Planning for Waterway Access in Taylor County, Florida:

RESIDENTS AND USERS SPEAK

TP - 177 • June 2011

Acknowledgments

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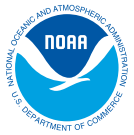
Our sincere appreciation also is extended to the hundreds of Taylor County residents, visitors and boaters who participated in the surveys. It is our intention that the valuable input provided by survey respondents will be used to support coastal and waterway access planning that benefits Taylor County residents and visitors.



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June 2011 TP-177

Planning for Waterway Access in Taylor County, Florida: Residents and Users Speak

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INTRODUCTION

Taylor County, located in Florida's north-central coastal region known as the "Nature Coast," possesses an abundance of undeveloped coastal lands and environmental amenities that support a variety of commercial, subsistence, and nature-based recreational pursuits (Figure 1). The expansion of Taylor County's economic base to further develop nature-based recreation and tourism is a priority; however, it is contingent upon adequate public access to coasts and waterways. It is believed that Taylor County's limited supply of deep-water and direct-Gulf access facilities available to the public represents a source of frustration for many recreational users, and may be limiting tourism-based economic growth. It is also thought that this situation has been exacerbated by the recent conversion of key public access points into waterfront condominiums and other private uses. (See Appendix A for a list of the public and private boat launch facilities surveyed.)

Taylor County has successfully obtained state funding to acquire properties to support the development of public coastal and waterway access facilities. However, these actions concern some local residents who fear that the planned facilities would generate even more traffic and parking congestion in their small communities. A limitation of the county's previous efforts to provide public coastal and waterway access[1] was that planning decisions often lacked science-based information needed to:

1. confirm broad public support for such actions;
2. determine the degree to which demand for waterway access facilities exceeds the supply;
3. identify the types of access amenities most desired by users;
4. determine the locations where those amenities are most desired or needed; and
5. quantify the economic benefits derived by the county from coastal and waterway access.

This project implemented surveys of Taylor County boat ramps, boat ramp users, and residents to address these five data needs.

This report[2] summarizes methods used for the three surveys in a question and answer format that addresses objectives organized according to six themes:

1. a boat ramp visitation profile;
2. a coastal and waterway access user profile;
3. coastal and waterway access locations favored by residents and boaters;
4. coastal and waterway access locations avoided by residents and boaters;
5. support for access facility improvements; and
6. economic impact from waterway access facilities (i.e., boat ramps).

[1] Coastal access facilities refer to locations directly on the Gulf of Mexico, while waterway access facilities refer to locations originating along rivers and interior shorelines that provide indirect access to the Gulf of Mexico. Lakes were not considered in this study.

[2] A comprehensive analysis of the Taylor County resident survey is also available (Davidson, 2010).

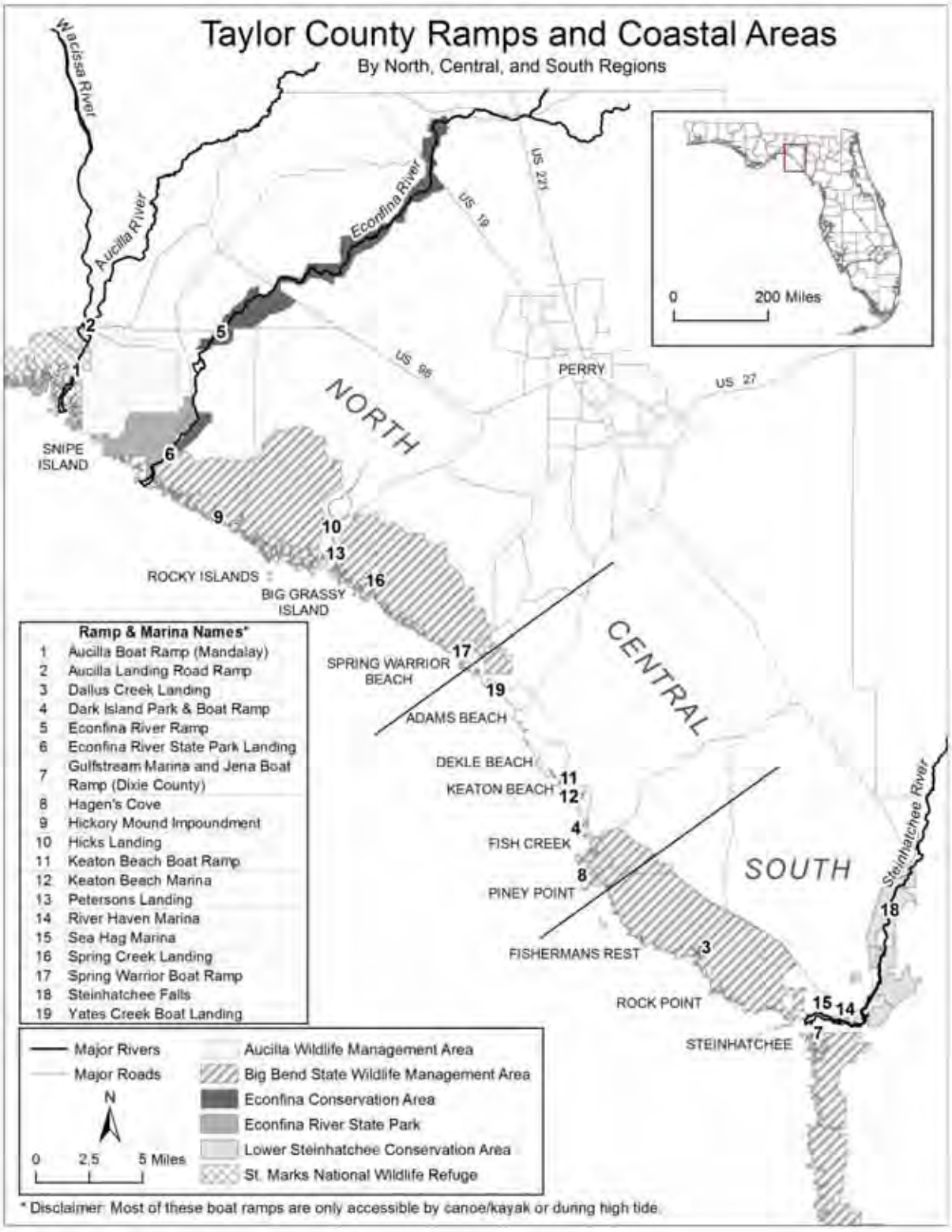

Figure 1. Map of Taylor County Coastal and Waterway Access Locations.

PROJECT GOAL AND OBJECTIVES

The project goal was to generate science-based information to assist Taylor County in planning for future public coastal and waterway access. Objectives are organized according to six themes:

1. Boat Ramp Visitation Profile
   - Determine which boat ramp facilities receive the most users.
   - Determine if peak use exceeds parking capacity at boat ramps.
   - Determine how ramp use varies throughout the year.
   - Estimate the number of trips that originate from county boat ramps.
   - Quantify in-county, out-of-county, and out-of-state boat ramp visitation.

2. Coastal and Waterway Access User Profile
   - Identify the proportion of resident respondents (year-round and seasonal/part-time) who do and do not access coastal locations and waterways.
   - Determine the types of coastal and water-based activities pursued by residents.
   - Estimate boat-ownership (motorized versus non-motorized) of residents.
   - Identify the types of coastal and water-based activities pursued by boaters.

3. Coastal and Waterway Access Locations Favored by Residents and Boaters[3]
   - Identify the favorite coastal and waterway access locations used by residents and boaters.
   - Identify the favorite coastal and waterway access locations for residents who own motorized and non-motorized boats.
   - Identify the most important factors in choosing a favorite coastal location or waterway access facility.

4. Coastal and Waterway Access Locations Avoided by Residents and Boaters
   - Identify the top coastal and waterway access locations avoided by residents and boaters.
   - Identify the top coastal and waterway access locations avoided by residents who own motorized and non-motorized boats.
   - Determine the factors that prevent or diminish the use of coastal and waterway access locations by residents and boaters.

5. Support for Access Facility Improvements
   - Determine if residents and boaters favor development of or improvements to boat ramp facilities.
   - Determine where residents and boaters favor development of or improvements to boat ramp facilities.

6. Economic Impacts Derived from Waterway Access Facilities
   - Determine the length of stay for boaters who visit Taylor County.
   - Determine boat trip related expenditures for Taylor County residents.
   - Determine boat trip related expenditures for Taylor County visitors.
   - Estimate the economic impact of boat ramp facilities to the Taylor County economy.

[3] The resident and boater populations surveyed are not necessarily mutually exclusive because many of the residents who responded to the survey also own watercraft.

METHODS

Surveys of Taylor County boat ramps, residents, and boaters were implemented to satisfy the project objectives.

First, a field survey of boat ramps was undertaken to observe peak use relative to facility parking capacity, and to determine the ratio of local versus out-of-county and out-of-state users (i.e., residents versus visitors).

Second, a mail survey of residents was conducted to determine the proportion of residents who do and do not use Taylor County coasts and waterways; their residency status (e.g., year-round versus seasonal/part-time); boat ownership; activities pursued; the locations that are accessed and avoided; and their reasons for avoiding locations.

Third, the survey of boat ramps offered an opportunity to solicit input from boaters who use Taylor County coastal and waterway access facilities. A questionnaire was developed to allow boaters to rate facility amenities that are attractive to users; to identify which ramps are avoided and reasons why they are avoided; and to estimate expenditures for boating trips and economic impacts from providing waterway access.

Boat Ramp Survey

A primary objective of the study was to determine if peak demand (i.e., weekends and holidays) exceeds the parking capacity of primary launch sites available to the public. To assess total demand for coastal and waterway access in Taylor County, it was necessary to include all important access facilities, whether they were a publicly owned and publicly maintained ramp (with or without a fee), or a privately owned ramp or launch facility available to the public for a fee. As such, the study includes commercial marinas that do not have official 'ramps' but use a sling or trailer to put boats in the water (e.g., River Haven Marina) and commercial marinas (e.g., Keaton Beach Marina[4]; Gulfstream Marina[5]) where people pay to launch their boats from the ramps. Due to the close proximity of the Gulfstream Marina to the Jena Boat Ramp, it was not possible to distinguish which location boaters were using, especially on high-use days when the ramps were surveyed. Therefore, both locations were surveyed as the Gulfstream Marina. The Sea Hag Marina declined to participate in the ramp survey but was included on the survey map as a potential access point.

Taylor County's twelve primary boat ramps were visited eleven times from November 2009 through September 2010. Boat ramps were visited at some point between approximately 9 a.m. and 3 p.m. on weekend days, which included three traditional boating holidays (Memorial Day, Independence Day, and Labor Day) to characterize peak-use periods. Note that the survey dates were meant to characterize peak-use times and were not randomly selected.

Field crews counted the number of trailers and tow vehicles present at ramps and, in doing so, recorded automobile and vessel trailer registration numbers (Table 1). There were 2,094 tag numbers collected. Cross-referencing those numbers with the state vessel title registration system, it was determined that 14.3% belonged to county residents, and 85.7% belonged to out-of-county visitors.

[4] The Keaton Beach Marina has a single lane ramp on its property. The marina provides parking with a fenced lot.

[5] The Gulfstream Marina closed in the fall of 2010 after the survey concluded. The ramp is now chained off and not being used.

Table 1. Estimated parking capacity and vehicles/trailers observed at Taylor County boat ramps.

