WaterWorks

Newsletter of the Fisheries and Aquatic Sciences Program March 2011

Catching Up…

Much has happened since the last edition of the WaterWorks newsletter was published in October 2007. The most significant and far reaching event was the July 1, 2008 merger of the Department of Fisheries and Aquatic Sciences with the School of Forest Resources and Conservation (SFRC), which is part of the University of Florida's Institute of Food and Agricultural Sciences. With the merger we became the ***Fisheries and Aquatic Sciences Program***, one of three broad programmatic areas within the SFRC (http://www.sfrc.ufl.edu/index.html).

Since 1937, the SFRC has been developing new knowledge and educating citizens in the programmatic area of ***Forest Resources and Conservation***. The addition of ***Geomatics*** in 2004 strengthened SFRC by adding modern geospatial sciences, such as surveying, mapping, remote sensing, satellite imagery, GIS, and GPS. When we brought ***Fisheries and Aquatic Sciences*** to SFRC, our emphasis on sustainable fisheries, aquaculture, and aquatic ecology and health greatly enhanced the ability of SFRC to develop well-educated scientists, educators, resource managers, conservationists, land owners, and citizens who can help to ensure the sustainable use of our natural resources.

The merger also strengthened our ability to accomplish our mission in the areas of undergraduate and graduate education, research, and extension. Specifically, we provide: (1) a rich personal educational experience for our students; (2) new discoveries and applications that enrich lives, communities, and natural resources; and (3) life-long learning opportunities for professionals, policy makers, landowners, youth, and the general public.

As a final note, I am excited to announce that we welcomed four new faculty members this past year: Drs. Rob Ahrens, Don Behringer, Kai Lorenzen, and Juliane Struve. Each one brings talents and skills that significantly enhance the capacity and quality of our program. Read about their areas of specialty and research interests later in the newsletter. Clearly, these are good times for the Fisheries and Aquatic Sciences Program!

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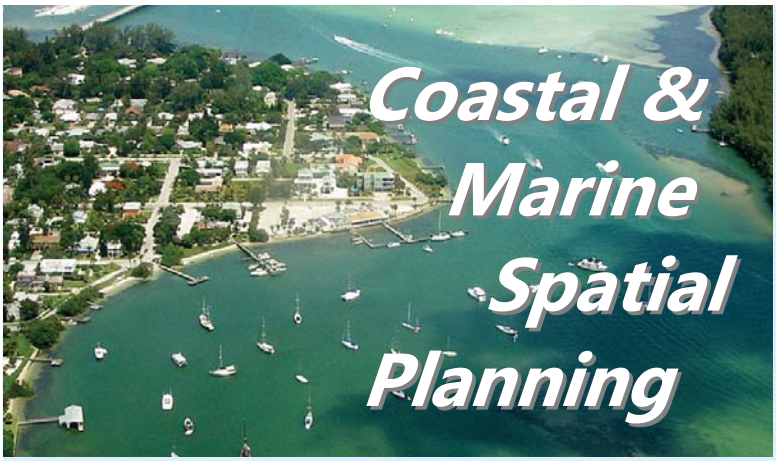
WaterWorks is a quarterly publication of the Fisheries and Aquatic Sciences Program in the School of Forest Resources and Conservation at the University of Florida. The purpose of the newsletter is to provide information to prospective students, alumni, stakeholders, and partners. To contribute an article or information for a future issue contact Tom Frazer (see his contact information above).



President Obama signed an Executive Order establishing a National Policy for the Stewardship of the Ocean, Coasts, and Great Lakes on July 19, 2010. That Executive Order adopted the Final Recommendations of the Interagency Ocean Policy Task Force and directs Federal agencies to take the appropriate steps to implement them.

The Executive Order strengthens ocean governance and coordination, establishes guiding principles for ocean management, and adopts a flexible framework for effective coastal and marine spatial planning to address conservation, economic activity, user conflicts, and sustainable use of the ocean, our coasts, and the Great Lakes.

Coastal and marine spatial planning can assist Florida's residents and visitors with balancing the many uses and activities associated with our coastal and ocean resources.

How will we benefit?

Too often we manage our coastal and marine resources in a piecemeal approach, considering one use, or sector, at a time. This is not an ideal approach if we want the best mix of uses in an area, with minimal conflicts, maximum efficiencies, and conservation of resources for future generations.

For example, a plan for offshore energy exploration may not effectively consider other uses that compete for the same space, such as fisheries. In a similar vein, popular boating routes may overlap with sensitive habitats, such as seagrass and coral reefs.

