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18 July 2012

RE: Fisheries Impact of the Indian River County Oslo Boat Ramp Project.

Dear Tamy:

I would not have been involved in the Oslo Road boat ramp issue if my research and that of my colleagues had not indicated that it would create a negative impact on fish recruitment to regional fisheries. The natural resources surrounding the boat ramp has been documented as a juvenile nursery for red drum, common snook, tarpon and spotted seatrout. The wetlands surrounding the boat ramp are designated as conservation lands and the seagrass and estuarine habitats at the boat ramp are part of the Indian River Lagoon Aquatic Preserve. The seagrass meadows directly across from the boat ramp have now been designated as a no motor zone/poll zone, the only one south of Cape Canaveral.

References are listed as appended, but are numbered with corresponding numbers in parentheses (#) in the text of this letter.

#### **ESSENTIAL FISHERY HABITAT LIMITATION (EFH)**

There is now considerable documentation on the loss of essential fishery habitat, fishery nursery sites and spawning sites along the Florida east coast. This is significant in that the east coast estuary, the Indian River Lagoon system, is relatively narrow and limited in EFH acreage, particularly in the sub-tropical portion of the ecosystem south of 38° N. latitude, that portion of the Lagoon that supports valuable common snook and tarpon nurseries.

The indigenous geomorphology of the Indian River Lagoon limits wetland habitat acreage when compared to that of other Florida estuaries (1,2). The easternmost coastal ridge on the west shore of the lagoon only allows west shore mainland wetlands to exist north of Fort Pierce and south of Sebastian. Thus tropical/sub-tropical wetland flora and fauna that depend on mainland wetlands only have those of Indian River County and northern St. Lucie County to utilize as habitat.

**SPOTTED SEATROUT**--Our historical research on spotted seatrout demonstrate that this species spawns at specific sites within the Indian River Lagoon. Extensive surveys conducted on spawning activity 1990-1994 (18) indicate that the Intra-Coastal Waterway opposite Oslo Road is one of those principal spawning sites. The seagrass meadows around Oslo Road are a major fishing site for adult spotted seatrout and a critical nursery for juvenile spotted seatrout.

Now that seagrass meadows have nearly completely disappeared from the Indian River Lagoon from Cocoa south to Vero Beach in a catastrophic decline during the summer of 2011 to present, these seagrass meadows at Oslo take on a greater importance as they may be the last remaining seagrass meadows in Indian River County. I surveyed seagrass meadows that had been previously mapped and studied with a fishing guide last Sunday, July 15, 2012, and found no seagrass or algae from Grant south to the 17<sup>th</sup> St. bridge in Vero Beach. Cyanobacteria was found in places along with some strands of red algae, one small

clump of paddlegrass, *Halophyla* and a couple of small patches of shoal grass, *Halodule wrightii*. Fishermen and fishing guides are no longer taking clients north of Vero, but are fishing from Oslo south. This loss will certainly negatively influence spotted seatrout EFH recruitment and forage for snook and tarpon.

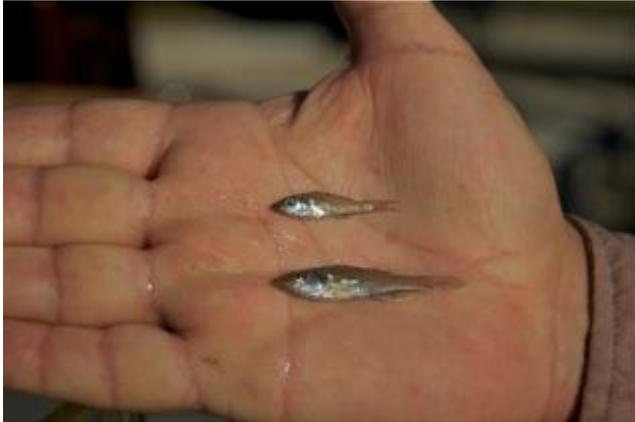
I must also place emphasis on the fact that not all seagrass meadows serve as spotted seatrout nursery sites, and not all mangrove wetlands serve as common snook and tarpon nursery sites. My research from 1978 to 1994 was based on monthly and biweekly quantitative fish samples taken over several annual cycles covering a broad geographic range (4-30). This work demonstrated that there are specific wetlands and particular locations within wetlands that consistently attract post larvae and juveniles of these fishery species. Once one of these sites is isolated and studied adequately with intensive repetitive sampling the location it typically demonstrates that up to 95% of the recruitment can come from a few hundred square meters of selected terrain and vegetation year after year.