Region	Ramp Name (parking capacity)	2009	2010 survey dates (month and day)										Ramp
		11/27	3/4	4/10	5/8	5/29	6/5*	6/19	7/3	7/17	8/15*	9/4	Totals
North	Aucilla Landing Road (8)	0	0	0	0	0	0	0	0	0	0	0	0
	Aucilla (Mandalay Road) (50)	27	8	27	22	16	8	14	12	6	0	15	155
	Econfina River State Park (70)	27	14	62	70	60	21	48	25	12	2	38	379
	Petersons Landing (10)	6	8	14	6	7	8	6	3	2	2	5	67
	Hicks Landing (15)	4	3	14	13	17	7	6	5	4	0	6	79
	Spring Warrior (23)	7	5	18	17	19	13	10	10	6	1	6	112
Central	Dekle Beach (20)	1	3	1	0	2	0	2	1	0	0	0	9
	Keaton Beach (45)	11	28	63	59	37	39	40	119	97	30	85	610
	Keaton Beach Marina (10)	2	12	23	25	0	9	12	16	37	6	22	164
	Dark Island Park (10)	0	5	5	0	5	2	6	13	20	3	11	70
South	Gulfstream Marina** (25)	18	33	45	52	35	0	14	27	94	24	36	378
	River Haven Marina (22)	4	3	8	12	5	0	7	12	11	2	7	71
VISITATION TOTALS		**107**	**122**	**280**	**276**	**203**	**107**	**165**	**243**	**289**	**70**	**231**	**2094**

Resident Survey

Taylor County residents were surveyed by mail to characterize use of and gauge support for improving coastal and waterway access facilities. The questionnaire was developed to determine the proportion of residents who do and do not use Taylor County coasts and waterways. Additional differentiation was made regarding year-round and seasonal/part-time resident status, motorized and non-motorized boat ownership, activities pursued, locations that are most commonly accessed and avoided, and reasons for avoiding locations.

The survey was conducted in accordance with a method pioneered by D. Dillman (1978). Taylor County Property Appraiser's land use codes were used to select residential parcels from county tax rolls and to exclude commercial, industrial, municipal, and retail properties from the sampling population. There are 8,737 residential parcels in Taylor County. Given a projected return rate of 20% based on past boating studies conducted by Florida Sea Grant (Sidman, et al., 2007, 2008), a minimum sample of 1,747 parcel owners[6] was calculated to achieve a representative sample of 384 survey returns. However, since respondents often do not answer all questions on a survey, a random sample of 2,000 was selected from the residential parcel population with the expectation that a minimum of 400 completed and valid surveys would be returned. This oversampling was used to offset question non-response that can result from skipped or incomplete answers to questions.

The selected Taylor County residents were mailed a cover letter and a map-based questionnaire. To minimize the time required to complete the questionnaire, the survey was limited to two pages in length (see Appendix B for the resident survey and cover letter). Prior to mailing, the questionnaire was pre-tested with a small sample of county residents, and based on respondents' answers and feedback, necessary adjustments were made to improve its content and readability. In addition, the survey was advertised in a local newspaper to increase public awareness of the project and to notify residents of the survey's distribution.

[6] Based on a discussion with Taylor County staff, it was determined that few residential properties were rented and that the most reliable method of randomly selecting residents would be to use county property tax rolls.

Two survey waves were mailed to Taylor County residents with a reminder card being sent two weeks after the initial mailing.[7] The second survey wave was mailed two weeks after the reminder cards, and it was only sent to recipients who had not yet returned their questionnaires. A total of 663 Taylor County residents completed and returned questionnaires resulting in a 33.2% return rate.

Boater Survey

The eleven scheduled boat ramp visits provided an opportunity to directly survey boaters who use Taylor County coastal and waterway access facilities. A questionnaire, patterned after the resident survey instrument, was inserted into a plastic watertight envelope and placed on the windshields of vehicles observed at boat ramps.[8] Prior to distribution, the survey was pre-tested with a small sample of Taylor County boaters to ensure that the questions were being interpreted and answered consistently and correctly (see Appendix C for the boater survey and cover letter).

The survey provided information on the types of vessels owned and operated; the suite of boating activities conducted by resident and visiting boaters; the timing, frequency, and duration of trips; the types of access facilities used; the locations (ramps or marinas) accessed and avoided; and reasons for access facility avoidance. In addition, information on expenditures per trip was sought (e.g., hotel, gas, bait, food and ice, restaurants) and whether expenditures were made at locations within or outside Taylor County. Lastly, the general location (i.e., zip code) of the respondent's primary residence was used to distinguish between expenditures made by resident and visiting boaters.

Field crews distributed 1,644[9] questionnaires at Taylor County boat ramps on 10 of the 11 sample dates, and a total of 209 questionnaires were returned, resulting in a 12.7% return rate.

[7] The first survey wave was mailed on May 7, 2010, with the second wave mailed on June 4, 2010.

[8] The convenience sampling technique used to survey boaters does not necessarily yield a random selection of survey recipients. However, the results are still meaningful given that each boater observed on select peak-season weekends and holidays had an equal chance of receiving a survey, and that the results are being extrapolated to a narrowly defined (relatively homogeneous) population of boaters (Czaja and Blair, 2005).

[9] The discrepancy between the total number of vehicles observed at ramps (Table 1) and the number of questionnaires distributed is due to surveys not being distributed on the November 25, 2009 ramp visit. Also, on some high-use days, the field crews ran out of pre-packaged questionnaires.

RESULTS

The results from boat ramp, resident, and boater surveys are presented in a question-and-answer format in accordance with six themes that reflect Taylor County coastal and waterway access information needs (see project objectives above for the six themes, p.3).

Table 2. Top five coastal and waterway access locations.

Location	Percent of Users**	Rank
Keaton Beach: Keaton Beach Boat Ramp and Keaton Beach Marina	37.0%	1
Steinhatchee: Gulfstream Marina*, River Haven Marina and Jena Boat Ramp*	21.4%	2
Econfina River State Park Landing	18.1%	3
Aucilla Boat Ramp (Mandalay Road)	7.4%	4
Spring Warrior Boat Ramp	5.3%	5

* Located in Dixie County

** Percentages are derived from vessel trailer count totals shown in Table 1. Percentages for Keaton Beach and Steinhatchee combine counts for several launch facilities associated with those localitions (e.g., Keaton Beach includes counts for the Keaton Beach Boat Ramp and the Keaton Beach Marina; Steinhatchee includes counts for the Gulfstream Marina, River Haven Marina and the Jena Boat Ramp).

1. Boat Ramp Visitation Profile

Q: Which Taylor County access locations receive the most users?

A: The top five access locations as determined by the boat ramp survey receiving the most users are shown in Table 2. The Keaton Beach location attracts the greatest number of users (approximately 37% of all users recorded during boat ramp visits). The Steinhatchee and Econfina River State Park localities also accommodate significant numbers of users (21% and 18% of all users, respectively).

Table 3. Average percentage capacity reached or exceeded at boat ramp locations during peak use.

Region	Ramp Location	Average % Capacity Reached**	Rank
North	Aucilla Landing Boat Ramp	0.0%	
	Aucilla Boat Ramp (Mandalay Road)	36.8%	
	Econfina River State Park Landing	66.1%	4
	Petersons Landing	65.6%	5
	Hicks Landing	57.0%	
	Spring Warrior Boat Ramp	47.8%	
Central	Dekle Beach	5.6%	
	Keaton Beach: Keaton Beach Boat Ramp; Keaton Beach Marina	138.6%	1
	Dark Island Park and Boat Ramp	74.4%	3
South	Steinhatchee: Gulfstream Marina*; River Haven Marina; Jena Boat Ramp*	99.8%	2

*Located in Dixie County

** The average % capacity reached is derived by comparing vessel trailer counts for each survey date with parking capacity estimates shown in Table 1. Percentages for Keaton Beach and Steinhatchee combine counts for several launch facilities associated with those localities (e.g., Keaton Beach includes counts for the Keaton Beach Boat Ramp and the Keaton Beach Marina; Steinhatchee includes counts for the Gulfstream Marina, River Haven Marina and the Jena Boat Ramp).

Q: Does peak use exceed parking capacity at boat ramps in the county?

A: For most access locations, the number of users observed on survey dates did not exceed the estimated number of available parking spaces provided. For example, on the survey dates, most access locations received use that was between 36 and 74 percent of parking capacity (Table 3). Several ramps did, however, exhibit near or overcapacity conditions on some survey dates. Most notably, the Keaton Beach and Steinhatchee locales experienced near or overcapacity conditions on six of nine survey dates.[10] For the Keaton Beach and Steinhatchee locations, the greatest use was observed during the summer survey dates which coincided with scallop season (i.e., June[11], July, and August).

For Keaton Beach the average observed use exceeded parking capacity by 39% – with the greatest observed use exceeding parking capacity by almost one-and-a-half times (245%) on July 3, 2010. In Steinhatchee, where the average observed use was 100% of capacity, the greatest use also exceeded capacity by almost one-and-a-half times, or 223% on July 17, 2010. In Keaton Beach and Steinhatchee, an overcapacity condition typically results in large numbers of vessel trailers and tow vehicles being parked along public right-of-ways and residential side-streets.

[10] The Table 3 summary reflects nine of eleven survey dates. Heavy storms occurred during two of the survey dates which significantly reduced the number of ramp users relative to other proximate survey dates.

[11] The start of scallop season typically begins on July 1 and ends September 10. However due to fears that the Deepwater Horizon oil spill in the Gulf of Mexico would impact Taylor County, the start of the 2010 scallop season was moved forward to June 19.

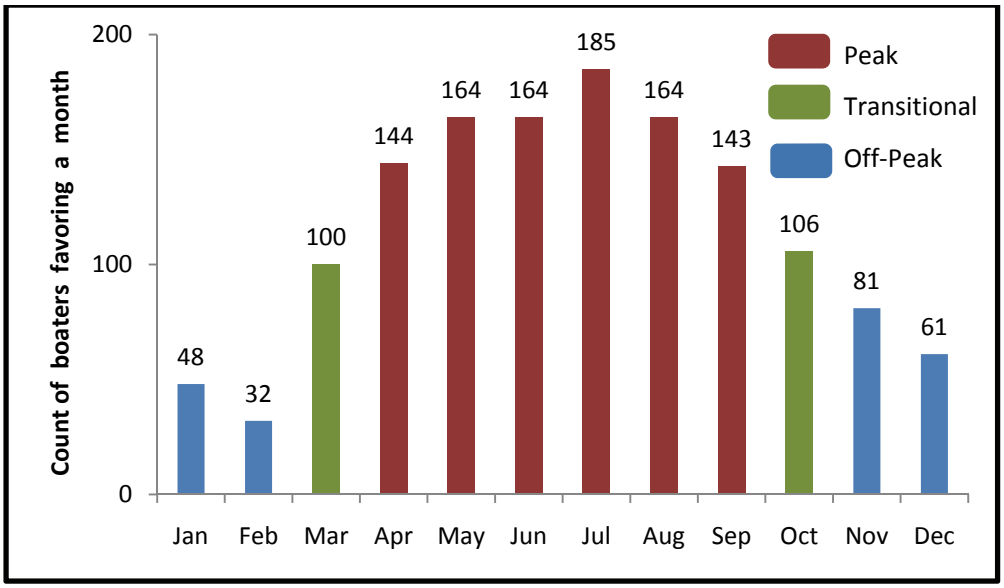

Figure 2. Frequency of boating use per month. N=206 total responses.

Q: How does Taylor County ramp use vary throughout the year?

A: Ramp use is characterized according to peak, transitional, and off-peak periods consistent with boaters' monthly trip preferences. Of the 206 boaters who responded to this question on the survey, approximately 90% indicated July as a month in which they engage in boating activities on Taylor County waterways. In Figure 2, the peak boating period is highlighted in red; off-peak periods highlighted in blue; and transitional periods highlighted in green (with the height of the bars indicating the relative intensity of waterway use per month).

The boater survey results show that the peak boating season in Taylor County runs from April through September. March and October represent a slower transitional period. An off-peak period, characterized by substantially lower use, exists from November through February. Average use ratios by season indicate that boaters are almost three times as likely to use Taylor County waterways during the peak months as they are during off-peak months; and boaters are almost twice as likely to use the waterways during the transitional months of March and October, than they are during the off-peak months.

Table 4. Average number of trips per day by seasonal use period*.

	Peak	Transitional	Off-Peak	Yearly
Weekend Day	224.2	143.7	77.8	148.5
Weekday	56.0	35.9	19.4	37.1
Averages	140.1	89.8	48.6	92.8
Average number of trips per day for all seasons combined is **93.**				

* Note: See Appendix D for an explanation of the method used to estimate weekend and weekday trips during peak, transitional and off-peak periods.

Table 5. Estimated daily and annual trip counts for ramps by seasonal use period.

