0.10%	0.18%	0.57
55	City Lights	Metropolis	0.11%	0.19%	0.56
40	International Marketplace	Global Roots	0.40%	0.74%	0.54
27	Inner City Tenants	Global Roots	1.36%	2.53%	0.54
34	Metropolitans	Metropolis	0.66%	1.30%	0.51
28	Family Foundations	Traditional Living	1.04%	2.14%	0.49
30	Old and Newcomers	Solo Acts	1.01%	2.08%	0.49
31	Young and Restless	Solo Acts	1.00%	2.08%	0.48
50	College Towns	Scholars & Patriots	0.22%	0.55%	0.40
58	Dorms to Diplomas	Scholars & Patriots	0.06%	0.15%	0.39
39	Urban Chic	Upscale Avenues	0.38%	0.99%	0.38
23	Urban Rows	Metropolis	1.45%	3.90%	0.37
53	The Elders	Senior Styles	0.17%	0.47%	0.36
54	Trendsetters	Solo Acts	0.13%	0.35%	0.35
44	Top Rung	High Society	0.32%	0.92%	0.35
47	City Strivers	Metropolis	0.23%	0.71%	0.33
51	Social Security Set	Senior Styles	0.21%	0.76%	0.28
62	High Rise Renters	Global Roots	0.01%	0.03%	0.28
46	City Commons	Family Portrait	0.24%	1.03%	0.24
60	Urban Melting Pot	Global Roots	0.02%	0.08%	0.23
59	Laptops and Lattes	Solo Acts	0.04%	0.19%	0.22
43	Metro Renters	Solo Acts	0.35%	1.76%	0.20
63	Southwestern Families	Family Portrait	0.00%	0.00%	-
64	Las Casas	Global Roots	0.00%	0.00%	-



The segments showing the greatest likelihood of buying licenses are typically rural, blue collar, married, most have kids, and have an average income. Some are older with grown children or with below-average income. “Green Acres” is the highest ranked segment with the highest propensity which is made up of blue collar baby boomers with a college education and above average income living in the rural and suburban fringe areas and enjoys the outdoors. Any new efforts to recruit new anglers or generate additional license revenues may have greater success if targeted at these segments. The Inner City Tenant segment, which showed the greatest growth in license sales since 2001, had a low sales/population ratio of .54, indicating fishing is a very infrequent activity for people in this segment.

Section 5: “Upgraders” and “Downgraders”

Current customers moving to higher- or lower-priced license options also drive revenue trends. Table 16 looks at residents who specifically bought a license in 2001 or in 2005². Those who bought a license in the intervening years were excluded for this particular analysis. The table reports the percentage who a) downgraded to a lower priced license, b) dropped out, c) are new customers, d) are steady customers and bought the same license each time, or e) upgraded to a higher-priced license.

Table 16. Upgrading/Downgrading Trends

Resident Purchasing Behavior, 2001 vs 2005	Percentage of Customers Buying Activity in Both 2001 and 2005
Dropped	41.78%
New	35.23%
Steady	17.56%
Downgraded	2.74%
Upgraded	2.68%

Following the downward trend in license sales, more people appear to have dropped out of the license base than joined. Upgraders and downgraders represent just over five percent total and are not a major factor regarding revenue changes.

This drop-out or “churn” issue is of concern in Maryland. Many of these may be people who went fishing “on a whim” at the request of another and do not plan to fish regularly, but could be enticed to go again. Encouraging anglers to renew their licenses could be a big impact in license sales. When encouraging anglers to renew their licenses, it may be worthwhile encouraging them to upgrade to higher priced licenses. But, anglers will only do so when the perceived benefit is greater than the additional cost. It may be worth reviewing Maryland’s suite of license products with a sampling of sportsmen and women to identify if any changes are needed to encourage greater sales of higher priced licenses.

Using the TAPESTRY[®] data, we can gain a better understanding of who is more likely to upgrade or downgrade. Table 17 ranks the segments based on the segment providing the biggest boost to agency revenues. This is measured using the ratio in the last column. This ratio takes into consideration each segment’s market share and percentage who upgraded their purchases. Table 17 is also based on purchases made in 2001 and also in 2005 exclusive of what was purchased in-between.

² If a resident bought more than one license in a year, the license that cost the most was used.