Juvenile spotted seatrout and permit, Oslo Road shore capture in seagrass near boat ramp. Nov. 2009.

**COMMON SNOOK**-- One of the most prominent examples of repetitive recruitment to a specific wetland site were for the Round Island wetland across the IRL from Oslo Road where nearly all snook recruitment is from the south culvert, where 600 juveniles were taken in a single sample, where very few, often none, were taken in the north culvert to the same wetland (15, 22, 29, 30). Similar more conclusive data came from the Jack Island State Park wetland where one culvert out of over 20 placed in the impoundment dike served as the prime recruitment site for common snook with over 3,000 juvenile snook captured within a 24 hr. period at this one particular site, few if any at the other culvert sites sampled (23,

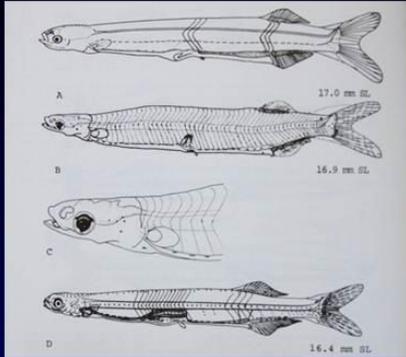
27, 28, 35). We have captured numerous juvenile snook in the Oslo Road wetlands and have photos of these fish (below) to demonstrate their occurrence in these wetlands.



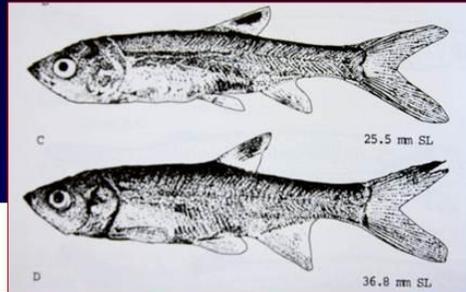
Post larval and juvenile common snook captured in Oslo Road wetlands in ditches south and adjacent to Oslo Road at the proposed parking lot, December 2010.



**TARPON**-- Ironically the first detailed description of larval tarpon was made by Dr. Robert Harrington, the ichthyologist at the Florida Medical Entomological Laboratory on Oslo Road, based on specimens captured in Oslo Road wetlands and the Round Island wetland across the Lagoon from Oslo Road (31, 32). Tarpon larvae recruit to mangrove wetland ponds and creeks spending their first few months in these critical habitats as they metamorphose to larger juveniles that then migrate out into the adjacent estuary (17). Tarpon larval wetland recruitment is limited to the southern half of the Indian River Lagoon and west shore habitat is limited to Indian River and northern St. Lucie County, portions of Martin County for the SE coast of Florida. That is significant, particularly for a fishery species that migrates from Florida to Virginia, thus supporting fisheries over the boundaries of five states. There are no tarpon nurseries in estuaries north of Cape Canaveral as those are warm-temperate estuarine systems. Thus Indian River County wetlands, documented Oslo Road wetlands are likely significant in supporting remaining east Florida tarpon fisheries.



**FIRST DETAILED DESCRIPTION  
LARVAL AND EARLY JUVENILE  
TARPON, HARRINGTON 1958  
INDIAN RIVER LAGOON**



Reprinted from COPEIA, 1958, No. 1, pp. 1-15, February 21  
Printed in U. S. A.

**Morphometry and Ecology of Small Tarpon, *Megalops atlantica*  
Valenciennes from Transitional Stage Through  
Onset of Scale Formation<sup>1</sup>**

ROBERT W. HARRINGTON, JR.