Weekend Days	Trips	Number of Weeks	Estimated Number of Trips
Peak	224.2 x 2 days = 448.4	26 plus 3 extra days*	12,331
Transitional	143.7 x 2 days = 287.4	10	2,874
Off-peak	77.8 x 2 days = 155.6	16	2,490
Yearly weekend subtotal			**17,695**
Weekdays	**Trips**	**Number of Weeks**	**Estimated Number of Trips**
Peak	56.0 x 5 days = 280	26 minus 3 extra days*	7,112
Transitional	35.9 x 5 days = 179.5	10	1,795
Off-peak	19.4 x 5 days = 96.9	16	1,551
Yearly weekday subtotal			**10,458**
Estimated number of yearly boat trips: **(17,695 + 10,458) = 28,153**			

* Note: including three extra days for long weekends during peak boating season (Memorial Day, Independence Day, Labor Day).

Table 6. Estimated annual number of trips from residents and visitors.

User Category	Total Trips Generated 28,153	
	Percentage of Total Trips	Number of Total Trips
County Resident	14.3%	4,025
County Visitor	85.7%	24,128

Category	Total Trips Generated 24,128	
	Percentage of Visitor Trips	Number of Visitor Trips
Daytrips	51.7%	12,474
Overnight Trips	48.3%	11,654

Q: How many boating trips originate from Taylor County boat ramps?

A: The annual estimated number of boating trips originating from the twelve boat ramps analyzed for the study is 28,153, with an average of approximately 93 trips per day (Tables 4 and 5). Visitors are responsible for 85.7% (24,128) of the trips (Table 6). Approximately 52% of the trips (12,474) made by visitors are daytrips; 48.3% (11,654) are overnight trips. (Table 6)

Q: What proportion of Taylor County boat ramp facility use is attributed to in-county, out-of-county, and out-of-state visitation?

A: An analysis of tow vehicle and vessel trailer registration numbers collected at boat ramps on the eleven survey dates indicates that about 13.2% of ramp users were Taylor County residents, 45.5% were from out-of-county (i.e., from other Florida counties), and 33.3% were from out-of-state. Keep in mind that survey dates were not randomly selected; rather, they were meant to characterize peak-use times.

2. Coastal and Waterway Access User Profile (Residents and Boaters)

Q: What is the proportion of resident respondents who do and do not use Taylor County coastal locations and waterways?

A: Eighty-three percent of survey respondents who were Taylor County year-round residents indicated that they access coastal locations and/or waterways. An even higher percentage (94%) of seasonal/part-time residents indicated that they accessed coastal locations and/or waterways. Note that the resident survey targeted homeowners in the county, where according to the U.S. Census Bureau (2010) the homeownership rate is approximately 80%. The survey results are assumed to be representative of county residents as a whole given that the vast majority of Taylor County residents are homeowners.

Q: What types of coastal and water-based activities do Taylor County residents pursue?

A: In descending order, the top five coastal and water-based activities enjoyed most by Taylor County residents are fishing from a boat (89%), scalloping (74%), pleasure boating/cruising (59%), swimming (55%), and fishing from the shore (46%). (Table 7)

Q: What types of coastal and water-based activities are pursued by boaters in Taylor County?

A: The top five activities that boaters pursue mirror those of residents and include fishing, scalloping, pleasure boating/cruising, swimming, and nature-viewing. Fishing is the dominant activity of boater survey respondents, with approximately 97% reporting that they engage in fishing during a typical boating trip. Scalloping ranks second (75%) and pleasure boating/cruising ranked third (31%). Swimming and nature-viewing are tied in fourth place with 27% of responses.

Table 7. Coastal and water-based activities that residents engage in.

Activity	Responses*	Participation Rate
Fishing from a boat	507	89.1%
Scalloping	421	74.0%
Pleasure boating / cruising	337	59.2%
Swimming	310	54.5%
Fishing from the shore	262	46.0%
Nature viewing / sightseeing	261	45.9%
Scuba diving / snorkeling	225	39.5%
Crabbing	208	36.6%
Hunting	206	36.2%
Picnicking	180	31.6%
Canoeing / Kayaking	132	23.2%
Hiking / Walking / Jogging	125	22.0%
Camping	94	16.5%
Skiing / Watersports	83	14.6%
Airboating	52	9.1%
Jet Skiing	34	6.0%
Other	24	4.2%
Sailing	14	2.5%
*Total Responses = 569		

Q: What proportion of Taylor County residents own boats (motorized or non-motorized)?

A: As shown in Table 8, approximately 71% of Taylor County resident survey respondents own a powerboat, 2% own sailboats, and 32% own a kayak/canoe.

Table 8. Taylor County resident vessel ownership.

Vessel Type	Percentage of Responses*
Power boat	70.8%
Sailboat	2.4%
Kayak / Canoe	32.0%

*Percentages do not add up to 100% because some residents reported owning more than one boat type.

3. Coastal and Waterway Access Locations Favored by Residents and Boaters

Table 9. The five favorite coastal locations, ramps, and waterways of Taylor County residents.

Rank	Location	Category	# of Responses*	Percentage of Responses
1	Keaton Beach	Coastal Location	74	19.7%
2	Keaton Beach Boat Ramp	Ramp	67	17.8%
3	Keaton Beach Marina	Ramp	34	9.1%
4 (tie)	Steinhatchee River	Waterway	25	6.6%
4 (tie)	River Haven Marina	Ramp	25	6.6%
5	Steinhatchee	Coastal Location	23	6.1%

Note: The top 5 locations are virtually the same for all residents, year-round residents, and seasonal/part-time residents.

* A total of N = 375 residents responded to this question.

Q: What are the favorite coastal and waterway access locations of Taylor County residents?

A: Table 9 lists the top five coastal locations, ramps, and waterways favored by Taylor County resident survey respondents. The survey results indicate that residents overwhelmingly prefer Keaton Beach (which includes a public boat ramp and a private marina) to access county coasts and waterways. The town of Steinhatchee represents residents' second favorite coastal and waterway access location.

Table 10. The four favorite boat ramps of boaters in Taylor County.

Rank	Ramp Name	# of Responses*	Percentage of Responses
1	Keaton Beach Boat Ramp	36	29.0%
2	Econfina River State Park Landing	24	19.3%
3	Aucilla Boat Ramp (Mandalay Road)	16	12.9%
4	Keaton Beach Marina	11	8.8%

* A total of N = 124 boaters responded to this question.

Q: What are the favorite boat ramps of boaters in Taylor County?

A: The Keaton Beach Boat Ramp and the Econfina River State Park Landing are the two favorite boat ramps of Taylor County boaters. Together, these two facilities account for approximately 50% of the favorite ramp choices of boater survey respondents (Table 10). Other prominently used ramps include the Aucilla Boat Ramp on Mandalay Road (12.9%) and the Keaton Beach Marina ramp (8.8%).

Table 11. The favorite coastal locations, ramps, and waterways of Taylor County residents (motorized versus non-motorized boat owners).

Rank	Location	Category	# of Responses	Percentage of Responses
Motorized Boat Owners (N = 400)				
1	Keaton Beach Boat Ramp	Ramp	57	14.3%
2	Keaton Beach	Coastal Location	56	14%
3	Keaton Beach Marina	Ramp	29	7.5%
4	River Haven Marina	Ramp	25	6.3%
5	Steinhatchee River	Waterway	24	6.0%
Non-Motorized Boat Owners (N= 142)				
1	Keaton Beach Boat Ramp	Ramp	21	14.8%
2	Keaton Beach	Coastal Location	20	14.1%
3	River Haven Marina	Ramp	10	7.0%
4 (tie)	Keaton Beach Marina	Ramp	9	6.3%
4 (tie)	Steinhatchee River	Waterway	9	6.3%

Note: The favorite locations are virtually the same for all residents, year-round residents, and seasonal/ part-time residents (with identical rankings).

Q: What are the favorite coastal and waterway access locations of Taylor County residents who own motorized and non-motorized boats?

A: The resident survey results show that Keaton Beach and the Keaton Beach Boat Ramp are, overwhelmingly, the favorite coastal access locations of residents who own both motorized and non-motorized boats. River Haven Marina, the Keaton Beach Marina, and the Steinhatchee River are also popular waterway access sites for recreational boating (for both motorized and non-motorized boating).

Table 12. Ranking of factors associated with favorite boat ramp facilities.

Rank	Factors	# of Responses	Number Responses Indicating "Important"	Percentage Responses Indicating "Important"
Waterway Characteristics				
2	Direct access to the Gulf	195	179	94.2%
5	Well-marked access channels	187	153	81.8%
	Calm / protected waters	190	132	69.4%
	Natural / undeveloped shoreline	185	110	59.9%
	Deep-water access	187	108	57.7%
Quality of Facilities				
	Trash cans	194	146	75.2%
	Paved road for access	194	123	63.4%
	Restroom availability	196	110	56.1%
	No parking or launch fees	191	106	55.4%
	Utilities (water, lighting)	189	72	38.1%
	Near my home	192	72	37.5%
	Nearby amenities (e.g., store, restaurant, hotel)	191	71	37.1%
	Paved parking lot	194	66	34.0%
	Picnic / recreation area	190	22	11.5%
Activity Requirements				
4	Close to my favorite boating spots	195	163	83.5%
	Availability of fishing supplies, bait, etc.	189	102	53.9%
	Solitude / remoteness	189	74	39.1%
	Fish cleaning stations	191	47	24.6%
Boating-related Amenities				
1	Easy to launch / retrieve boat	195	186	95.3%
3	Short wait to launch	198	179	90.4%
	Boat dock / piers	196	156	79.5%
	Fuel availability	191	47	24.6%
	Pump-out station	190	4	2.1%

Q: What are the most important factors in choosing a favorite boat ramp facility?

A: The top five factors are highlighted in blue in Table 12. The most important factors for choosing a boat ramp, in descending order of importance, are: easy to launch and retrieve boat, direct access to the Gulf, short wait to launch, close to favorite boating spots, and well-marked access channels. Between 82% and 95% of boaters selected from these top five factors. Trash cans and boat docks/piers are also factors chosen by over 75% of boaters.

4. Coastal and Waterway Access Locations that Residents and Boaters Try to Avoid

Table 13. The most avoided coastal and waterway access locations of Taylor County residents.

Rank	Location	Category	# of Responses*	Percentage of Responses
1	Keaton Beach Boat Ramp	Ramp	46	17.3%
2	Keaton Beach	Coastal Location	28	10.5%
3	Spring Warrior Boat Ramp	Ramp	21	7.9%
4	Gulfstream Marina (Dixie County)	Ramp	19	7.1%
5	Yates Creek Boat Landing	Ramp	17	6.4%

Note: The top five locations are the same for all residents, year-round residents, and seasonal/part-time residents (with similar % breakdowns).

* A total of N = 265 residents responded to this question

Q: What are the top Taylor County coastal and waterway access locations that residents and boaters try to avoid?

A: The survey results indicate (Table 13) that Keaton Beach boat ramp (17.3%) is a location that a large percentage of residents try to avoid due to crowds and inadequate parking. Other locations that are avoided by significant numbers of users include the locality of Keaton Beach (10.5%), the Spring Warrior Boat Ramp (7.9%), Gulfstream Marina in Dixie County (7.1%), and Yates Creek Boat Landing (6.4%) mainly due to shallow water, inadequate parking, and inadequate docks.

Table 14. Coastal locations, ramps and waterways avoided by Taylor County residents (motorized versus non-motorized boat owners).

Rank	Location	Category	# of Responses	Percentage of Responses
Motorized Boat Owners (N=278)				
1	Keaton Beach Boat Ramp	Ramp	40	14.3%
2	Keaton Beach	Coastal Location	23	8.3%
3	Gulfstream Marina (Dixie County)	Ramp	19	6.8%
4	Spring Warrior Boat Ramp	Ramp	16	5.8%
5	Aucilla Boat Ramp (Mandalay Road)	Ramp	14	5.0%
Non-motorized Boat Owners (N=90)				
1	Keaton Beach Boat Ramp	Ramp	11	12.2%
2	Keaton Beach	Coastal Location	10	11.1%
3	Gulfstream Marina (Dixie County)	Ramp	6	6.6%
4 (tie)	Spring Warrior Boat Ramp	Ramp	5	5.5%
4 (tie)	Aucilla Boat Ramp (Mandalay Road)	Ramp	5	5.5%

Note: Similar results were obtained for residents, year-round residents, and seasonal/part-time residents (with virtually identical rankings).

Q: What are the most avoided coastal and waterway access locations of Taylor County residents who own motorized and non-motorized boats?

