

# Dredge Report.



## Economic interests trump environmental concerns in Jacksonville's pursuit of the St. Johns River dredging

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Swing over the Dames Point Bridge on 9A and you catch a view of Jacksonville that may forecast the future. Freighters from all over the world stop at the port, unloading cars, taking on mountains of raw materials and steaming back out to sea, stacked impossibly high with colorful containers. It's a stirring vista, and a testament to the triumph of commerce over nature. Once a tree-covered peninsula, Dames Point is now, undeniably, an economic landing strip — bulkheaded, coated in asphalt, its natural attributes subsumed in the name of trade.

Because newer, even bigger container ships are on the horizon, the Jacksonville Port Authority is seeking to transform another landscape — this one underwater. Jaxport has asked the U.S. Army Corps of Engineers to carve out another

### BY RICHARD WALL PHOTOS BY WALTER COKER

10 feet of river bottom, dredging the St. Johns from its current depth of 40 feet to 50. The project, which would extend from the mouth of the river to the Talleyrand docks 21 miles downriver, would give the new generation of freighters enough clearance to dock at the port. But it's no small undertaking. Corps officials estimate the price tag will be between \$500 million and \$1 billion. And money isn't the only cost. Scientists and river advocates contend that changing the shape of the river will change its hydrology. Though the full impact of that change isn't known, it will almost certainly

increase salinity at the northern end of the river. Since that area currently ranges from fresh to brackish, the impact of increased salinity could range from mildly significant to catastrophic — at least for species that call the river home.

The natural allies of the port — the business community, city leaders, lawmakers — have lined up in support of the dredging. Ironically, some of those same folks vehemently opposed Seminole County's plan to drain water from the river's southern end, and did so for the very same reason: It would increase the salinity content. The early science suggest that the river dredging will have a far more dramatic impact than the water withdrawal would have had — perhaps three times the effect. Yet Jacksonville leaders have been largely supportive of the dredging, since this time it's *our* economic interests — not Central Florida's — that are at stake.



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It’s an awkward civic position, one that points to how much of the discussion about river health is really about money — and how difficult it is for environmental interests to trump economic ones.

### The Big Chase

The huge container ships from Asia that will be able to make it through the Panama Canal when its widening is completed in 2014 are called post-Panamax vessels. Shippers like them because they reduce transit costs and Jaxport — a hybrid state/local entity that serves as a landlord of sorts — wants its tenants to get some of that trade.

Mitsui O.S.K. Lines, Ltd. (MOL) has already invested \$210 million in its Dames Point TraPac hub facility designed to service post-Panamax ships (Jaxport contributed \$20 million). The Korean shipping giant Hanjin is working out a similar investment with Jaxport (though those talks are currently stalled over a labor dispute). While the port insists the presence of the two Asian shipping giants isn’t contingent on the dredging, it certainly gives the project the feel of a done deal.

“The fact that Hanjin and MOL have already chosen Jaxport for their East Coast hub operations is a huge boost to the effort to get approval and funding for deepening,” says Jaxport CEO Rick Ferrin. “It’s not a ‘build it and they will come’ situation. They are already here.”

Jaxport’s growth in recent years has come from positioning itself as a global, not just a regional, facility. Jacksonville’s 65,000 port-related jobs represent a 45 percent increase since 2004, resulting in an annual economic impact of \$19 billion, according to a recent report by the transportation consulting firm Martin Associates. The anticipated post-Panamax bounce could produce as many as 25,000 jobs and \$12.7 billion in annual economic impact, just from MOL and Hanjin. (Other Jaxport clients, like CMA-CGM, APL and Hamburg Sud, also plan on getting post-Panamax business.) However, not only does the bounce depend on the dredging, port officials say, failing to dredge will have the reverse effect.

“Undoubtedly, we will wither on the vine without deepening the harbor to allow post-

Panamax cargo to come here,” says Ferrin. “There is no possible way we will hang on to all of the business we generate right now. The future of U.S. East Coast ports is post-Panamax, and everyone associated with the industry knows that deeper water is an essential piece of that picture.”

Of course, Jaxport isn’t the only one chasing big ships. Savannah, Charleston, Norfolk, Tampa and Miami are all vying for cargo and the federal funding for the dredging, which must be approved by Congress. Mayor John Peyton wants to position Jacksonville as the state’s flagship port in the coming funding battle, emulating a model already adopted by Georgia. “Because of that, Jaxport is pitted against the entire influence and legislative power of the state of Georgia,” he notes. “A tiered support system will afford greater opportunity for state assistance to Florida’s larger, more active ports and will help level the playing field for competition with other states along the East Coast.”

Most large East Coast ports will eventually handle post-Panamax vessels, Ferrin acknowledges, but he believes being among the first will give Jacksonville a distinct advantage. Already it benefits from the fact that it’s less congested than other Florida ports. Its location — due south of Ohio, within a 24-hour drive of 65 percent of all



**FILE PHOTO/WALTER COCKER**  
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# Dredge Report

U.S. consumers — is another plus. If Jaxport can get ahead in the race for limited port-improvement funds, Ferrin suggests, the sky's the limit.