While coastal and marine spatial planning cannot replace all sector-by-sector management, it is meant to ensure that our planning reflects Florida's broader goals and objectives. As a result, conflicting, incompatible, and inappropriate uses will be identified and remedied.

A goal of marine spatial planning is enhanced collaboration and communication among citizens, businesses, and the entities that manage Florida's ocean and coastal resources. Indeed, the success of marine spatial planning depends on this happening. Greater cooperation will bolster the rigor and thoroughness of decision-making, and it will streamline permitting and regulatory processes.

These outcomes will provide greater predictability and more confidence for investment decisions.

Coastal and Marine Spatial Planning is…

Transparent. Stakeholders and the public participate throughout the process.

Integrated. Clear, broad-based goals and objectives that serve to align federal, state, regional, and local entities are agreed upon at the start.

Comprehensive. The process evaluates the suite of current and emerging uses of our coasts and oceans, and determines where they should occur to maximize citizen use and regulatory goals.

Ecosystem-based. The process considers the ecosystem in its entirety when making use decisions, thus safeguarding the resiliency and sustainability of the environment.

Place-based. Use allocation decisions are designed for and implemented at specific locations.

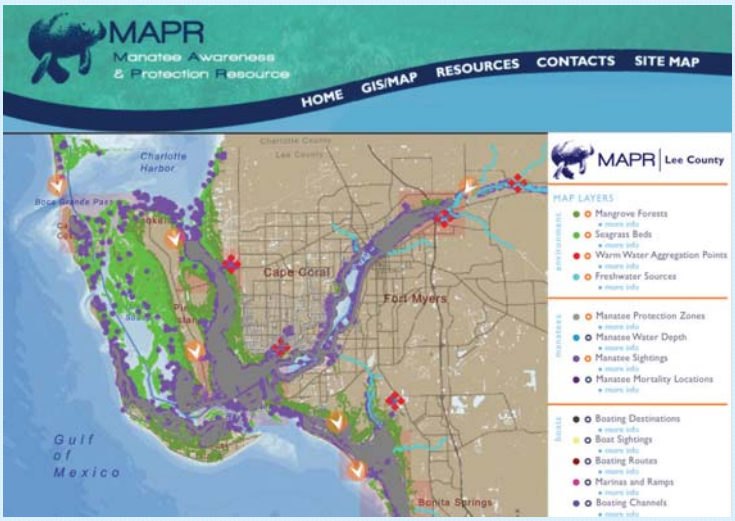
Adaptive. Circumstances and societal goals change over time, as do knowledge and technology. To meet this challenge, spatial planning adapts as necessary.

Balancing Use and Protection

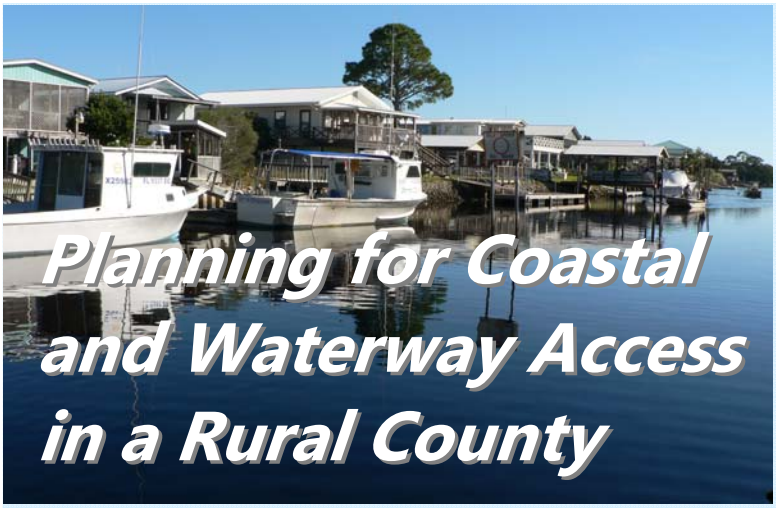
Marine spatial planning has proven to be an effective approach for preserving the recreational and ecological value of waterways. In Southwest Florida, the Regional Waterway Management System is a new approach to waterway planning and permitting based on mapped channel depths, boat populations, and the spatial extent of natural resources.

It was developed in partnership by Florida's Department of Environmental Protection, the four-county West Coast Inland Navigation District, and the University of Florida Sea Grant Program.