A: According to the survey (Table 14), Keaton Beach is a location that is avoided by a fairly large percentage of motorized and non-motorized resident boaters. Other locations that owners of both motorized and non-motorized boats would like to use but try to avoid include Spring Warrior Boat Ramp, Aucilla Boat Ramp (Mandalay Road), and Gulfstream Marina (Dixie County).

Table 15. Percentage of avoidance factors that diminish Taylor County residents' desire to use a coastal location, ramp, or waterway.

Rank	Avoidance Factor	# of Responses	Percentage of Responses	95% Confidence Interval
1	Inadequate parking	205	58.9%	53.9- 63.9%
2	Crowds	142	40.8%	35.7-45.9%
3	Inadequate docks / no docks	133	38.2%	33.2- 43.2%
4	Poor or no toilets	126	36.2%	31.3- 41.1%
5	Water depth too shallow	122	35.0%	30.1-39.9%
	Damaged ramp pavement	91	26.1%	21.6-30.6%
	No public picnic / recreation facilities	81	23.2%	18.9-27.5%
	Poor access roads	75	21.5%	17.2-25.8%
	Lacks safety / dangerous location	70	20.1%	15.9-24.3%
	Ramp lanes too narrow	66	18.9%	14.8-23.0%
	Too far to drive / too remote	39	11.2%	7.9-14.5%
	Too much trash / pollution	29	8.3%	5.4-11.2%

Table 16. Percentage of avoidance factors that diminish boaters' desire to use a coastal location, ramp, or waterway.

Rank	Avoidance Factor	# of Responses	Percentage of Responses
1	Inadequate parking	42	61.7%
2	Water depth too shallow	36	52.9%
3	Inadequate docks / no docks	33	48.5%
4	Crowds	29	42.6%
5	Poor access roads	29	42.6%

Q: What factors prevent or diminish the use of Taylor County coastal and waterway access locations?

A: The top five reasons residents gave for avoiding a coastal location, ramp, or waterway are inadequate parking, crowds, inadequate docks, poor toilets, and water depth too shallow (Table 15). In addition to these factors, boaters also cited damaged ramp pavement, no public picnic or recreation areas, and poor access roads as prominent reasons for avoiding particular coastal and waterway access locations.

There is a positive and significant correlation between the inadequate parking and crowding factors. In other words, a large percentage of residents who identified “inadequate parking” as an avoidance factor, also indicated “crowds” as an avoidance factor. Note that these factors and rankings (listed in Table 15) are the same when evaluated according to motorized versus non-motorized boat ownership status. Avoidance factors were also solicited from boaters observed using ramps. The top five reasons boaters avoided a boat ramp include: inadequate parking, water depth too shallow, inadequate docks, crowds, and poor access roads (Table 16).

5. Support for Access Facility Improvements (Residents and Boaters)

Table 17. Summary of residents who favor new ramps and improvements to existing ramp facilities.

Resident Status	New Ramps			Improvements to Ramp Facilities		
	Yes	No	No Opinion	Yes	No	No Opinion
Year-Round	59.5%	13.4%	27.1%	70.7%	8.3%	21.0%
Seasonal/Part-time	74.4%	11.9%	13.7%	71.0%	7.4%	21.4%

Table 18. Summary of boaters who favor new ramps and improvements to existing ramp facilities.

Boater Residency Status	New Ramps			Improvements to Ramp Facilities		
	Yes	No	No Opinion	Yes	No	No Opinion
County Resident	75.0%	21.4%	3.6%	77.8%	14.8%	7.4%
Visitor	58.7%	16.3%	25.0%	75.1%	5.8%	19.1%

Q: Do residents and boaters favor development of new Taylor County boat ramps and improvements to existing county ramp facilities?

A: The majority of year-round and seasonal/part-time residents (Table 17) and resident and visiting boaters (Table 18) favor the development of new boat ramps as well as improvements to existing ramp facilities.

Table 19. Taylor County regions where residents and boaters favor more ramps or ramp improvements.

Survey Respondents	Region for New Ramps			Region for Ramp Improvements		
	North	Central	South	North	Central	South
Residents						
Year Round	24.1%	36.1%	39.8%	31.4%	40.9%	27.7%
Seasonal	8.3%	17.4%	74.3%	8.4%	27.1%	64.5%
Boaters						
Resident	12.8%	56.4%	30.8%	36.8%	52.7%	10.5%
Visitor	16.4%	32.8%	50.8%	47.9%	25.6%	26.5%

Q: Where do residents and boaters favor development of or improvements to Taylor County boat ramp facilities?

A: The majority of resident survey respondents (year-round and seasonal/part-time) favor new ramps and improvements being made to existing ramps. However, there are differences as to where new ramps should be located and where ramp improvements should be made (Table 19). For example, year-round residents are fairly evenly split between favoring new ramps in the central and south regions, while seasonal/part-time residents overwhelmingly favor new ramps and improvements to existing ramps in the south region. Year-round residents favor improvements to existing ramps in the central region of the county – see Figure 1 for north, central and south region locations.

Boaters residing in Taylor County favor more ramps and improvements to existing ramps in the central region, while visiting boaters favor more ramps in the south region and improvements to ramp facilities in the north region (Table 19).

6. Economic Impact Derived from Public Waterway Access Facilities (Boater Survey)

Table 20. Visiting boaters' length of stay.

Length of Stay*	# of Responses	Percentage of Responses
One day	77	51.7%
Two days	24	16.1%
Three days	21	14.1%
Four days	14	9.4%
Five days	4	2.7%
One week	1	< 1%
Longer than one week	8	5.4%

*Mean length of stay is 2.2 days

Q: How long do boaters who visit Taylor County typically stay?

A: While the average length of stay for visiting boaters to Taylor County is estimated at two days, just over half are daytrip visitors who did not stay overnight. A little less than half of the boaters stayed for two or more days (Table 20).

Table 21. In-County boating trip expenditures by category for Taylor County resident and visiting boaters (based on the zip code of primary residence).

Expenditure	Average In-County Expenditures Per Trip For Survey Respondents			Total Annual In-County Expenditures for All User Trips			
	Residents	Daytrip Visitors	Overnight Visitors	Residents	Daytrip Visitors	Overnight Visitors	All Groups
Boat Fuel	$47.59	$38.41	$77.86	$191,550	$479,126	$907,380	$1,578,056
Fishing Supplies	$33.15	$20.23	$33.74	$133,429	$252,349	$393,206	$778,984
Boat Maintenance	$50.30	$26.19	$16.14	$202,458	$326,694	$188,096	$717,248
Restaurant	$11.85	$18.33	$70.02	$47,696	$228,648	$816,013	$1,092,357
Groceries	$39.44	$19.51	$41.89	$158,476	$243,368	$488,186	$890,030
Hotel	$4.78	$0.00	$60.74	$19,240	$0	$707,864	$727,104
House/condo rental	$0.00	$0.00	$50.08	$0	$0	$583,632	$583,632
Ramp Fee	$4.26	$3.51	$6.88	$17,147	$43,784	$80,180	$141,111
Marina Fee	$4.63	$6.13	$4.62	$18,836	$76,466	$53,841	$149,143
Slip Fee	$3.70	$0.93	$1.64	$14,893	$11,601	$19,113	$45,607
Other 1: Veh. Fuel	$0.00	$2.77	$3.82	$0	$34,553	$44,518	$79,071
Other 2: Misc.	$12.31	$2.88	$10.09	$49,548	$35,925	$117,589	$203,062
Total	$212.02	$138.89	$377.52	$853,273	$1,732,514	$4,399,618	$6,985,405

*Total annual In-County expenditures reflect estimated total annual trips made by each user group: Residents (4,025); Daytrip Visitors (12,474); Overnight visitors (11,654) (See Table 6).

Q: How much do residents spend on Taylor County boating trips?

A: In-county boat trip expenditures are based on the boater survey respondent's recollection of the expenses associated with their last boating trip in Taylor County (Table 21).

The average total in-county trip expenditure of these boaters is estimated at $212.02 per trip. When multiplied by the number of estimated number of yearly boating trips for residents, this

translates to $853,000 annually (Table 21). The survey results also show that 90.9% of the total resident boater trip expenditures are purchased within Taylor County.

Q: How much do visitors spend on Taylor County boating trips?

A: The average annual reported boating trip expenditures by category for visiting boaters (a combination of both Florida County and out-of state boaters), distinguished as daytrip visitors and overnight visitors is presented in Table 21.

The average total in-county trip expenditure of visiting boaters who were day trippers is estimated at $138.89 per trip. The average total in-county trip expenditure of visiting boaters who stayed overnight is estimated at $377.52 per trip. When multiplied by the number of estimated boating trips for visitor groups, this translates to $1.73 million for daytrip visitors and $4.39 million for overnight visitors, annually (Table 21).

The survey results also show that 83.5% of the total visitor trip expenditure is purchased within Taylor County.

Table 22. Summary of total economic impacts of expenditures by boaters that use ramps in Taylor County, Florida, 2010.

User Group	Impact Type	Employment (jobs)*	Labor Income	Value Added	Output
Residents	Direct Effect	**16**	**$366,254**	**$575,710**	**$865,527**
Daytrip visitors	Direct Effect	30	$743,571	$1,172,714	$1,758,761
	Indirect Effect	1	$39,269	$62,227	$112,107
	Induced Effect	8	$305,360	$467,018	$707,943
	Total Effect	**39**	**$1,088,201**	**$1,701,959**	**$2,578,812**
Overnight Visitors	Direct Effect	79	$1,780,102	$2,807,154	$4,489,491
	Indirect Effect	4	$139,709	$227,452	$417,285
	Induced Effect	20	$737,446	$1,129,860	$1,716,040
	Total Effect	**103**	**$2,657,256**	**$4,164,465**	**$6,622,816**
All Users	Direct Effect	125	$2,889,926	$4,555,557	$7,113,779
	Indirect Effect	5	$178,978	$289,679	$529,393
	Induced Effect	28	$1,042,806	$1,596,187	$2,423,983
	Total Effect	**158**	**$4,111,711**	**$6,442,133**	**$10,067,155**

* Employment impacts represent fulltime and part-time jobs. Values expressed in 2011 dollars.

See appendix D for a discussion of the *Implan* analysis.

Q: What is the economic impact of boat ramp facilities to the Taylor County economy?

A: Total economic impacts of expenditures by recreational boaters who use boat ramps[12] in Taylor County, Florida (2010) are summarized in Table 22 according to user group and impact type. Total impacts for all users, including regional multiplier effects, were 158 full-time and part-time jobs, $4.11 million in labor income (earnings), $6.44 million in value added, and $10.07 million in output or revenues, with these values expressed in 2011 dollars.

[12] The economic impact is a conservative estimate given that boaters who use the Sea Hag Marina were not surveyed. The Sea Hag Marina caters to clients that store their boats at the marina. The marina does not typically use its forklift to help launch boats trailered by the general public.

Total economic impacts were highest for overnight visitors, with employment impacts of 103 jobs, labor income impacts of $2.66 million, value added impacts of $4.16 million, and output impacts of $6.62 million. Total economic impacts for daytrip visitors were 40 jobs, $1.09 million in labor income, $1.70 million in value added, and $2.58 million in output. Direct economic impacts for county residents were 16 jobs, $366,000 in labor income, $575,000 in value added, and $865,000 in output.

CONCLUSIONS

Conclusions are presented according to the six project objectives.

1. Boat Ramp Visitation Profile.

    - The county currently has a very limited inventory of ramps that are easily accessible (both from the land and water) with suitable parking that can accommodate peak demand. There are a number of smaller ramps that do not reach capacity even during peak periods. However, these ramps are typically "out-of-the-way," a number are accessible only by unpaved roads, and most can only accommodate small, shallow draft boats. While these ramps can best accommodate canoes and kayaks, the survey results suggest that these user groups, like power boat owners, also prefer to use the more modern and conveniently located access facilities.

    - The Aucilla Landing Road Ramp represents a ramp that has been updated and well-maintained. However, not one vehicle was observed at this site during the eleven weekend and holiday visits. This finding suggests that improvements to public launch facilities would be most beneficial if they were made at those locations that are more frequently used and provide more direct access to Gulf waters.

    - Taylor County boat ramps cater primarily to visitors from out-of-state or from other Florida counties. Since visiting boaters have a substantial economic impact, the County would benefit greatly from enhancing boat access facilities, particularly in the Keaton Beach and Steinhatchee areas.