## Redoing the River

With such ambitions at play, it's hard to see an environmental argument gaining much traction. And thus far, the dredging fight hasn't been a central battle for Northeast Florida environmentalists. But there are very real concerns about its impact. Jacksonville University marine biologist Quinton White concedes that the project could be an economic boon for the city. "But at the same time, it can do significant environmental harm to the St. Johns River," and that also carries costs.

"We've been monkeying with the St. Johns since we almost got here," says White,

The analysis will examine a variety of dredging depths and may decide that the optimal cost/benefit ratio is reached at some depth less than 50 feet. "Just because a ship can carry cargo down to 50 feet doesn't mean that's the optimum benefit, in terms of depth from a federal perspective," Ross explains.

If the Corps approves a lesser depth, the project sponsor — Jaxport — can chip in to dredge deeper on their own dime (something Jacksonville did on a 2003 dredging). Those costs may affect other project variables. Though the dredging proposal is for the 21 miles to Talleyrand, Ferrin says all they really need is to dredge to the Dames Point terminal, about 13 miles inland, where MOL/TraPac is and Hanjin will be. Congress has already authorized \$45 million for dredging the Mayport basin in preparation for a nuclear aircraft carrier. Because that

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executive director of JU's Marine Science Research Institute. "We've increased the channel velocity, channelized it, we've directed the flow, and that's had a lot of impact. We have to step back and ask, *What are we really doing here?*"

Figuring that out is largely the task of the U.S. Army Corps of Engineers' Jacksonville Division, which is gathering information on the economic benefits and environmental costs of the dredging. Corps Project Manager Steve Ross explains that the agency will look at projected revenues, shipping trends, port-improvement requests from other cities, likely dispersal of cargo — all things economic. It will also look at the potential environmental damage, says Ross. "We look at salinity, endangered species, habitat, all the environmental requirements. We put that all together and compare benefits to the costs." If the benefits outweigh the costs, he adds, it will win Corps approval.

project would extend from the mouth of the river about a mile and a half inland, it will boost the cost/benefit ratio of the port's dredging. That, Ferrin believes, only gives his project momentum.

## Salt Death

No matter who does what when, the proposed dredging will definitely increase salinity upstream. At a technical symposium hosted by the St. Johns River Water Management District in Gainesville last September, Dr. Peter Sucsy, supervising engineer scientist for the district, unveiled a chart for the 60 or so scientists and academics gathered. The Estuary Salinity Intrusion chart showed various lines at the bottom of the graph representing the salinity impacts of different water withdrawal proposals. At the top of the chart, high above those lines, was a red one representing salinity impacts from the port dredging.

St. Johns Riverkeeper Neil Armingeon, who was at the meeting, says it was a turning point in the debate. "I call it 'The Graph', because it totally changed this whole discussion," he says. He says the Water Management District, which supported the Seminole County water withdrawal proposal, used the chart to attack those who opposed it, like the Riverkeeper organization.

"For months we were on tour about [the river withdrawal issue], and that graph was always put up. And the reason they put it up was to say, 'Look, you're worried about this [withdrawal]? You ought to really be worried about *this* [dredging].' It became a rallying cry."

Sucsy doesn't openly criticize the Port's plan, but he does stand by his graph. "In our original study, we found that in the area near Jacksonville and toward the mouth, the dredging would have a larger impact than the water withdrawal would



## COUNTDOWN TO DIG UP: The dredging timetable as it could happen

**Early 2011:** The Army Corps of Engineers completes its draft feasibility study. Public comments and review.

**2012:** Corps issues final report on dredging recommendations.

**2012:** Congress authorizes; funds appropriated and bids advertised.

**Late 2013, early 2014:** Construction begins.

**2015, possibly 2016:** Construction completed.

have on salinity,” says Sucsy, adding that it could double or triple the effect.

Dr. Courtney Hackney, director of the Coastal Biology Flagship Program at the University of North Florida and an expert on river dredging impact, is inclined to agree. He has been studying the environmental impact of river dredging for 15 years in the Cape Fear River in North Carolina. Thanks to the discovery of a 100-year-old tidal gauge, Hackney and his colleagues were able to see how repeated dredging of the Cape Fear River increased salinity upstream. And those findings mirror what scientists all over the world have found in their dredged rivers.

“When you widen and deepen a river, you effectively reduce the friction-to-volume ratio, so the tide, which is a wave, travels upstream further and more intact,” explains Hackney, who still works on the Cape Fear

of the area,” says Hackney. “To the lay public, what they would see is everything is nice and happy, and then all of a sudden the trees die and the swamp just falls apart.”

Salt isn't the only threat. “One of the components of seawater is sulfate,” Hackney says. “[And] when sulfate gets into the peat, bacteria in that organic matter take that sulfate and turn it into hydrogen sulfide, which is extraordinarily toxic — one of the most toxic substances around ... and super toxic to most plants in freshwater marshes.”