(Continued on page 7 - Spatial Planning)



An example of a coastal and marine spatial planning tool is the Manatee Awareness and Protection Resource, found online at flmapr.org. The unique mapping feature, pictured above, lets visitors see overlays of spatial data like manatee sightings and boating routes used to draw manatee protection zones. Source: Florida Sea Grant.



Planning for Coastal and Waterway Access in a Rural County

By Garin Davidson, a 2010 FAS graduate who earned a Master's degree in Fisheries and Aquatics Science.

Rural coastal counties can benefit from comprehensive waterway planning to prevent the loss of public coastal access before population growth and accompanying coastal development make the task too difficult.

Taylor County represents a microcosm of the waterway access issues that face coastal communities throughout Florida. Given its water-based traditions, the County (the government and public alike) wants to encourage sustainable economic growth through nature-based recreation and tourism, thus offering a unique opportunity to plan for waterway access in a rural community. However, as with many rural counties, Taylor County lacks the resources to plan for and provide access.

To assist Taylor County in initiating science-based planning efforts, a University of Florida (UF) research team completed a project to assess the demand for coastal access within the County, and to help plan for recreational access to the County's coastal resources. The UF team designed and implemented a public input process to collect information — from the perspective of Taylor County residents, visitors, and boaters — to support public coastal and waterway access planning efforts.

Representing a subset of the larger UF study, my Master's research included the development and implementation of a survey-based public input process specifically focusing on public waterway access planning for Taylor County residents. The survey identified the water-based recreational activities of County residents (property owners), the primary locations they visited and avoided, and reasons why the locations were avoided.

The majority of survey respondents engaged in water-based activities in the County (86.0%), with the primary activities being *Fishing from a boat* (88.9%), *Scalloping* (73.7%), and *Pleasure boating/Cruising* (58.7%).

The percentage of waterway use and the types of activities engaged in demonstrate the importance of access to waterways and coastal areas in Taylor County.

I also analyzed the survey results to determine if respondents with certain demographic characteristics preferred specific waterway access locations or coastal regions of Taylor County.

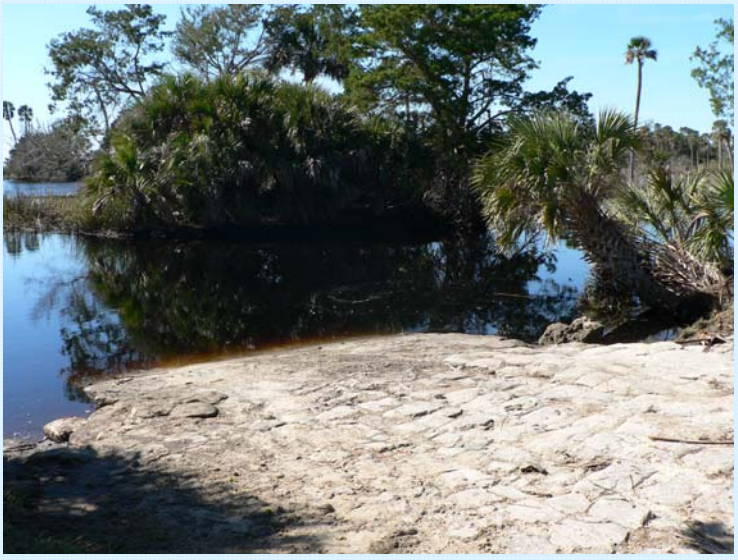
The majority of respondents accessed the County's coasts and waterways. Year-round residents preferred to use ramps in the North and Central coastal regions, while seasonal/part-time residents preferred ramps in the Central and South coastal regions. These results help to reinforce the importance of Keaton Beach (Central region) and Steinhatchee (South region) as centers for local tourism.

The residency of respondents also was compared to their preference for, or opposition to, new boat ramps and/or improvements to existing ramps. The majority of respondents favored both building more boat ramps and improving existing ones. Seasonal/part-time residents identified the South region as needing more ramps and ramp improvements. While year-round residents preferred new boat ramps in the Central and South regions, they identified the need for ramp improvements in all coastal regions.

For economic development purposes, and to enhance tourism, the County should focus its efforts to improve recreational access in the South coastal region. In contrast, addressing the needs of year-round County residents should be focused in the North and Central coastal regions.

After assessing the current use of waterway access locations, I estimated how an increase in Taylor County's population would affect future coastal waterway access demands. The results showed that many current waterway users avoid existing access locations due to crowds and inadequate parking. Thus, I determined that additional residents and waterway users from elsewhere will place a substantial burden on existing access facilities during peak boating periods, since they are already near capacity and in need of repairs and/or additional amenities.