2. Coastal and Waterway Access User Profile.

    - Half of the boaters who use Taylor County waterway access facilities are visitors who stay only for the day (day trippers). However, a significant proportion of visiting boaters (about 30%) stay for two to three days. The county could explore ways of enhancing lodging opportunities and other recreational amenities to entice more day trippers to stay for longer periods.

3. Coastal and Waterway Access Locations Favored by Residents and Boaters.

    - The favorite access locations are also locations that users try to avoid. Thus, facility improvements or additional ramps at nearby locations may offer alternatives to alleviate crowding and congestion.

    - Motorized and non-motorized boaters identified a similar suite of both "favorite" and "avoided" coastal locations, ramps, and waterways. This finding suggests that improvements to these ramp facilities would satisfy the recreational needs of most boaters.

4. Coastal and Waterway Access Locations Avoided by Residents and Boaters.

    - Crowding at coastal and waterway access locations is the most important avoidance factor that residents and boaters cited. This corroborates the finding that inadequate parking also contributes to avoidance, because a large percentage of residents who identified "inadequate parking" as an avoidance factor, also indicated "crowds" as an avoidance factor. Increasing parking availability at existing facilities that experience high use would help to alleviate crowding and congestion.

5. Support for Access Facility Improvements.

    - There is strong support from motorized boat owners, non-motorized boat owners, and non-boat owners for the addition of new ramps and improvements to existing facilities. However, the location preferences for new ramps and ramp facility improvements vary somewhat across these groups, although most respondents favor central (Keaton Beach) and south (Steinhatchee) regions.

6. Economic Impacts Derived from Waterway Access Facilities.

    - The estimated annual economic impact of Taylor County boat ramp facilities is $10.07 million. Thus, improvements to boating access facilities that accommodate large numbers of visiting boaters would directly stimulate the local economy.

    - Boat ramps generate significant local economic activity because the overwhelming majority of boat trip-related expenditures remain in Taylor County, with residents spending 90.9% of their purchases and visitors spending 83.5% of their purchases within the county.

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APPENDICES

Appendix A: Public and Private Boat Launch Facilities in Taylor County

Table 23. Privately-owned ramp or launch facilities available to the public for a fee.

Region	Ramp Name
North	Hicks Landing
	Petersons Landing
	Spring Warrior Boat Ramp
Central	Yates Creek Boat Landing
	Keaton Beach Marina
South	River Haven Marina
	Sea Hag Marina
	Gulfstream Marina (Dixie County)

Table 24. Publicly-owned and publicly-maintained ramp or launch facilities (with or without a fee).

Region	Ramp Name
North	Aucilla Landing Road Ramp
	Aucilla Boat Ramp (Mandalay)
	Econfina River Ramp
	Econfina River State Park Landing
	Hickory Mound Impoundment
	Spring Creek Landing
Central	Keaton Beach Boat Ramp
	Dark Island Park & Boat Ramp
	Hagen's Cove
South	Dallus Creek Landing
	Steinhatchee Falls
	Jena Boat Ramp (Dixie County)

Appendix B: Resident Survey and Cover Letter

UF UNIVERSITY of FLORIDA

Florida Sea Grant College Program
A statewide university program for
Coastal Research, Education & Extension
www.flseagrant.org

Building 803 McCarty Drive
P O Box 110400
Gainesville, FL 32611-0400 U.S.A.

Dear Taylor County Resident,

The University of Florida Sea Grant College Program in partnership with the Taylor County Board of County Commissioners needs your help to determine the coastal and waterway access needs of Taylor County residents, and if and where improvements to waterway access infrastructure, such as boat ramps, should be made. To accomplish this, we need input from those of you who **do** and **do not** use coastal locations and waterways for recreational, commercial, or other purposes.

You are one of a small number of residents selected to receive this survey, so your response is very important to the County's efforts to assess current demand for a variety of coastal and waterway-related activities pursued by year-round, seasonal, or part-time residents of Taylor County, and to identify the locations that support this demand.

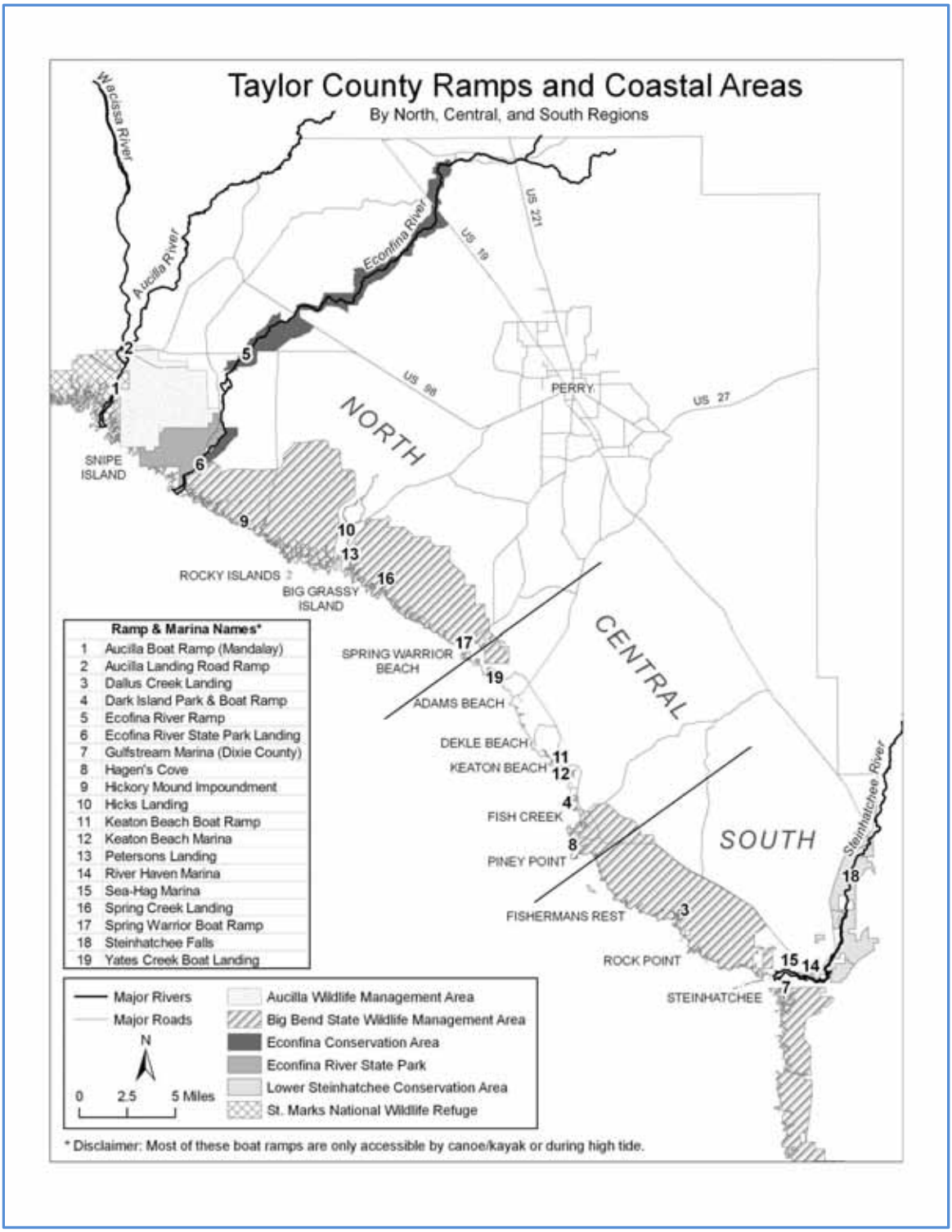
Completing this survey is voluntary – you do not have to answer any questions that you do not want to. There are no "correct" or "incorrect" answers so please express your true feelings. Please be confident that your answers will not be connected with you and will remain strictly confidential. The only requirement is that survey respondents be at least 18 years old. Should you have questions about your rights as a participant in this study please contact the University of Florida Institutional Review Board at PO Box 112250, Gainesville, FL 32611, (352) 392-0433. You may also contact the project's Principal Investigator, Dr. Charles Sidman, at (352) 392-6233 or the Taylor County UF/IFAS Extension Director, Clay Olson, at (850) 838-3508 if you have questions about the survey. The survey number on the questionnaire is used only to track returns.

Your response to this survey will help ensure that your needs and concerns are addressed by Taylor County when planning for future access to coastal locations and waterways.

We thank you and appreciate your help and participation,

Charles Sidman

Charles Sidman, Ph.D.
Project Investigator
Florida Sea Grant College Program


Taylor County Ramps and Coastal Areas
By North, Central, and South Regions
Aucilla River
Econfina River
US 221
US 19
US 98
US 27
PERRY
NORTH
CENTRAL
SOUTH
SNIPE ISLAND
ROCKY ISLANDS
BIG GRASSY ISLAND
SPRING WARRIOR BEACH
ADAMS BEACH
DEKLE BEACH
KEATON BEACH
FISH CREEK
PINEY POINT
FISHERMANS REST
ROCK POINT
STEINHATCHEE
Steinhatchee River
Ramp & Marina Names*
1 Aucilla Boat Ramp (Mandalay)
2 Aucilla Landing Road Ramp
3 Dallus Creek Landing
4 Dark Island Park & Boat Ramp
5 Ecofina River Ramp
6 Ecofina River State Park Landing
7 Gulfstream Marina (Dixie County)
8 Hagen's Cove
9 Hickory Mound Impoundment
10 Hicks Landing
11 Keaton Beach Boat Ramp
12 Keaton Beach Marina
13 Petersons Landing
14 River Haven Marina
15 Sea-Hag Marina
16 Spring Creek Landing
17 Spring Warrior Boat Ramp
18 Steinhatchee Falls
19 Yates Creek Boat Landing
Major Rivers
Major Roads
N
0 2.5 5 Miles
Aucilla Wildlife Management Area
Big Bend State Wildlife Management Area
Econfina Conservation Area
Econfina River State Park
Lower Steinhatchee Conservation Area
St. Marks National Wildlife Refuge
* Disclaimer: Most of these boat ramps are only accessible by canoe/kayak or during high tide.

UF UNIVERSITY of FLORIDA **Coastal and Waterway Use Survey for Residents of Taylor County, Florida** Sea Grant

Question 1. Are you a year-round or seasonal/part-time resident of Taylor County? ☐ Year-round ☐ Seasonal/part-time

Question 2. How long have you lived in Taylor County? Years_____

Question 3. What activities do you typically engage in while using Taylor County coastal locations or waterways/rivers? *(Check all that apply) (Note: a coastal location is an area that is on or near the ocean – please see map for place names)*

☐ **I do not access or use Taylor County coastal locations or waterways/rivers.**

☐ Airboating	☐ Hiking / Walking / Jogging	☐ Sailing
☐ Camping	☐ Hunting	☐ Scalloping
☐ Canoeing / Kayaking	☐ Jet Skiing	☐ Scuba diving / Snorkeling
☐ Crabbing	☐ Nature viewing / Sightseeing	☐ Skiing / Water sports
☐ Fishing from shore	☐ Picnicking	☐ Swimming
☐ Fishing from a boat	☐ Pleasure boating / Cruising	

☐ Other (*please specify*):_____

Question 4. Do you own: A power boat? ☐ Yes ☐ No A sailboat? ☐ Yes ☐ No A canoe or kayak? ☐ Yes ☐ No

Question 5. Are there any coastal locations, ramps, or waterways that you would like to use, but try to avoid? ☐ Yes ☐ No

If yes, please list the top three places you would like to use, but try to avoid. (*Please see map for some coastal locations, ramps, and waterway names*)

First choice:_____

Second choice:_____

Third choice:_____

Question 6. Do any of the following factors contribute to your avoidance of the Taylor County coastal locations, ramps, or waterways that you listed in Question 5 above? (*Please check all that apply*)

Factors for avoiding ramps	First Choice (Question 5)	Second Choice (Question 5)	Third Choice (Question 5)
Too far to drive / too remote	☐	☐	☐
Ramp lanes too narrow	☐	☐	☐
Damaged ramp pavement	☐	☐	☐
Water depth too shallow	☐	☐	☐
Inadequate parking	☐	☐	☐
Poor or no toilets	☐	☐	☐
Crowds	☐	☐	☐
Inadequate docks / no docks	☐	☐	☐
Poor access road	☐	☐	☐
No public picnic / recreation facilities	☐	☐	☐
Too much trash / pollution	☐	☐	☐
Lacks safety / dangerous location	☐	☐	☐

Turn page for remaining questions ⇨

Question 7. Do you favor more boat ramps being built in Taylor County? □ Yes □ No □ No Opinion

If yes, what region in the County would benefit most from a new ramp? □ North □ Central □ South
(Please select only one region. Note: See the map for county regions)

Question 8. Do you favor improvements to existing boat ramps in Taylor County? □ Yes □ No □ No Opinion

If yes, what region in the County would benefit most from ramp improvements? □ North □ Central □ South
(Please select only one region. Note: See the map for county regions)

Question 9. Please indicate in the space below why you would or would not favor more public boat ramps or ramp improvements in the County?

