



Project Summary

October 2009

For many years, Florida has been among the fastest growing states in the nation, which means that its resources, infrastructure, and facilities are continually under pressure. Maintaining the quality of the state's natural resources and access to its waters depends on making informed management decisions using the best data and analyses available.

The "Statewide Boating Access Facilities Inventory and Economic Study including a Pilot Study for Lee County, Florida", which was commissioned by the Florida Fish and Wildlife Conservation Commission (FWC) in 2005, produced data and tools essential for such improved decision making. The project produced:

1. A comprehensive inventory of recreational boating access facilities located along the coastal and inland waters of the State of Florida. The inventory includes boat launch ramps; marinas; dockominiums; private clubs; dry storage facilities; and boating facilities at hotels/restaurants, commercial establishments and large residential developments (Table 1);
2. An estimate of boating capacity available at private waterfront residential properties;
3. Documentation of the economic significance of recreational boating in Florida based on trip and craft spending of registered boaters;
4. A method for incorporating economics into site suitability assessments for marinas and boat ramps. This complements and enhances the environmental, regulatory and land use/infrastructure screening criteria of FWC/DCA's boat facility siting plan method employed by counties and municipalities;
5. A process based on economic value, to guide the planning of new and rebuilt recreational boating infrastructure. The process provides estimates of economic value for new or rebuilt recreational boating infrastructure utilizing Random Utility Models and the likely distribution of boating access site use for any policy question that involves the addition, deletion, or improvement of access sites.
6. Case studies specific to Lee County utilizing Random Utility Models; and
7. Estimates of future boating demand.

Importantly, each of the products was developed using methods that can be replicated in future years in a cost-effective manner. This is essential as the value of the facilities inventory will diminish with time unless regularly updated and the economic models and decision tools need current data and information.



The inventory of boating access facilities began with a pilot study in Lee County and then extended statewide to include all boating facilities and ramps on salt, brackish and fresh waters. Data for each site were collected by a trained field team supplemented, as necessary, with data from reliable sources and aerial photographs. The data is stored and maintained by Florida's Fish and Wildlife Research Institute for purposes of informing public and private planning and decision making, and for making information available to the boating public, public officials, and researchers through an interactive website. The data were gathered to generate a baseline inventory of all recreational boating facilities in Florida, and to provide information for use in economic analyses.

In addition to the inventory, a method to estimate boat berthing capacity at private residential waterfront properties was developed and demonstrated.



For the first time, Florida boaters have a single source of information on the location, capacities and services of all public boating access facilities in the state. Similarly, agencies and

Funded by:



Conducted for:

Florida Fish and Wildlife
Conservation Commission
myfwc.com

Project Manager:

David Harding Ph.D.
Florida Fish and Wildlife
Conservation Commission
Fish and Wildlife Research Institute

departments at all levels of government, as well as the private sector, have a source of data and new tools to inform and improve decisions on investments and permitting.



Given the rapid rate of land use change along Florida’s coastal and inland waterways, maintaining and updating the database is essential to preserve the long-term value of the effort and investment made to date. A plan for updating and maintaining the data should be adopted and begin immediately. Changes to Florida’s boating facilities occur daily. The value of the existing inventory will deteriorate quickly without ongoing efforts to update and maintain the data.

Table 1: Types of boating access facilities and boat ramps in the database.

Boating Access Facility Type	In Database	
	n	%
Marina *	669	24.3
Dockminium *	56	2.0
Private Club *	129	4.7
Hotel / Restaurant *	352	12.8
Condominium	783	28.4
Other Residential	128	4.6
Boat Sales / Service	121	4.4
Commercial Business	33	1.2
Mobile Home Park / Campground	183	6.6
Docks only	26	0.9
Government only	10	0.4
Vacant	54	2.0
Unknown	211	7.7
Other	1	0.0
Total Boating Access Facilities	2756	
Boat Ramp Type	In Database	
	n	%
Government for Public Use *	1305	41.3
Private for Public Use *	314	9.9
Private for Private Use	719	22.7
Government for Government Use	50	1.6
Undetermined	773	24.5
Total Boat Ramps	3161	

* Facility and ramp types of particular interest.