Table 17. Top 15 Segments Ranked by Those with Highest Upgrading Volume, Residents

Rank	Segment	LifeMode Groups	Urban Groups	% Downgraded	% Upgraded	% Market Share, '01-'05	% Upgraded X Market Share Ratio
3	Cozy and Comfortable	Upscale Avenues	Suburban Periphery II	3.56%	3.77%	7.71%	0.29%
4	Exurbanites	High Society	Suburban Periphery I	2.94%	3.70%	7.57%	0.28%
2	Green Acres	Upscale Avenues	Rural I	2.77%	3.51%	7.74%	0.27%
1	Sophisticated Squires	High Society	Suburban Periphery I	2.94%	3.02%	8.97%	0.27%
5	Up and Coming Families	Family Portrait	Suburban Periphery I	2.50%	3.06%	4.86%	0.15%
6	In Style	Upscale Avenues	Suburban Periphery I	2.43%	2.53%	3.65%	0.09%
9	Rustbelt Retirees	Senior Styles	Suburban Periphery II	3.31%	2.66%	3.31%	0.09%
16	Midland Crowd	American Quilt	Rural I	3.45%	3.68%	2.20%	0.08%
15	Prosperous Empty Nesters	Senior Styles	Suburban Periphery I	2.90%	3.32%	2.42%	0.08%
10	Salt of the Earth	Factories and Farms	Rural I	2.91%	2.76%	2.87%	0.08%
12	Main Street, USA	Traditional Living	Urban Outskirts I	2.50%	2.82%	2.76%	0.08%
11	Pleasant-ville	Upscale Avenues	Metro Cities I	2.53%	2.78%	2.78%	0.08%
7	Suburban Splendor	High Society	Suburban Periphery I	2.17%	2.18%	3.51%	0.08%
14	Milk and Cookies	Family Portrait	Metro Cities I	2.69%	2.83%	2.42%	0.07%
8	Aspiring Young Families	High Hopes	Metro Cities II	2.33%	1.93%	3.47%	0.07%

The above table shows the top-ranked segments in terms of total licenses purchased (per Table 8) also have higher rates of upgrading their purchases. These are generally the more-affluent segments of Maryland. Many of these individual segments also show a higher rate of downgrading, thus it may be worthwhile to encourage anglers in these segments to upgrade or maintain their license level by reminding them of the additional benefits and privileges from higher-priced licenses.

Conclusion

For 2005, over 80 percent of Maryland's fishing licenses are purchased by residents. The quality of the gender data does not allow sufficient confidence to determine the breakdown of licenses sold by gender. Resident license buyers are more likely to be in the 40-49 year old age bracket. Over the past five years, Maryland's total number of buyers has decreased by eleven percent. (Tables 1-5)

Most licenses are purchased by people in suburban areas and outer suburban fringe, although sales to these areas have decreased nearly 11 percent from 2001 to 2005. This may also be an indication of a general population growth in these areas. In general, the majority of segments of Maryland's population are showing license sales decreases. (Tables 5-7).

The picture developed in this report is not necessarily a picture of Maryland's anglers as many marine anglers are not required to possess a license.

The TAPESTRY[®] data allows us to drill down to neighborhood types and their license buying habits. The neighborhoods buying the most licenses AND demonstrating a greater likelihood of buying a license compared to the average Maryland resident are located on the outer edges of the State's metropolitan areas, tend towards outdoor recreation, and have above-average incomes. The young-educated-urban or ethnically diverse types do not appear in the top segments. This does not mean these people will not fish in the future, but at this stage in their lives, fishing is not a common activity. (Table 7).

Of the 65 detailed Tapestry[®] segments, or neighborhoods, that describe the households and lifestyles of the entire U.S. population, nine provide 50 percent of Maryland's license buyers. The top five segments provide over 36 percent. Seven of the nine top segments are from the suburban periphery. These top nine segments are mostly suburban, with above-average incomes. However, their license purchases have decreased 10.96% since 2001, having a significant impact on revenues. (Table 8)

Sales decreases are nearly uniform across all segments, indicating a public shift away from purchasing licenses and likely away from fishing over the past five years. The first bright spot is seen down the list at the 27th spot, Inner City Tenants. Poor, ethnic and located in the inner cities, these people bought 5 percent more licenses in 2005 compared to 2001. They only purchase 1.25 percent of the licenses sold annually, so the fiscal impact is small. However, there could be a trend or activity in these neighborhoods the Maryland DNR might identify as leading this increase, and could be examined to see if it can be replicated elsewhere. (Table 8)

Table 9 shows the importance of suburban and urban residents to Maryland's fishing license revenue base. These two categories make up 67 percent of license sales, which in general reflects the overall state population. The changes in market share

between urban groups are not that significant. Compare to other states analyzed to date where sharp decreases in license sales to more urbanized areas have been seen, the market share held by Maryland's urbanized areas remains relatively stable.