_____

_____

_____

IF YOU USE TAYLOR COUNTY COASTAL LOCATIONS OR WATERWAYS, PLEASE ANSWER QUESTIONS 10 THROUGH 12. IF NOT, PLEASE SKIP TO QUESTION 13.

Question 10. What are your favorite coastal locations, ramps or waterways to use or access in Taylor County? Please list your top three choices. (*Please see the map for coastal locations, waterways, and ramp names*)

First choice:_____

Second choice:_____

Third choice:_____

Question 11. During what month(s) do you most often use Taylor County coasts or waterways? (*Check all that apply*)

□ Jan □ Feb □ March □ April □ May □ June □ July □ Aug □ Sept □ Oct □ Nov □ Dec

Question 12. About how many days per year do you use coastal locations or waterways in Taylor County? _____ days

THE FOLLOWING QUESTIONS ABOUT YOU ARE NEEDED TO EVALUATE IF RETURNED SURVEYS ACCURATELY REPRESENT TAYLOR COUNTY RESIDENTS.

Question 13. What is the ZIP code of your primary residence? _____

Question 14. What is the highest degree or level of school that you have completed?

□ Less than high school □ High school graduate / GED □ Vocational / trades school □ College graduate

Question 15. What category best describes your employment status?

□ Retired □ Employed (part time) □ Employed (full time) □ Student □ Unemployed

Question 16. Please indicate your race. □ Black □ White □ Hispanic □ American Indian □ Asian □ Other

---

Important: Please return the completed questionnaire in the envelope provided even if you do not access Taylor County coasts or waterways. No postage is needed.

Thank you for helping your county plan for public access to its coasts and waterways! *Survey#*_____

Appendix C: Boater Survey and Cover Letter

UF UNIVERSITY of FLORIDA

Florida Sea Grant College Program
A statewide university program for
Coastal Research, Education & Extension
www.FLseagrant.org

Building 803 McCarty Drive
P O Box 110400
Gainesville, FL 32611-0400 U.S.A.

Dear Boat Owner,

The University of Florida Sea Grant College Program in partnership with the Taylor County Board of County Commissioners needs your help to determine public access needs for Taylor County waterways. ***You are one of a small number of residents and visiting boaters selected to receive this survey***, so your response is very important to help the County: (1) determine the activities and economic contribution of resident and visiting boaters that use Taylor County's coasts and waterways, (2) relate those activities and values to existing public access facilities, and (3) develop strategies on how access to coasts and waterways can be improved to better accommodate the needs of the boating public.

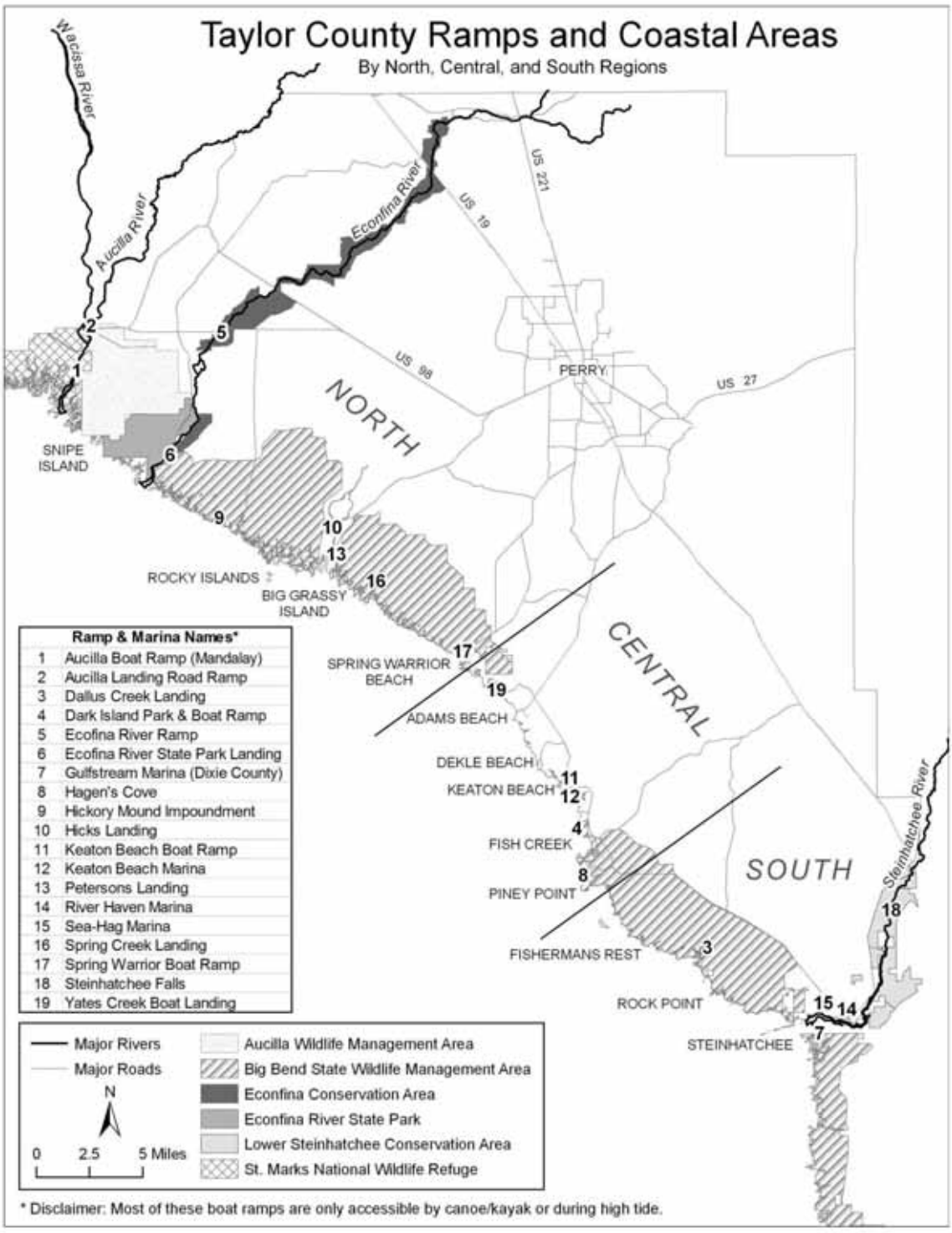
Completing this survey is voluntary – you do not have to answer any questions that you do not want to. There are no "correct" or "incorrect" answers, so please express your true feelings. Please be confident that your answers will not be connected with you and will remain strictly confidential. The only requirement is that survey respondents be at least 18 years old. Should you have questions about your rights as a survey participant, contact the University of Florida Institutional Review Board at PO Box 112250, Gainesville, FL 32611, (352) 392-0433. You may also contact the project's Principal Investigator, Dr. Charles Sidman, at (352) 392-6233 or the Taylor County UF/IFAS Extension Director, Clay Olson, at (850) 838-3508 if you have questions about the survey. The survey number on the questionnaire is used only to track returns.

Your response to this survey will ensure that the needs and concerns of resident and visiting boaters are addressed by Taylor County when planning for future access to coastal locations and waterways.

We thank you and appreciate your help and participation,

Charles Sidman

Charles Sidman, Ph.D.
Project Investigator
Florida Sea Grant College Program


Taylor County Ramps and Coastal Areas
By North, Central, and South Regions
Aucilla River
Econfina River
US 19
US 221
US 98
US 27
PERRY
NORTH
CENTRAL
SOUTH
SNIPE ISLAND
ROCKY ISLANDS
BIG GRASSY ISLAND
SPRING WARRIOR BEACH
ADAMS BEACH
DEKLE BEACH
KEATON BEACH
FISH CREEK
PINEY POINT
FISHERMANS REST
ROCK POINT
STEINHATCHEE
Steinhatchee River
Ramp & Marina Names*
1 Aucilla Boat Ramp (Mandalay)
2 Aucilla Landing Road Ramp
3 Dallus Creek Landing
4 Dark Island Park & Boat Ramp
5 Ecofina River Ramp
6 Ecofina River State Park Landing
7 Gulfstream Marina (Dixie County)
8 Hagen's Cove
9 Hickory Mound Impoundment
10 Hicks Landing
11 Keaton Beach Boat Ramp
12 Keaton Beach Marina
13 Petersons Landing
14 River Haven Marina
15 Sea-Hag Marina
16 Spring Creek Landing
17 Spring Warrior Boat Ramp
18 Steinhatchee Falls
19 Yates Creek Boat Landing
Major Rivers
Major Roads
N
0 2.5 5 Miles
Aucilla Wildlife Management Area
Big Bend State Wildlife Management Area
Econfina Conservation Area
Econfina River State Park
Lower Steinhatchee Conservation Area
St. Marks National Wildlife Refuge
* Disclaimer: Most of these boat ramps are only accessible by canoe/kayak or during high tide.

UF UNIVERSITY of FLORIDA

Taylor County Boater and Waterway Access Survey

Sea Grant

Question 1. Please check the box beside the type of boat that you normally use on Taylor County rivers and coastal waterways. (*Please select only **ONE** option*)

- ☐ Personal Watercraft / Jet Ski
- ☐ Kayak / Row / Canoe
- ☐ Sailboat
- ☐ Speed Boat
- ☐ Open Fisherman / Flats / Skiff
- ☐ Offshore Sport Fisherman
- ☐ Power Cruiser
- ☐ Deck Boat
- ☐ Pontoon Boat
- ☐ Airboat
- ☐ Other (*please specify*) _____

Question 2. Please estimate the length and draft of the vessel that you identified in Question 1. (*Draft is how far below the water surface your prop or hull extends*)

Length (in feet)_____ Draft (in feet/inches)_____

Question 3. What activities do you normally participate in when you use Taylor County rivers and coastal waterways? (*Please check **ALL** that apply*)

- ☐ Crabbing
- ☐ Fishing
- ☐ Nature sightseeing
- ☐ Other (*please specify*) _____
- ☐ Pleasure boating / Cruising
- ☐ Scalloping
- ☐ Scuba diving / Snorkeling
- ☐ Skiing / Water sports
- ☐ Swimming

Question 4. What type of launch facility do you normally use to access Taylor County coastal locations or waterways? (*Please check only **ONE** option*)

- ☐ Public boat ramp
- ☐ Private boat ramp
- ☐ Marina dry storage / lift
- ☐ Marina wet slip
- ☐ Residential dock
- ☐ Beach or roadside
- ☐ Boat lift

Question 5. During what month(s) do you most often use Taylor County rivers or coastal waterways? (*Please check all that apply*)

☐ Jan ☐ Feb ☐ March ☐ April ☐ May ☐ June ☐ July ☐ Aug ☐ Sept ☐ Oct ☐ Nov ☐ Dec

Question 6. About how many days per year do you use rivers or coastal waterways in Taylor County? _____days

Question 7. What are your favorite boat ramps to use to access coastal locations or waterways? Please list your top two choices or skip to Question 9 if you do not use boat ramps. (*Please see the map for some coastal locations, waterways, and ramp names*)

First Choice _____

Second Choice _____

Question 8. Please rate how important each of the following factors is to you in choosing the top two ramps that you identified in Question 7. (*Please check the box that best describes how important each factor listed is to you)*