Despite what Sucsy and Hackney have found, Corps project manager Ross suggests the jury is still out on potential impacts. He says he hears a lot of talk about the salinity issues. “But I'm an engineer, so I say, *show me the science*. We'll do the analysis, and it will show if we think we have issues or whether it will be minimal.”

Of course, both permitting agencies —

## **The dredging would have a larger impact on river salinity than the proposed water withdrawal by Seminole County, says Water Management District engineer Dr. Peter Sucsy — perhaps double or triple the effect.**

project for the Army Corps of Engineers in North Carolina, but is not officially advising the Jacksonville Corps on this project. With an unblocked river, like the St. Johns, the result is typically higher high tides and lower low tides. “In a sense, what dredging is doing is accelerating sea level rise.”

Those are freighted words in a state already facing rather dramatic impacts if sea levels rise. Global environmental impacts aren't part of the Corps' dredging algorithm, but even setting aside climate change, the effects of increased salinity could be devastating.

“If you just imagine all the trees in the Julington Creek drainage dying, that would be a fairly significant impact on the richness

the Corps and the Water Management District — must consider how the water withdrawal and the dredging would impact each other, assuming both move forward. Quinton White says both actions will affect the river, but possibly in different ways.

“When you reduce the amount of fresh water flow, it's different than just increasing saltwater intrusion. It's a subtle difference, but it's there,” says Dr. White. Which is more harmful? He's not sure; more study is needed.

Eric Summa, chief of the Corps' environmental branch in Jacksonville, says their team of scientists is looking at all environmental aspects of the dredging. They've asked the *(Continues on page 22)*



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# Dredge Report



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*(Continued from page 20)*

academic and scientific community to contribute relevant findings, "and when we don't have information, we go out and collect it." But Summa doesn't dispute that saltwater intrusion will occur. "We know that salinity is a concern," he says. "We need to determine the ecological impacts of what could occur when that saltwater wedge goes up river."

To be fair, it's possible the influx of saltwater could have some beneficial effects, even as it causes harm. Larger volumes of saltwater in the river could mean a reduction in algae blooms, Hackney suggests. And other impacts are good or bad only in the eye of the beholder. If you're a forester growing trees in the wet areas along the river, saltwater intrusion is a bad thing. "On the other hand," says Hackney, "if you catch shrimp offshore, and you have more salt penetrating further upriver, there's the potential that the estuary can be a bigger nursery area than in the past."

Such considerations aren't fantasy, notes Hackney. "These are all things that happen during sea level rise."

## The Real World of Water

Whatever the impacts of the port dredging, they would certainly be intensified by water withdrawals from the river's southern end. Until now, Northeast Florida has been united in opposition to the river draining, but the port dredging makes clear that jurisdiction, not salinity, is their primary concern.

"Since we're at the end of the river, we assume it is ours," says Hackney. "[But] when it comes down to political decisions, everyone is trying to protect their own interests."

From an environmental perspective, Quinton White would prefer that neither the dredging nor the water withdrawal occur. "But that's not real world," he concedes. Alternatively, he hopes the Corps will explore possible options to mitigate the saltwater intrusion from dredging, such as flushing out silted-up tributaries, which may improve water quality.

Hackney also believes that the dredge project will go forward, noting that the Corps only does what Congress authorizes, and Congress is motivated by business

interests. He fears, however, that once the dredging is done, monitoring of the effects may fall by the wayside, eliminating any prospects for post-dredge mitigation. "There are ways of slowing the tide upstream down, and the Corps knows how to do this extremely well," he says. "But the catch is that there is no economic incentive to do it unless you know what it's going to do in the future upstream."

Jaxport's Ferrin insists that if damage to the river from dredging is too great, he'll drop the proposal. But one senses that the threshold of "too great" will be set high; the Dames Point peninsula speaks volumes about the power of commerce. And the Corps, for all of its benchmarking and analysis, has a woeful history on environmental matters.

"I look to the Corps' scientists and experts to guide us on the other factors and help us come up with answers," says Ferrin. But he says there will also "be opportunity for public input, and I hope all concerned parties will look at the study and weigh in."

St. Johns Riverkeeper Neil Armingeon is skeptical the Corps would ever buck the powerful shipping industry. And while he is following the issue closely, his organization has also not moved aggressively to fight it. "I always say the port is critical to the city, and we support a good strong economy. It's not going to be the Riverkeeper making this decision. We as a community need to understand the potential risk to the river and the benefit," says Armingeon.

He notes that the Riverkeeper's position on the dredging became an issue in the Central Florida water withdrawal, which the group fought bitterly. When Seminole County was deposing him this summer in a related lawsuit, he says their lawyers asked him, *Why aren't you against the river dredging? Why aren't you against Jaxport?*

"They tried to make the case that we were being selective about who we challenged. I said, 'Believe me, we haven't let Jaxport off the hook,'" says Armingeon. "To step out in front of the Jaxport bus in Jacksonville is a significant thing. I'm not suggesting we are or are not. But our job is to protect the river, we've stepped out in front of many buses in the past, and we will again. We'll have to see what problems shake out, and we'll go from there." □