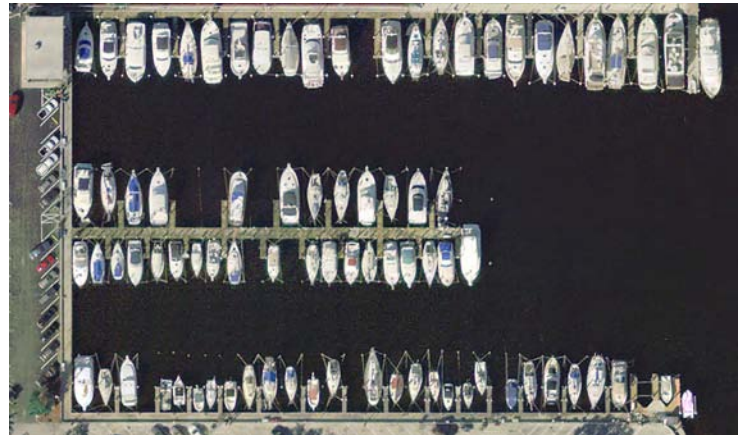
Note: As some ramps are located within boating access facilities, the total number of boating access locations in the database (ramps and facilities) cannot be calculated using this table.

The extensive information in the inventory includes very specific details of the infrastructure and amenities associated with each

boating facility. This type of information, needed for the inventory itself and for the economic models that were based on the amenities and infrastructure (the Random Utility Model in particular), was mainly gathered visually on site or by using remote sources.

Updating the data would best be accomplished on an on-going basis, organized by data type or purpose, and every effort should be made to track when changes are made to which fields, and who makes the changes. FWC should partner with county and municipal governments to provide periodic updates of the facilities they own and operate or the private facilities they permit. A system should be developed in which license data is fed directly into the database, or where state, county, or municipal staff are trained on data collection and equipped with hand held devices that would be used to update the database while out in the field.

The boating facilities website being developed by FWC provides another efficient means for updating some information. Operators of facilities included on the website will have an incentive to help maintain the accuracy of the data the public can view regarding their facilities. Facility operators could potentially provide updated information via this website, either through password-protected access to their records in the database or by providing information to the database manager.



The inventory, together with the sampling of boating access opportunities at waterfront residences, provides a reliable approximation of the current supply of recreational boating facilities in Florida. Additional research was conducted to provide the basis for estimating boating access demand in Florida for the next 20 years; for modeling the change in social benefit resulting in the addition and/or improvement of boating access facilities at the county or regional level; and for examining the economic significance of recreational boating in Florida.

As decision makers consider where to build new launch sites, repair existing launch sites, or add new amenities to existing sites, it is essential to understand how those decisions impact existing and potential users. Using a set of random utility models (RUMs) of consumer choice developed for this study, decision makers can now estimate the dollar change in social benefit resulting in the addition and/or improvement of boat ramps. Specifically these models were designed to estimate the economic benefits of the demand for access to boat launching sites, and are suitable for valuing the characteristics of such sites.

These models provide new tools for efficient planning and budgeting of future boating access opportunities and remediation of existing sites. The models allow policy makers to project the future use and economic value of potential ramps and/or site enhancements. Knowing the potential benefits of a new or enhanced site before construction begins will permit policy makers to better plan for future boating-related capital projects.



The model parameters can also be used to estimate the value of changes in the site characteristics at one or more sites. Additionally, the model parameters can be used to determine the county values for freshwater and marine access. These access values represent economic benefits to boaters using publicly accessible ramps that are above and beyond their boating expenditures.

The RUM models and a model of future launches per county were used to forecast public launches per county for the years 2010, 2015, 2020, and 2025. Projecting future demand for both salt and freshwater boating access permits one to estimate the likely capital investments that would be needed to accommodate future usage. In order to maintain freshwater and marine boating access at 2006 levels, capital investments of between \$68 and \$111 million will be needed over the next 16 years.



The RUM model has applications beyond identifying preferences in launch sites, water destinations, and per trip value. The model can also be used in real-world situations to help determine whether or not to build a new site, make improvements to an existing site, close an existing site, or take other actions with regard to launch facilities, as is demonstrated in three case studies in Lee County. While each county will likely have its own criteria for how to site a

new facility, the Lee County case study shows how the model can be used, in conjunction with siting guidelines, to help weigh the costs and benefits of an action at a single launch site, as well as how it can be used to compare the costs and benefits of different actions at several launch sites. In the case of public access site closures, the model can be helpful in determining the economic value lost because of the closure.