(Continued on page 7 - Access in a Rural County)



Primitive ramp at Petersons Landing in Taylor County, FL.
Photo top left: Coastal development along the Keaton Beach Canal in Taylor County, FL.

Notes & News

Dr. Roger W. Bachmann *received the 2010 'Secchi Disk Award' at the Annual Meeting of the North American Lake Management Society in Oklahoma City, November 2010. This annual award, the highest given by the Society, is for that member who has given Outstanding Service to NALMS.*

Andrew Barbour *received a 3-year National Science Foundation Graduate Research Fellowship for his PhD work on juvenile common snook in mangrove creeks of Charlotte Harbor. He also published a Note in the February 2010 issue of Marine Ecology Progress Series on invasive lionfish in Bahamian mangrove creeks with fellow master's students* ***Meredith Montgomery*** *and* ***Alecia Adamson***.

Janice Kerns *(PhD student: Mike Allen advisor) and* ***Carla Garreau*** *(MS student: Ruth Francis-Floyd advisor) were awarded 2011 Roger Rottmann Memorial Scholarships by the Florida Chapter of the American Fisheries Society at the January meeting of the Southern Division in Tampa.*

Dr. Karl Havens *became an Associate Editor for the international journal Hydrobiologia.*

Loren Mathews*, a PhD candidate advised by Ed Phlips, was the recipient of the 2010 Kappa Kappa Gamma Foundation $3,000 Graduate Scholarship Recognition based on her outstanding academic achievements and commitment to the ideals of Kappa Kappa Gamma.*

Dr. Jeff Hill *became President of the Introduced Fish Section of the American Fisheries Society and an AFS Governing Board Member.*

Dana Bigham*, a PhD student advised by Dan Canfield, and* ***Geoffrey Smith****, an MS student advised by Deb Murie, were the Graduate Students of the Year in Fisheries and Aquatic Sciences.* ***Dana*** *also received the Best Student Poster Award from the North American Lake Management Society, and the Best Student Paper Award by the Florida Lake Management Society.*

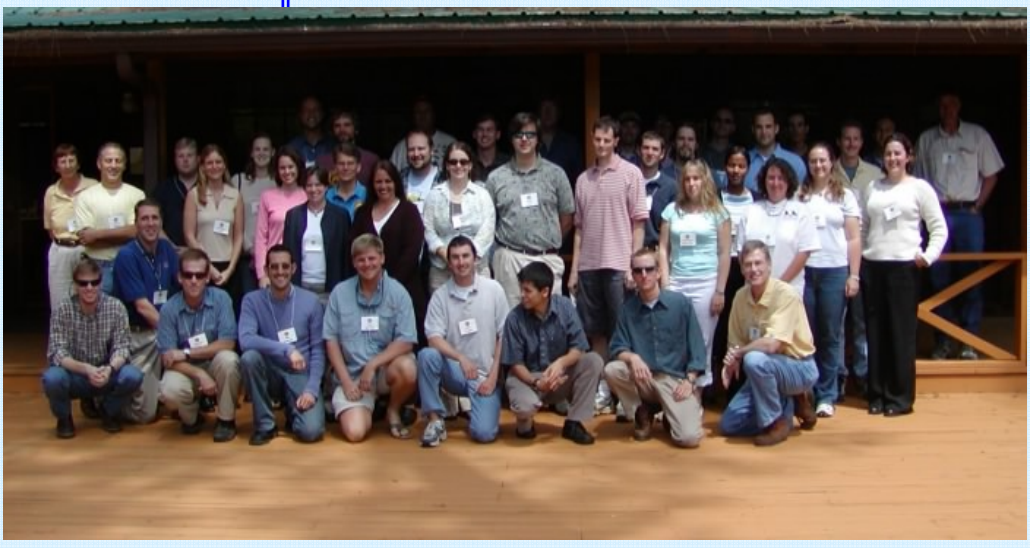
Upcoming Events

Manage the Pond & Mind the Creek Workshop. *This forest stewardship workshop focuses on managing ponds for recreational and/or commercial fishing, with guidance on protecting water and enhancing wildlife habitat along lakes, rivers, and other water features. Workshops will be held in Marion (April 8), Holmes (April 28), and Highlands (May 12) counties. For more information, or to register, see* ***Upcoming Events*** *at: http://www.sfrc.ufl.edu/extension/index.html, or contact Chuck Cichra (cecichra@ufl.edu).*