Waterway Characteristics	**First Choice from Question 7**			**Second Choice from Question 7**		
	Important	**No Opinion**	**Not Important**	**Important**	**No Opinion**	**Not Important**
Deep-water access	□	□	□	□	□	□
Natural / undeveloped shoreline	□	□	□	□	□	□
Well-marked access channels	□	□	□	□	□	□
Calm / protected waters	□	□	□	□	□	□
Direct access to Gulf	□	□	□	□	□	□
Quality of Facilities	**Important**	**No Opinion**	**Not Important**	**Important**	**No Opinion**	**Not Important**
Restroom availability	□	□	□	□	□	□
No parking or launch fees	□	□	□	□	□	□
Paved parking lot	□	□	□	□	□	□
Utilities (water, lighting)	□	□	□	□	□	□
Nearby amenities (e.g., store, restaurant, hotel)	□	□	□	□	□	□
Near my home	□	□	□	□	□	□
Picnic / recreation area	□	□	□	□	□	□
Paved road for access	□	□	□	□	□	□
Trash cans	□	□	□	□	□	□
Activity Requirements	**Important**	**No Opinion**	**Not Important**	**Important**	**No Opinion**	**Not Important**
Close to my favorite boating spots	□	□	□	□	□	□
Availability of fishing supplies, bait, etc.	□	□	□	□	□	□
Fish cleaning stations	□	□	□	□	□	□
Solitude / remoteness	□	□	□	□	□	□
Boating-related Amenities	**Important**	**No Opinion**	**Not Important**	**Important**	**No Opinion**	**Not Important**
Short wait to launch	□	□	□	□	□	□
Fuel availability	□	□	□	□	□	□
Pump-out station	□	□	□	□	□	□
Easy to launch and retrieve boat	□	□	□	□	□	□
Boat dock / piers	□	□	□	□	□	□

Question 9. Are there any boat ramps in Taylor County that you would like to use, but try to avoid? □ Yes □ No

If you answered "Yes" to Question 9, please name the top two ramps you would like to use but try to avoid.
(Please see the map for additional ramp and place names)

(Ramp 1)_____ (Ramp 2)_____

If you answered "Yes" to Question 9, please check the appropriate boxes in the following table to indicate whether you agree, have no opinion, or disagree with each of the following reasons for avoiding ramps that you would like to use.

Reasons for Avoiding Ramp	Ramp 1 from Question 9			Ramp 2 from Question 9		
	Agree	No Opinion	Disagree	Agree	No Opinion	Disagree
Too far to drive / too remote	□	□	□	□	□	□
Ramp lanes too narrow	□	□	□	□	□	□
Damaged ramp pavement	□	□	□	□	□	□
Water depth too shallow	□	□	□	□	□	□
Inadequate parking	□	□	□	□	□	□
Poor or no toilets	□	□	□	□	□	□
Crowds	□	□	□	□	□	□
Inadequate docks / no docks	□	□	□	□	□	□
Poor access road	□	□	□	□	□	□
No public picnic / recreation facilities	□	□	□	□	□	□
Too much trash / pollution	□	□	□	□	□	□
Lacks safety / dangerous location	□	□	□	□	□	□

Question 10. Are there any other reasons why you try to avoid the ramps listed in Question 9? *(Please indicate the ramp name and the other reason(s) in the space below)*

_____

_____

Question 11. Do you favor more boat ramps being built in Taylor County? □ Yes □ No □ No Opinion

If yes, what region in the County would benefit most from a new ramp? □ North □ Central □ South
*(Please select only **ONE** region. Note: See the map for county regions)*

Question 12. Do you favor improvements to existing boat ramps in Taylor County? □ Yes □ No □ No Opinion

If yes, what region in the County would benefit most from ramp improvements? □ North □ Central □ South
*(Please select only **ONE** region. Note: See the map for county regions)*

Question 13. Please indicate in the space below why you would or would not favor more public boat ramps or ramp improvements in the County.

_____

_____

_____

3

Question 14. Are you a year-round resident, a seasonal/part-time resident, or a visitor to Taylor County?

□ Year-round □ Seasonal/part-time □ Visitor (*skip to question 16*)

Question 15. If you are a year-round or seasonal/part-time resident, how long have you lived in Taylor County?

Years_____ (*skip to question 17*)

Question 16. If you visited Taylor County on your last boating excursion, how many days did you stay in Taylor County?

□ One day □ Two days □ Three days □ Four days □ Five days □ One week □ Longer than one week

Question 17. Including yourself, please indicate the number of people who accompanied you on your last boating trip in Taylor County?

Number of people _____

Question 18. Please estimate your expenses for the following items for your last boating trip in Taylor County, and indicate whether or not these items were purchased in Taylor County.

Purchased Items on Last Boating Trip	Estimated Dollar Amount*	Purchased in Taylor County	
Boat fuel	$	□ Yes	□ No
Fishing supplies (bait, etc.)	$	□ Yes	□ No
Boat maintenance / repairs	$	□ Yes	□ No
Restaurant (meals)	$	□ Yes	□ No
Groceries	$	□ Yes	□ No
Hotel / Motel lodging	$	□ Yes	□ No
House / Condo rental	$	□ Yes	□ No
Ramp user fee	$	□ Yes	□ No
Marina user fee	$	□ Yes	□ No
Slip rental fee	$	□ Yes	□ No
Other purchases (specify): 1.	$	□ Yes	□ No
2.	$	□ Yes	□ No
3.	$	□ Yes	□ No
TOTAL estimated expenditures for last trip	$ TOTAL		

*Please leave the amount blank if you did not purchase the item on your last trip.

THE FOLLOWING QUESTIONS ABOUT YOU ARE NEEDED TO EVALUATE IF RETURNED SURVEYS ACCURATELY REPRESENT OTHER BOATERS IN THE REGION.

Question 19. What is the ZIP code of your primary residence? _____

Question 20. What is the highest degree or level of school that you have completed?

□ Less than high school □ High school graduate / GED □ Vocational / trades school □ College graduate

Question 21. What category best describes your employment status?

□ Retired □ Employed (part time) □ Employed (full time) □ Student □ Unemployed

Question 22. What was your total annual household income in 2009?

□ Less than $10,000
□ $10,000 to $14,999
□ $15,000 to $24,999
□ $25,000 to $34,999
□ $35,000 to $49,999
□ $50,000 to $74,999
□ $75,000 to $99,999
□ $100,000 to $149,999
□ $150,000 to $199,999
□ $200,000 or more

Question 23. Please indicate your race. □ Black □ White □ Hispanic □ American Indian □ Asian □ Other

---

Important: Please return the completed questionnaire in the envelope provided. No postage is needed.

Thank you for helping Taylor County plan for public access to its coasts and waterways!

Survey #_____

Appendix D. Method for Calculating Weekend, Weekday and Annual Trip Estimates

This the method used to calculate weekend day and weekday trip estimates.

Step 1. From Table 1, compute the sum of the number of visits for each survey day during the peak season (April – September). The average number (224.2) represents the estimate of the number of weekend daily trips associated with the peak season.

4/10	5/8	5/29	6/5	6/19	7/3	7/17	8/15	9/4	Average
280	276	203	107	165	243	289	Storms	231	224.2

(280+276+203+107+165+243+289+231) / 8 = 224.2

Step 2. Using Figure 2, determine the percentage of the responses associated with weekend days for each month in each of the peak, transitional, and off-peak periods.

Peak	Transitional	Off-Peak
144/206 = 69.9%	100/206 = 48.5%	48/206 = 23.2%
164/206 = 79.6%	106/206 = 51.5%	32/206 = 15.5%
164/206 = 79.6%		81/206 = 39.3%
185/206 = 89.8%		61/206 = 29.6%
164/206 = 79.6%		
143/206 = 69.4%		
Average = 77.9%	**Average = 50.0%**	**Average = 27.0%**

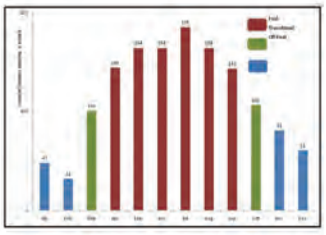


Figure 2 (see p. 9)

Step 3. Estimate the ratio of weekend day use among the three periods based on the average reported percent use determined in step 2.

Periods	Use Percentages	Use Ratio
Peak vs. Off-peak	Peak (77.9%) / Off-peak (27.0%)	**2.89**
Peak vs. Transitional	Peak = 77.9% / Transitional (50.0%)	**1.56**
Transitional vs. Off-peak	Transitional (50.0%) / Off-peak (27.0%)	**1.85**

Step 4. Divide average trips for peak period by transitional and off-peak use ratios identified in step 3 to obtain estimates of trips per weekend day for transitional and off-peak periods.

Periods	Use Percentages	Use Ratio
Peak	From Step 1	224.2
Transitional	224.2 / 1.56	143.7
Off-peak	224.2 / 2.89	77.8

Step 5. Estimate the number of weekday trips for peak, transitional, and off-peak periods. This is accomplished by dividing use ratio estimates calculated in step 4 by a constant (4.0). That figure represents the ratio of weekday versus weekend ramp use as determined by previous boater surveys in Florida (Sidman, et al., 2007; 2008).

Periods	Use Percentages	Estimated Weekday Trips
Peak	224.2 / 4.0	56.0
Transitional	143.7 / 4.0	35.9
Off-peak	77.8 / 4.0	19.4

Appendix E: Economic Impact Analysis

Conducted by Dr. Alan Hodges
Food and Resource Economics Department, University of Florida

Methodology

Economic impacts of public boat ramp-related recreational boating activity in Taylor County, Florida in 2010 were estimated based on expenditures reported by survey respondents together with an economic model of the county constructed using the *IMPLAN* (v.3) software for social accounting and impact analysis and related regional database (MIG, Inc.). This system enables construction of input-output models and social accounting matrices that represent the structure of a regional economy in terms of transactions among industry sectors, households, and governments. The *IMPLAN* model includes accounts for industrial commodity production, employment, labor and property income, household and institutional consumption, domestic and international trade (imports, exports), government taxes, transfer payments such as welfare and retirement, and capital investment. Data for the *IMPLAN* database for states and counties are derived from the National Income and Product Accounts for the United States (U.S. Department of Commerce, Bureau of Economic Analysis), *Quarterly Census of Employment and Wages* (U.S. Bureau of Labor Statistics) and other sources.

A regional economic model was developed for Taylor County, Florida using the *IMPLAN* software and county data package for 2009 (MIG, Inc.). All model parameters were kept at default settings, with econometrically estimated regional purchase coefficients representing the share of commodities purchased from local sources, and social/institutional accounts included for households, local, state, and federal governments, and capital investment.

Economic multipliers were calculated for each industry in the regional model to estimate the secondary effects of new final demand that generates further economic activity as it is re-spent in the local economy (Miller and Blair 2009). Indirect effects multipliers represent the economic activity generated in the supply chain through the purchase of intermediate inputs from vendor firms, while induced effects multipliers represent the impacts of spending by industry employee households and governments. The indirect and induced multipliers were applied only to foreign and domestic exports, or sales to customers visiting from other Florida counties or outside the state of Florida, which represent new money flowing into the regional economy. The total economic impacts are calculated as the sum of direct effects, plus indirect and induced effects. Therefore, while the estimates of this analysis are referred to as "economic impacts," these values may be better understood as "economic contributions" because they represent the ongoing economic activity of existing industries, rather than a net change in activity resulting from external influences (Watson et al., 2007).

Measures of economic impacts reported here include output or revenue, value added, employment (including full-time, part-time, and seasonal positions), labor income, property income, and indirect business taxes paid to local, state, and federal governments. Value added is a broad measure of net economic activity that is comparable to the Gross Domestic Product (GDP), and represents the sum of labor and other property income, indirect business taxes, and capital consumption (depreciation). Value added also is equivalent to the difference between industry revenues and intermediate inputs purchased from other sectors. Employment figures reported represent all fulltime, part-time and temporary or seasonal jobs, rather than fulltime equivalents employees. All monetary values were expressed in 2011 U.S. dollars using the Gross Domestic Product (GDP) Implicit Price Deflator, which accounts for the effects of price changes in the measurement of GDP (U.S. Dept. of Commerce). A glossary of economic impact analysis terminology is provided in Appendix A, and further discussion of economic impact analysis for Florida counties is discussed by Hodges and Rahmani (2010).