Urban areas show the worst decline in marketshare, meaning their rates of license buying are declining faster than in other types of neighborhoods. Table 9 shows the declines are not significant for all urban segments. Sales to many urban segments are doing better than many suburban and rural segments. The rural segments are "middle of the road" in terms of market share changes. The segments showing the greatest increases in market share come from all over. (Tables 10-11)

The most significant finding in this study is likely the percentage of anglers who buy a license every year. Only 8.3 percent of all residents who bought a license over the past five years actually bought in each year. Another 7.7% bought licenses in four of the past five years. It could be argued that over 73 percent of license customers are not loyal customers and bought only once or twice over the past five years. These people are finding other ways to spend their free time each year. Fishing license sales, and fishing, face competition from other activities and are not doing well. Encouraging existing anglers to fish more often or adding convenience and simplicity to the license buying and renewal process could result in increased license revenues. (Table 12)

Rural anglers are the most likely to fish every year. They are Maryland's most loyal customers. This is not true in all states. Even though rural areas are providing the most loyal anglers, a majority of customers from these rural segments still only bought a once or twice in the past five years. (Table 13)

In many states analyzed to date, the top license buying segments typically provide the most loyal license purchasers. But in Maryland, only four of the top ten segments are listed in Table 13. Efforts to boost license sales will likely succeed best if focused on encouraging more anglers from the top segments (listed in Table 8) to renew their licenses annually. Those segments with higher-than-average participation rates that do not appear on Table 13 may merit special attention to see why they do not fish as regularly.

In Table 14, the rankings indicate that less loyal segments come from the segments less likely to fish. Not surprising. These segments are generally urban, young and/or single. Inner City Tenants appears in this table, and is the only segment to show a significant increase in licenses purchased since 2001. This indicates that while more people from these neighborhoods are buying licenses, they are not fishing regularly. Efforts to encourage anglers from these neighborhoods to fish every year may be worthwhile, and may be a way to reach others in these neighborhoods.

Following the downward trend in license sales, more people appear to have dropped out of the license base than joined. Upgraders and downgraders only represent five percent of license customers. The drop-out, or "churn", issue is of concern in

Maryland. Many of these may be people who went fishing “on a whim” at the request of another and do not plan to fish regularly, but could be enticed to go again. Encouraging anglers to renew their licenses could be a big impact in license sales. When encouraging anglers to renew their licenses, it may be worthwhile encouraging them to upgrade to higher priced licenses. But, anglers will only do so when the perceived benefit is greater than the additional cost. It may be worth reviewing Maryland’s suite of license products with a sampling of sportsmen and women to identify if any changes are needed to encourage greater sales of higher priced licenses.

Efforts to increase license revenues could take one of several directions. Such efforts could include:

- A. Recruit new anglers,
- B. Retain existing anglers,
- C. Encourage anglers to buy licenses more frequently, or
- D. Encourage anglers to upgrade their license purchases.

Recognizing that nearly all segments are showing losses in terms of actual licenses sold, boosting license revenues by recruiting new anglers will be tough and may not show a significant return on investment. We are not advocating against angler recruitment programs as fisheries conservation in the long run will depend on the number of active and interested anglers. But, from a perspective of boosting short-term agency revenues, angler recruitment efforts may not be the answer.

Efforts to encourage anglers to renew their licenses should show the most significant return-on-investment. One way to do this is to use the State’s electronic licensing database. Promotional mailings could target segments that have a higher frequency of license purchases, but only sent to individuals within the target segments who have bought only once, twice, or three times in the last five years. Control groups could be established by not mailing to people from the same segments. New types of licenses, such as five-year licenses, may also help boost revenues. *Please note that marketing efforts based solely on mailings are not necessarily effective.* Recent test efforts in specific states have shown this. Effective marketing efforts typically require multi-pronged communication approaches. PSAs combined with mailings, articles placed in targeted media, and other communication approaches, are typically required before an individual changes his or her perspective and is willing to change their purchasing habits.

Closing Notes:

The purpose of this initial analysis is to identify trends affecting license sales and revenues and help identify strategies that can boost license revenues. We will assist in developing additional analyses and provide interpretations per Maryland’s requests and directions. Additional analyses could include:

1. Breakouts based on the type of license purchased,



2. Greater investigations of lapsed anglers, and
3. Maps plotting where specific segments of anglers live in Maryland, and

We will run any analysis requested by Maryland, assuming the necessary data are available. There are more questions that could be asked, and discussions that should take place to ensure the data are adequately and properly interpreted.

Next step: we will wait for Maryland's questions and requests for additional analysis.