Training in Geographic Information Systems. *Faculty with the UF School of Forest Resources and Conservation and Florida Sea Grant will hold a 3-day intensive workshop on ArcGIS 10, a powerful tool for managing natural resources and guiding growth and development processes. The workshop will be held in Gainesville from May 2nd through May 4th. For more information or to register, go to: http://www.conference.ifas.ufl.edu/gisworkshop/.*

15th Annual Fishing Tournament. *Join us on Saturday, May 14th, at Cedar Cove in Cedar Key. Prizes will be awarded! The $15 per person entry fee includes a family fish fry (under 10 free). The event is co-hosted by the UF Fisheries and Aquatics Sciences Program and the Florida Fish and Wildlife Conservation Commission. For more information or registration forms, contact Mike Allen (msal@ufl.edu).*

Northeast Florida Boating and Waterways Workshop. *The first annual workshop will be held August 16th & 17th in Milton. For more information, contact Chris Verlinde (chrismv@ufl.edu).*



Faculty, staff, and graduate students attending a Graduate Student Symposium at Mace Lodge in Austin Cary Memorial Forest. Graduate students presented their research and/or proposed research projects over a two day period.

Fisheries and Aquatic Sciences Publications in 2010

Arthur, R., Lorenzen, K., Homekingkeo, P., Sidavong, K., Sengvilaikham, B., and Garaway, C. (2010). Assessing impacts of introduced aquaculture species on native fish communities: Nile tilapia and major carps in SE Asian freshwaters. *Aquaculture* 81-88.

Bachmann, R. W. (2010). From Okoboji to Okeechobee. *LakeLine* 30, 25-27.

Baker, P., Zimmanck, F., and Baker, S. (2010). Feeding rates of an introduced freshwater gastropod *Pomacea insularum* on native and nonindigenous aquatic plants in Florida. *Journal of Molluscan Studies* 138-143.

Baremore, I. E., Murie, D. J., and Carlson, J. K. (2010). Seasonal and size-related shifts in diet of the Atlantic angel shark *Squatina dumeril* in the northeastern Gulf of Mexico. *Aquatic Biology* 8, 125-136.

Behringer, D., and Butler IV, M. (2010). Disease avoidance influences shelter use and predation in Caribbean spiny lobster. *Behavioral Ecology and Sociobiology* 64, 747-755.

Behringer, D., Butler IV, M., and Shields, J. (2010). *A review of the lethal spiny lobster virus PaV1 - ten years after its discovery*, Cumana, Venezuela.

Bostock, J., McAndrew, B., Richards, R., Jauncey, K., Telfer, T., Lorenzen, K., Little, D., Ross, L., Handisyde, N., Gatward, I., and Corner, R. (2010). Aquaculture: global status and trends. *Philosophical Transactions of the Royal Society B-Biological Sciences* 2897-2912.

Bunch, A., Allen, M., and Gwinn, D. (2010). Spatial and temporal hypoxia dynamics in dense emergent macrophytes in a Florida Lake. *Wetlands* 429-435.

Butler IV, M., Mojica, A., Sosa-Cordero, E., Millet, M., Sanchez-Navarro, P., Maldonado, M., Posada, J., Rodriquez, B., Rivas, C., Oviedo, A., Arrone, M., Prada, M., Bach, N., Jimenez, N., Garcia-Rivas, M., Forman, K., Behringer, D., Matthews, T., Paris, C., and Cowen, R. (2010). *Patterns of spiny lobster (Panulirus argus) postlarval recruitment in the Caribbean: a CRTR project*, Cumana, Venezuela.

Canfield, D. E. J. (2010). Why NALMS? *LakeLine* 30, 20-22.

Canfield, D. E. J., and Bachmann, R. W. (2010). The Lakewatch story: engaging the citizen scientist in environmental research. *LakeLine* 29, 23-26.

Catalano, M., and Allen, M. (2010). A size- and age-structured model to estimate fish recruitment, growth, mortality, and gear selectivity. *Fisheries Research* 38-45.

Catalano, M., Allen, M., Schaus, M., Buck, D., and Beaver, J. (2010). Evaluating short-term effects of omnivorous fish removal on water quality and zooplankton at a subtropical lake. *Hydrobiologia* 159-169.