In addition to knowing the supply of and demand for recreational boating, and the impact of making site specific decisions to add, eliminate, or augment an access facility, this study also examined the overall economic significance of recreational boating in Florida. More specifically, the purpose of this economic analysis was to identify spending and the related direct and indirect sales, employment and wages/salaries, effects (within regions and the state as a whole) stemming from recreational boating activity among Florida's registered boaters.

The study also included regional trip numbers and economic impacts, and found that most boating activity and spending takes place within a boater's county and region of residence. Determining economic impacts at the county or facility level were demonstrated through an examination of two hypothetical facilities in Lee County. The analyses yielded the economic impact of these two facilities to the various sectors of the economy. As a result, a model was created for other counties to use to determine their boating-related economic impacts at both the county and facility level.



Three web-based models were also developed, which allow users to estimate the economic effects of:

- Changes in boat registrations;
- The loss, reduction or expansion of launch ramps; and
- Changes in marina supply (including conversions to non-marina uses; and increases or decreases in capacity).

The models were designed specifically to allow users to simulate spending, income, employment and value added effects of policy elements and management regimes, and for evaluating alternative investments in boating facilities. For example, a user can simulate the effects of closing an existing marina or alternatively building a new marina. The models can also be used to assess the effects of an investment in a launch site which expands its launch capacity. The economic impact assessment information produced by the models can, in combination with demand projections, needs analysis and environmental impact assessments, improve decisions relating to investments in boating facilities. The models are user friendly and were developed so that they do not require sophisticated knowledge of economic impact assessment.



Observations and Recommendations

1. Maintenance of the data from this study is a critical component of the future usefulness of this study for the citizens of Florida, stakeholders and agency decision makers.
2. The key component of this study was the inventory of recreational boating access facilities. This component was critical to the development of all the economic data that was an outcome of this effort. FWC should consider developing a process where state and local governments can provide updates to the inventory database through a web-based format.
3. The estimates of the economic significance of recreational boating and the boater survey should be conducted every four years with economic data available for review in year five.
4. The Random Utility Models used to estimate the demand for access to boating sites and economic values should be conducted every five years with data available for review in year six.
5. Estimates of future demand should be conducted in conjunction with the Random Utility Model.
6. The IMPLAN multipliers associated with the on-line economic impact models should be updated on a yearly basis.
7. Participation in recreational boating is projected to change over the next 16 years and this will require a change in the allocation of boating access investments;
8. The public value and economic significance of recreational boating is substantial and widespread, which makes it essential that decisions related to future investments in public boat access are analytical and based, at least in part, on economic information;
9. The results of survey of county and city boating access site and many conversations with boating agencies and industry officials clearly indicate that Florida needs to implement a more comprehensive system for collecting, integrating and analyzing data on boating access that should be linked to the grant process and to the access of monies from boating registration fees. Requiring that counties and cities report various information on an annual basis would be the most cost-effective way to gather information related to boating access capital needs.
10. FWC should consider developing and demonstrating cost-effective methods, which government agencies can utilize,

to produce reliable and valid estimates of launch site utilization. These methods might include: sampling schemes, measures and counting methods (e.g., aerial photos, car counts, observing time to launch); approaches for expanding the results for sampling periods; and demonstrations and associated training materials for county and local units of government.

11. FWC should consider requiring better estimates of the utilization of existing launch sites as part of grant applications for new or expanded launch sites. As part of its overall educational/outreach effort to enhance access planning and decision-making, FWC should include training on coming up with valid and reliable utilization estimates.
12. FWC should consider developing a web-based boating access information system where counties, local units of government, FWC units and other state agencies can: update information on the public access sites that they manage; report annual spending on boating access capital improvements; provide information about maintenance and operations budgets; and identify and verify capital improvement/maintenance priorities.
13. FWC should consider undertaking an outreach and educational effort to make members of the boating industry and appropriate state, county, and municipal personnel aware of the new tools that have been developed as part of this project and provide training in when and how they should be employed.



This project was conducted by a team of researchers led by the Urban Harbors Institute of the University of Massachusetts Boston, and included the Recreational Marine Research Center at Michigan State University, Bordner Research, Inc., Resource Economics Research, LLC, Environmental Economics, Inc., the Catanese Center for Urban and Environmental Solutions at Florida Atlantic University, and the Planning and Zoning Center of the Land Policy Institute at Michigan State University.