Larval ladyfish from Oslo Road shore line, Dec. 2009, resemble tarpon leptocephalus larvae that typically recruit in August and October, months not sampled by us at this location. If sampled it would be highly likely that tarpon leptocephalus like this would be captured.

**RED DRUM**--Red drum also limit post larval and juvenile recruitment to western shore sites with some freshwater sources, like the Oslo Road site. We have captured hundreds of juvenile red drum at the Oslo Road site and have photos of these fish to demonstrate their occurrence in these wetlands.



Post larval red drum, Oslo Road shore, Dec. 2009.

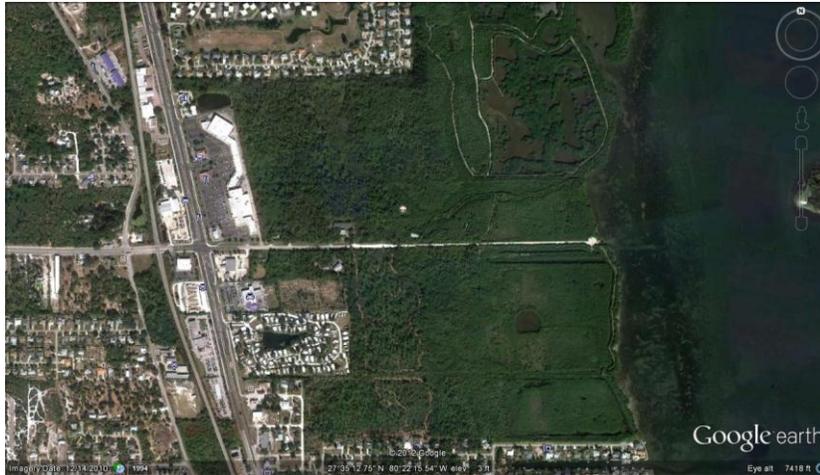
#### **LIKELY IMPACTS OF PROPOSED OSLO ROAD BOAT RAMP IMPROVEMENTS:**

Road Paving and Parking Lot Construction - Paving Oslo Road: This work will increase water velocity and likely volume, runoff from the road into adjacent wetlands and increase vehicle traffic on the road to the estuary. The intention of the development is to provide additional access for more and larger road and water vehicles.

My observations of the past 40 years in using this boat ramp is that present use is primarily limited to small vehicles, small shallow draft boats, canoes and kayaks. Present public use is by naturalists, public seeking natural wildlife settings, and fishermen fishing productive local waters, not access for larger boats interested in fishing locations miles from the boat ramp. Interviews with many of these fishermen indicate that they have a great appreciation for the productive fish and wildlife setting at Oslo Road.