Cowan, J. H., Grimes, C. B., Patterson III, W. F., Walters, C. J., Jones, A. C., Lindberg, W. J., Sheehy, D. J., Pine III, W. E., Powers, J. E., Campbell, M. D., Lindeman, K. C., Diamond, S. L., Hilborn, R., Gibson, H. T., and Rose, K. A. (2010). Red snapper management in the Gulf of Mexico: science- or faith-based? *Reviews in Fish Biology and Fisheries.*

Crane, M., Grossa, M., Matthiessen, P., Ankleyc, G., Axford, S., Bjerregaarde, P., Brown, R., Chapman, P., Dorgeloh, M., Galay-Burgosi, M., Green, J., Hazlerigg, C., Janssen, J., Lorenzen, K., Parrottn, J., Rufli, H., Schäfers, C., Seki, M., Stolzenberg, H. C., van der Hoevens, N., Vethaak, D., Winfield, I., Zok, S., and Wheeler, J. (2010). Multi-criteria decision analysis of test endpoints for detecting endocrine active substances in fish full life cycle tests. *Integrated Environmental Assessment and Management* 6, 378-389.

Crosby, T. C., Petty, B. D., Hamlin, H. J., Guillette, L.J., Hill, J. E., Hartman, K. H., and Yanong, R. P. E. (2010a). Plasma cortisol, blood glucose, and marketability of Koi transported with metomidate hydrochloride. *North American Journal of Aquaculture* 72, 141-149.

Dix, N., Phlips, E., Baker, S., Badylak, S., Sturmer, L., and Hulen, K. (2010). *What do clams eat?* University of Florida, Institute of Food and Agricultural Sciences, Cooperative Extension Service.

Duarte, C. M., Martinez, R., Prairie, Y. T., Frazer, T. K., Hoyer, M. V., Notestein, S. K., and Canfield, D. E. (2010). Rapid accretion of dissolved organic carbon in the springs of Florida: the most organic-poor natural waters. *Biogeosciences* 7, 4051-4057.

Gwinn, D., and Allen, M. (2010). Exploring Population-Level Effects of Fishery Closures during spawning: an example using largemouth bass. *Transactions of the American Fisheries Society* 626-634.

Gwinn, D., Allen, M., and Rogers, M. (2010). Evaluation of procedures to reduce bias in fish growth parameter estimates resulting from size-selective sampling. *Fisheries Research* 75-79.

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Fisheries and Aquatic Sciences Publications (con't)

Havens, K., and Beaver, J. (2010a). Microbial food webs and lake management. *LakeLine* Summer 2010, 32-35.

Havens, K. E., and Beaver, J. R. (2010b). Composition, size and biomass of zooplankton in large productive Florida lakes. *Hydrobiologia.*

Heffernan, J. B., Cohen, M. J., Frazer, T. K., Thomas, R. G., Rayfield, T. J., Gulley, J., Martin, J. B., Delfino, J. J., and Graham, W. D. (2010). Hydrologic and biotic influences on nitrate removal in a subtropical spring-fed river. *Limnology and Oceanography* 55, 249-263.

Heffernan, J. B., Liebowitz, D. M., Frazer, T. K., Evans, J. M., and Cohen, M. J. (2010). Algal blooms and the nitrogen-enrichment hypothesis in Florida springs: evidence, alternatives, and adaptive management. *Ecological Applications* 20, 816-829.

Hervas, S., Lorenzen, K., Shane, M., and Drawbridge, M. (2010). Quantitative assessment of a white seabass (*Atractoscion nobilis*) stock enhancement program in California: Post-release dispersal, growth and survival. *Fisheries Research* 237-243.

Hunt, T., Allen, M., Douglas, J., and Gason, A. (2010). Evaluation of a sport fish stocking program in lakes of the Southern Murray-Darling Basin, Australia. *North American Journal of Fisheries Management* 805-811.

Langston, J. N., Schoefield, P. J., Hill, J. E., and Loftus, W. F. (2010). Salinity tolerance of the African jewelfish *Hemichromis letourneuxi*, a non-native cichlid in South Florida. *Copeia* 2010, 475-480.

Lindberg, W., and Schrope, M. (2010). *Understanding the ecology of artificial reefs: No simple answers*. Florida Sea Grant College Program.

Lindberg, W. J., Seaman, W., Walczak, J., Mille, K., Karazsia, J., White, M., Blair, S., Thanner, S., Sathe, M., Banks, K., Phipps, J., Vare, C., Stanaland, B., Fitzpatrick, K., and Barry, B. (2010). *Guidelines and management practices for artificial reef siting, usage construction and anchoring in Southeast Florida*. Florida Sea Grant College Program.

Lorenzen, K., Leber, K. M., and Blankenship, H. L. (2010). Responsible approach to marine stock enhancement: an update. *Reviews in Fisheries Science* 18, 189-210.