Expenditure Data

Data on trip-related purchases made in Taylor County by surveyed boaters was multiplied by estimates of the number of trips taken by resident and visiting boaters to calculate the annual contribution of boat ramp facilities to the local economy (Table 1). Average expenditures per trip reported by survey respondents totaled $212 for residents, $139 for daytrip visitors, and $378 for overnight visitors. Among the largest expense items per trip for all user groups was boat fuel. Boat maintenance was also a large expense for residents, while restaurants and hotel/other lodging were large expenses for overnight visitors.

Total annual expenditures for each user group were estimated by multiplying the average expense per trip in each expense category reported by survey respondents against the total number of user trips in 2010: 4,025 for residents, 12,474 for daytrip visitors, and 11,654 for overnight visitors. Total annual expenditures were $6.99 million, including $853,000 for residents, $1.73 million for daytrip visitors, and $4.40 million for overnight visitors (Table 1). Total annual expenditures by recreational boaters in Taylor County (2010) in each expense category were assigned to industry sectors in Implan as shown in Table 2.

Table 1. Expenditures reported by recreational boaters surveyed and estimated annual expenditures for boating trips associated with publically accessible boat ramps in Taylor County, Florida, 2010.

Expenditure Category	Average Expenditures Per Trip for Survey Respondents			Total Annual Expenditures for All User Trips			
	Residents	Daytrip visitors	Overnight visitors	Residents	Daytrip visitors	Overnight visitors	All Groups
Boat Fuel	$47.59	$38.41	$77.86	$191,550	$479,126	$907,380	$1,578,056
Fishing Supplies	$33.15	$20.23	$33.74	$133,429	$252,349	$393,206	$778,984
Boat Maintenance	$50.30	$26.19	$16.14	$202,458	$326,694	$188,096	$717,248
Restaurant	$11.85	$18.33	$70.02	$47,696	$228,648	$816,013	$1,092,357
Groceries	$39.44	$19.51	$41.89	$158,476	$243,368	$488,186	$890,030
Hotel	$4.78	$0.00	$60.74	$19,240	$0	$707,864	$727,104
House/Condo Rental	$0.00	$0.00	$50.08	$0	$0	$583,632	$583,632
Ramp Fee	$4.26	$3.51	$6.88	$17,147	$43,784	$80,180	$141,111
Marina Fee	$4.63	$6.13	$4.62	$18,836	$76,466	$53,841	$149,143
Slip Fee	$3.70	$0.93	$1.64	$14,893	$11,601	$19,113	$45,607
Other 1: Vehicle Fuel	$0.00	$2.77	$3.82	$0	$34,553	$44,518	$79,071
Other 2: Misc. Items	$12.31	$2.88	$10.09	$49,548	$35,925	$117,589	$203,062
Total	$212.02	$138.89	$377.52	$853,273	$1,732,514	$4,399,618	$6,985,405

Total annual expenditures reflect all trips made by each user group: Residents, 4,025; Daytrip visitors, 12,474; Overnight visitors, 11,654.

Table 2. Assignment to *Implan* industry sectors of total annual expenditures by recreational boaters in Taylor County, Florida, 2010.

Expense Item(s)	*Implan* Sector	Industry Description	Residents	Day Visitors	Overnight visitors	All Groups
Boat Fuel & Vehicle Fuel	326	Retail Stores - Gasoline stations	$191,550	$513,679	$951,898	$1,657,127
Fishing Supplies	328	Retail Stores - Sporting goods, hobby, book and music	$133,429	$252,349	$393,206	$778,984
Boat Maintenance	291	Boat building	$202,458	$326,694	$188,096	$717,248
Restaurant	413	Food services and drinking places	$47,696	$228,648	$816,013	$1,092,357
Groceries	324	Retail Stores - Food and beverage	$158,476	$243,368	$488,186	$890,030
Hotel	411	Hotels and motels, including casino hotels	$19,240	$0	$707,864	$727,104
House/Condo Rental	412	Other accommodations	$0	$0	$583,632	$583,632
Ramp, Marina & Slip Fees	334	Transport by water	$50,876	$131,851	$153,134	$335,861
Other 2: Misc. Items	330	Retail Stores – Miscellaneous	$49,548	$35,925	$117,589	$203,062
Total			$853,273	$1,732,514	$4,399,618	$6,985,405

Results

Total economic impacts of expenditures by recreational boaters who use boat ramps in Taylor County, Florida (2010) are summarized in Table 3 by user group and impact type. Total impacts for all users, including regional multiplier effects, were 158 fulltime and part-time jobs, $4.11 million in labor income (earnings), $6.44 million in value added, and $10.07 million in output or revenues, with these values expressed in 2011 dollars. The total value added impacts represented 1.62 percent of the Gross Regional Product of Taylor County in 2009 (inflation-adjusted), and the employment impacts represented 2.45 percent of total county employment in 2009 (8,391).

Total economic impacts were highest for overnight visitors, with employment impacts of 103 jobs, labor income impacts of $2.66 million, value added impacts of $4.16 million, and output impacts of $6.62 million. Total economic impacts for daytrip visitors were 40 jobs, $1.09 million in labor income, $1.70 million in value added, and $2.58 million in output. Direct economic impacts for county residents were 16 jobs, $366,000 in labor income, $575,000 in value added, and $865,000 in output. Impacts of spending by daytrip and overnight visitors included indirect and induced regional multiplier effects, since this represented new final demand in the county, while only direct effects applied to spending by county residents because this is not new final demand. Indirect impacts represent activity generated by industry supply chain purchases, and induced impacts represent re-spending of income by households and governments.

Table 3. Summary of total economic impacts of expenditures by recreational boaters in Taylor County, Florida, 2010.

User Group	Impact Type	Employment (jobs)	Labor Income	Value Added	Output
Residents	Direct Effect	16	$366,254	$575,710	$865,527
Daytrip visitors	Direct Effect	30	$743,571	$1,172,714	$1,758,761
	Indirect Effect	1	$39,269	$62,227	$112,107
	Induced Effect	8	$305,360	$467,018	$707,943
	Total Effect	40	$1,088,201	$1,701,959	$2,578,812
Overnight visitors	Direct Effect	79	$1,780,102	$2,807,154	$4,489,491
	Indirect Effect	4	$139,709	$227,452	$417,285
	Induced Effect	20	$737,446	$1,129,860	$1,716,040
	Total Effect	103	$2,657,256	$4,164,465	$6,622,816
All Users	Direct Effect	125	$2,889,926	$4,555,557	$7,113,779
	Indirect Effect	5	$178,978	$289,679	$529,393
	Induced Effect	29	$1,042,806	$1,596,187	$2,423,983
	Total Effect	158	$4,111,711	$6,442,133	$10,067,155

Employment impacts represent fulltime and part-time jobs. Values expressed in 2011 dollars.

Total economic impacts of recreational boating in Taylor County are shown in Table 4 by major industry groups, defined according to 2-digit level aggregations of the North American Industry Classification System (NAICS). The largest employment and value added impacts occurred in *Retail Trade* (87.5 jobs, $3.29 million), *Accommodation and Food Services* (42.5 jobs, $1.23 million) and *Government* (10.0 jobs, 550,779), followed by *Health and Social Services* (5.1 jobs, $205,257), *Manufacturing* (3.6 jobs, $213,466) and *Other Services* (2.2 jobs, $45,279).

Table 4. Total economic impacts by major industry group, for expenditures by recreational boaters in Taylor County, Florida, 2010.

Industry Group (NAICS)	Employment (jobs)	Labor Income	Total Value Added	Output
11. Agriculture, Forestry, Fishing & Hunting	0.2	$2,649	$5,896	$11,626
21. Mining	0.0	$511	$1,197	$5,116
22. Utilities	0.3	$27,729	$95,107	$130,708
23. Construction	1.7	$89,673	$104,876	$227,211
31-33. Manufacturing	3.6	$173,634	$213,466	$785,199
42. Wholesale Trade	0.2	$8,766	$15,152	$22,007
44-45. Retail Trade	87.5	$2,031,671	$3,288,556	$3,832,567
48-49. Transportation & Warehousing	1.0	$101,663	$190,230	$392,722
51. Information	0.5	$22,573	$47,861	$97,421
52. Finance & Insurance	0.8	$25,770	$52,492	$127,906
53. Real Estate & Rental	0.2	$3,798	$291,246	$399,203
54. Professional, Scientific & Technical Services	1.1	$45,483	$61,645	$102,341
55. Management of Companies	0.0	$3,354	$4,087	$7,521
56. Administrative & Waste Services	0.6	$12,111	$17,880	$38,030
61. Educational Services	0.2	$5,035	$5,974	$10,028
62. Health & Social Services	5.1	$189,761	$205,257	$427,531
71. Arts, Entertainment & Recreation	0.3	$7,756	$13,542	$21,592
72. Accommodation & Food Services	42.5	$826,510	$1,231,611	$2,672,518
81. Other Services	2.2	$40,727	$45,279	$88,643
92. Government & Non-NAICS	10.0	$492,537	$550,779	$667,265
Total	158.0	$4,111,711	$6,442,133	$10,067,155

Estimates include direct, indirect, induced regional multiplier effects for daytrip and overnight visitors, but direct effects only for county residents.
Employment impacts represent fulltime and part-time jobs. Values expressed in 2011 dollars.

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Glossary of Economic Impact Terms

Apparent consumption represents the consumption of any particular commodity in a region, and is calculated as the local output, plus imports minus exports.

Employee compensation is comprised of wages, salaries, commissions, and benefits such as health and life insurance, retirement and other forms of cash or non-cash compensation.

Employment is a measure of the number of jobs involved, including fulltime, part-time and seasonal positions. It is not a measure of fulltime equivalents (FTE).

Exports are sales of goods to customers outside the region in which they are produced, which represents a net inflow of money to the region. This also applies to sales of services to customers visiting from other regions.

Final Demand represents sales to final consumers, including households and governments, and exports from the region.

Gross Regional Product is a measure of total economic activity in a region, or total income generated by all goods and services. It represents the sum of total value added by all industries in that region, and is equivalent to Gross Domestic Product for the nation.

IMPLAN is a computer-based input-output modeling system that enables users to create regional economic models and multipliers for any region consisting of one or more counties or states in the U.S. The current version of the *IMPLAN* software, version 3, accounts for commodity production and consumption for 440 industry sectors, 10 household income levels, taxes to local/state and federal governments, capital investment, imports and exports, transfer payments, and business inventories. Regional datasets for individual counties or states are purchased separately.

Impact or total impact is the change in total regional economic activity (e.g. output or employment) resulting from a change in final demand, direct industry output, or direct employment, estimated based on regional economic multipliers.

Imports are purchases of goods and services originating outside the region of analysis.

Income is the money earned within the region from production and sales. Total income includes labor income such as wages, salaries, employee benefits and business proprietor income, plus other property income.

Indirect business taxes are taxes paid to governments by individuals or businesses for property, excise and sales taxes, but do not include income taxes.

Input-Output (I-O) model and Social Accounting Matrix (SAM) is a representation of the transactions between industry sectors within a region that captures what each sector purchases from every other sector in order to produce its output of goods or services. Using such a model, flows of economic activity associated with any change in spending may be traced backwards through the supply chain.

Intermediate sales are sales to other industrial sectors. The value of intermediate sales is netted-out of Total Value Added.

Local refers to good and services that are sourced from within the region, which may be defined as a county, multi-county cluster, or state. Non-local refers to economic activity originating outside the region.

Margins represent the portion of the purchaser price accruing to the retailer, wholesaler, and producer/manufacturer, in the supply chain. Typically, only the retail margins of many goods purchased by consumers accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

Multipliers capture the total effects, both direct and secondary, in a given region, generally as a ratio of the total change in economic activity in the region relative to the direct change. Multipliers are derived from an I-O model of the regional economy. Multipliers may be expressed as ratios of sales, income, or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors. A sector-specific multiplier gives the total changes to the economy associated with a unit change in output or employment in a given sector (i.e. the direct economic effect) being evaluated. Indirect effects multipliers 39 represent the changes in sales, income, or employment within the region in backward-linked industries supplying goods and services to businesses (e.g., increased sales in input supply firms resulting from more nursery industry sales). Induced effects multipliers represent the increased sales within the region from household spending of the income earned in the direct and supporting industries for housing, utilities, food, etc. An imputed multiplier is calculated as the ratio of the total impact divided by direct effect for any given measure (e.g. output, employment).

Other property income represents income received from investments, such as corporate dividends, royalties, property rentals, or interest on loans.

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