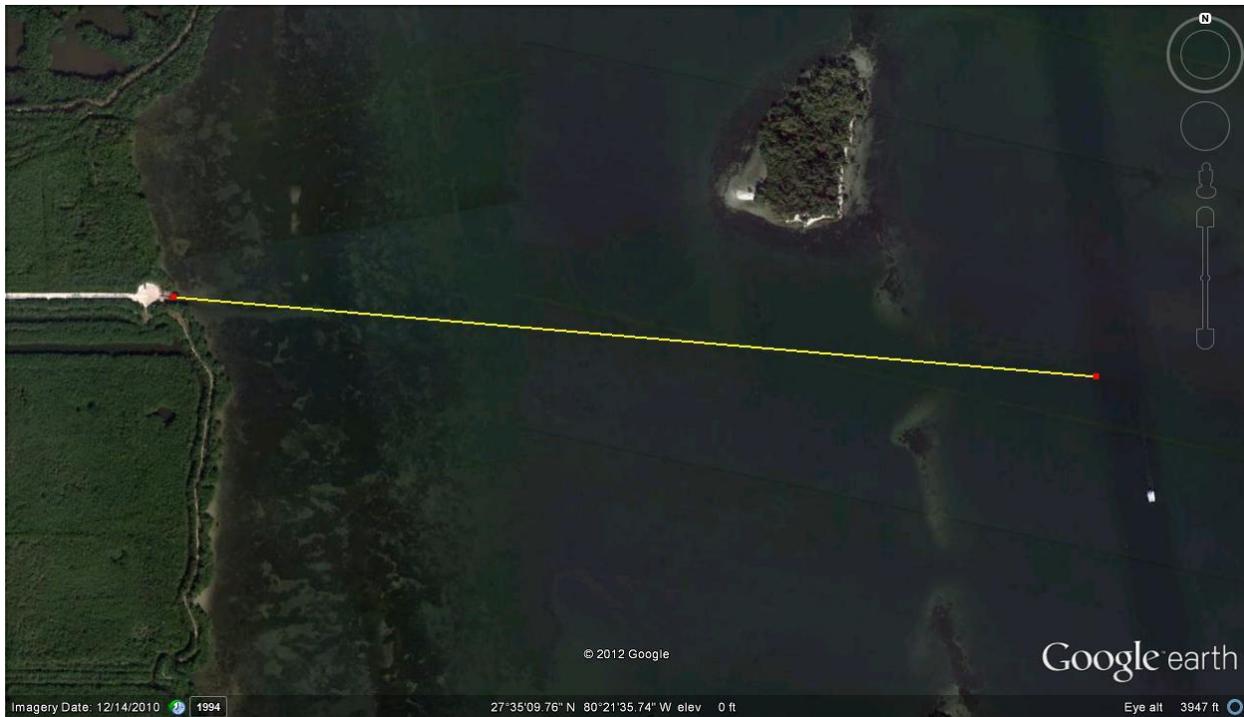
Western Oslo Road from US 1 to 58th Ave has been and is in the process of being widened to four lanes to accommodate the exponential increase in traffic associated with the thousands of new residents on Oslo Road coming from new subdivisions along this thoroughfare. The eventual plan is to build an I-95 exit on the western end of the road to accommodate the predicted increase in regional populations in southern Indian River County. Based on this rapid growth it is highly likely that if Oslo Road access to the Indian River Lagoon is paved and the paved parking facilities constructed that vehicle and boat traffic will increase significantly at this site, potentially to the point that the increased public pressure will likely further increase future political pressure to make additional parking and road improvements to the site. Increased boat traffic over present levels, particularly with boaters unfamiliar with the extremely shallow waters at this location, will likely cause additional seagrass meadow prop scaring and increased pressure

to extend a marked channel from the ramp to the Intra-Coastal Waterway. Increased traffic will increase re-suspension of bottom sediments that have settled in the deeper depressions at the base of the present boat ramp that accumulate soft flocculent sediments. This can only increase local turbidity, limit light penetration and cause further seagrass decline.



Channel Dredging: If channel dredging is allowed it is likely that the rock ledge crossing the channel will have to be removed further, creating local habitat impacts and allowing additional maintenance dredging once significant boat traffic increases take place. All of this activity is incompatible with the fishery nursery function of the Oslo Road wetlands and shallow seagrass meadows. The boat ramp is not proximate to the main ICW channel, the distance is 3408 ft. to the Intra-Coastal Waterway from the present boat ramp. Mean water depth does not exceed four feet over this distance and is below 2-3 ft for most of the distance.

*See Figure on next page.*



Yellow line shows shortest distance from present boat ramp to the ICW. Also seen are the extensive seagrass meadows along the shore both north and south of the present boat ramp. These seagrass meadows are EFH for juvenile spotted seatrout and red drum with hundreds having been captured at this location. Please note that these healthy seagrass stands are the exception in Indian River County as the County has recently lost all the seagrass meadows in the northern have of the County from the City of Vero Beach to the Brevard-Indian River County line. Loss of the seagrass shown in this photo would eliminate more of Indian River County's ability to support regional fisheries and thus effect wider fishery economies beyond Indian River County due to know fish migration habitats.

Sincerely,



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