Lorenzen, K., Steneck, R., Warner, R., Parma, A., Coleman, F., and Leber, K. (2010). The spatial dimensions of fisheries: putting it all in place. *Bulletin of Marine Science* 169-177.

McGrath, A. L., and Lorenzen, K. (2010). Management history and climate as key factors driving natterjack toad population trends in Britain. *Animal Conservation* 13, 483-494.

Phlips, E., Badylak, S., Christman, M., and Lasi, M. (2010). Climatic trends and temporal patterns of phytoplankton composition, abundance and succession in the Indian River Lagoon, Florida, USA. *Estuaries and Coasts* 33, 498-513.

Pouder, D. B., Yanong, R. P. E., and Wolf, J. (2010). "Gonad gone awry: malignant gonadal tumors in a Featherfin Squeaker *Synodontis euptera*." Paper presented at the Eastern Fish Health Workshop, Shepherdstown, West Virginia, 2010.

Purtlebaugh, C., and Allen, M. (2010). Relative abundance, growth, and mortality of five age-0 estuarine fishes in relation to discharge of the Suwannee River, Florida. *Transactions of the American Fisheries Society* 1233-1246.

Riley, L., Baker, S., and Phlips, E. (2010). A new devise for crushing rigid biomass and geologic materials prior to compositional analyses. *Journal of Paleolimnology* 44, 737-739.

Riley, L., Baker, S., and Phlips, E. (2010). Self-adhesive wire markers for bivalve tag and recapture studies. *American Malacological Bulletin* 28, 183-184.

Riley, L., Dix, N., and Phlips, E. (2010). A new attachment devise for deployment of monitoring equipment in estuaries and other high energy environments. *Environmental Monitoring and Assessment* 65, 502-522.

Rogers, M., Allen, M., Brown, P., Hunt, T., Fulton, W., and Ingram, B. (2010). A simulation model to explore the relative value of stock enhancement versus harvest regulations for fishery sustainability. *Ecological Modelling* 919-926.

Swett, R. A. (2010). Coastal and marine spatial planning. Florida Sea Grant Extension Fact Sheet, SGEF 178, University of Florida, Gainesville.

Welcomme, R., Cowx, I., Coates, D., Bene, C., Funge-Smith, S., Halls, A., and Lorenzen, K. (2010). Inland capture fisheries. *Philosophical Transactions of the Royal Society B-Biological Sciences* 2881-2896.

(Continued on page 7)

Fisheries and Aquatic Sciences Publications (con't)

Wright, D. D., Frazer, T. K., and Reinfelder, J. R. (2010). The influence of river plume dynamics on trace metal accumulation in calanoid copepods. *Limnology and Oceanography* 55, 2487-2502.

Yanong, R. P. E. (2010). Peces de acuario. In *Atlas de Medicina de Animales Exoticos*, 2da ed. (Aguilar, R. F., Hernandez-Divers, S. M., Hernandez-Divers, S. J., and Perpinan, D., eds.), pp. 75-111. Editorial Inter-Medica SA, Buenos Aires, Argentina.

Yanong, R. P. E., and Pouder, D. B. (2010). "Vibriosis in my freshwater ornamental fish? But I said "Hold the Salt!"." Paper presented at the Eastern Fish Health Workshop, Shepherdstown, West Virginia, 2010.

Yanong, R. P. E., Pouder, D. B., and Falkinham, J. O. (2010). Association of mycobacteria in recirculating aquaculture systems and mycobacterial disease in fish. *Journal of Aquatic Animal Health* 22, 219-223.

Yanong, R. P. E. (2010). Viral Nervous Necrosis (Betanodavirus) Infections in fish. University of Florida EDIS Publication FA180. http://edis.ifas.ufl.edu/fa180.

Yanong, R. P. E. (2010). Lymphocystis disease in fish. University of Florida EDIS Publication FA181. http://edis.ifas.ufl.edu/fa181.

Yanong, R. P. E. and Waltzek, T. B. (2010). Megalocytivirus infections in fish, with emphasis on ornamental species. University of Florida EDIS Publication FA182. http://edis.ifas.ufl.edu/fa182.

Spatial Planning (Cont'd from Page 2)

The process provides a comprehensive overview of channel conditions, and the geographic distribution and severity of impediments to safe navigation and resource protection.

It also supports more efficient permitting and saves tax dollars. Compared with traditional approaches to waterway management, the science-based regional waterway management system is unbiased, transparent, ecologically sound and fiscally prudent.

Sources:

Interagency Ocean Policy Task Force. Interim framework for effective Coastal and Marine Spatial Planning. The White House Council on Environmental Quality, Washington, D.C., December 9, 2009.

Ehler, C. and Douvere, F. (2009). Marine spatial planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manuals and Guides No. 53, ICAM Dossier No. 6. Paris. UNESCO.

Swett, R. A. (2010). Coastal and Marine Spatial Planning. Florida Sea Grant Extension Fact Sheet, SGEF 178, University of Florida, Gainesville.

Swett, R. A., Listowski, C., Fry, D., Boutelle, S., and Fann, D. (2009). A regional waterway management system for balancing recreational boating and resource protection. *Environmental Management* 43(6): 962-971.

Bob Swett *is an associate professor in Fisheries and Aquatic Sciences and Coordinator of the Florida Sea Grant Boating and Waterway Planning Program. rswett@ufl.edu.*

Access in a Rural County (Cont'd from Page 3)

I also compared the top 15 favorite access locations and the top 15 avoided access locations to develop the priority list of waterway access planning recommendations for each coastal region. The recommendations are intended to help the County prioritize where improvements to existing public coastal access facilities should occur and where new facilities should be built based on current and future waterway access needs. The recommendations include respondent-generated suggestions of the type of infrastructure improvements the County should perform in particular regions or at particular locations to maximize the utility of coastal access points.

If the County could only implement two recommendations, I suggest the construction of additional boat ramps in the Central coastal region (Keaton Beach) and the South coastal region (Steinhatchee) with ample parking to accommodate the future recreational demand. This will help to offset the demand users place on other access locations. This reallocation of demand could eliminate the need for some of the other recommendations.

In the end, Taylor County will need to determine the best course of action based on its budgetary constraints, and its ability to obtain the permits required to implement the chosen recommendations.

For further information:

Sidman, C., Fik, T., Davidson, G., Swett, R., and Vose, F. (2011). Planning for Waterway Access in Taylor County, Florida: Residents and Users Speak. Florida Sea Grant Technical Paper TP 177. University of Florida, Gainesville.

Garin Davidson *is lab manager for the Florida Sea Grant Boating and Waterway Planning Program. gdavids@ufl.edu.*

New Fisheries and Aquatic Sciences Faculty

Dr. Rob Ahrens' primary research interest is in the development of quantitative assessment models aimed at improving the management of natural populations. His research to date has ranged from developing simple single species assessments to global ecosystem models. In addition, Dr. Ahrens maintains a keen interest in exploring exploitation by humans as a selective force and the population level consequences of such selection. He taught undergraduate and graduate level courses at the University of British Columbia since 2001 pertaining to quantitative stock assessment, applied ecology, as well as theoretical population dynamics and modeling.

Dr. Don Behringer's field of expertise is marine ecology with focus on: 1) marine diseases, and 2) the resilience and restoration of benthic marine communities (e.g., coral reefs and tropical hard-bottom areas) affected by human or natural disturbances. The two are not mutually exclusive in that the effects of disease are altered or exacerbated by impacts to the habitat structure that sessile marine communities provide. The emergence and impact of diseases in marine populations is increasingly recognized as an issue of major environmental concern and Don's research uses the novel virus *Panulirus argus* Virus 1 (PaV1), discovered infecting the Caribbean spiny lobster, as a model system. The other focus of his research targets hard-bottom communities in southeast Florida and the Florida Keys with the aim of determining human impact patterns and the potential for sustainable use or need for restoration. His research cuts across disciplines and forms a bridge between the School of Forest Resources and Conservation and the Emerging Pathogens Institute.

Dr. Kai Lorenzen is interested in addressing complex fisheries management problems through integrative-interdisciplinary science. His research integrates quantitative ecology with human dimensions and engages closely with management initiatives. A particular focus is on assessing and improving the use of hatchery and habitat enhancement and restoration measures in fisheries management. Kai also conducts basic research in fish population biology. Other interests include the conservation of aquatic resources in agricultural landscapes, design of aquaculture systems, domestication effects and interactions between cultured and wild fish, and the epidemiology of fish diseases.

Dr. Juliane Struve is interested in spatial fisheries ecology and spatial modeling tools. She has a background in aquatic ecology and environmental engineering and previous experience in water quality and hydraulic modeling. She is particularly interested in dispersion models and currently works on geographic movement of coastal fish. She is also working on a modeling tool for nutrient dynamics and bacterial contamination of lakes.