ALASKA TO FLORIDA

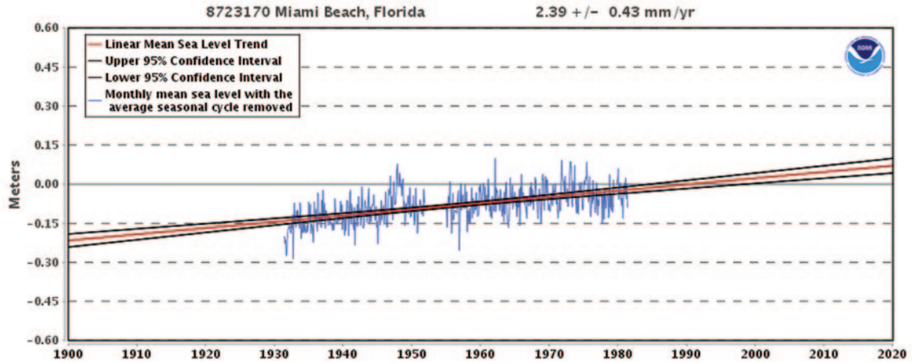
Connected Futures from

By: Dr. Colin Polsky, Professor of Geosciences and Director of the Florida Center for Environmental Studies at Florida Atlantic University (FAU); Dr. Leonard Berry of Coastal Risk Consulting; and Serena Hoermann, coordinator for the Florida Climate Institute at FAU.

They have snowshoes; we wear flip-flops. They have snow machines and sled dogs to carry them over pristine frozen ice; we have scuba boats for year-round diving in sparkling warm waters. They have the city of Barrow, the northernmost incorporated place in all the U.S. territory; we have Key West, the southernmost incorporated place in the contiguous 48 states.

Obviously, Alaskans and Floridians live at opposite extremes in worlds so distant and different, they seem completely unconnected. But today, with our increasing understanding of changing ice and weather patterns, we see that these places are linked. Unfolding changes in Alaska and elsewhere in the Arctic reverberate throughout the United States. These effects may be most evident along the eastern coastline that many Floridians call home.

Image credit: Ferdi Rizklyanto..



A closer look at Miami: The mean sea level trend is 2.39 mm/year with a 95% confidence interval of +/- 0.43 mm/year based on monthly mean sea level data from 1931 to 1981 which is equivalent to a change of 0.78 feet in 100 years.

Floridians mostly reap the consequences of the Arctic thaw in the form of sea-level rise. Warming air temperatures unleash two processes relevant here. First, warmer air means warmer water, and as the water heats, it expands. This added volume is felt as a rise in sea levels. This warming is happening in many parts of the world, but nowhere more pronounced than in the Arctic. Second, warmer air melts land ice, which flows to the coasts, increasing ocean volume locally. These local outcomes are eventually felt globally, as the world's oceans are not stationary but instead circulate across the globe over time.

Some of these predictions are already being observed in Florida. In the last 50 years we've seen 9 in. of sea-level rise, already compromising drainage canals and causing local flooding. A local working group of the Southeast Florida Regional Climate Compact projects additional rises of 6 to 10 in. by 2030 and up to 2 ft by 2060.

Image credit: Florida Atlantic University / Center for Environmental Studies.

In addition to the science, we must also explore the current and future risks of Arctic-influenced sea-level rise, raise awareness among all spheres of society, search for policy solutions, and find ways to combine mitigation efforts with those of adaptation. Many efforts are already underway across Florida to meet this challenge, engaging not only academia but also the public and private sectors and civil society.

In 2013, FAU commissioned Florida-based photographer Mary Brandenburg to take a series of photographs that would draw further attention to sea-level rise. Together with Climate Central's Ben Strauss (www.climatecentral.org/what-we-do/people/ben_strauss), calculations were made for how much sea levels are expected to rise in different coastal cities around the U.S. The result was a series titled "Sea Level Rise in My Lifetime" (www.ces.fau.edu/SLR2013/gallery.php). The photographs are a powerful testament to the future that awaits America's children living in coastal areas.

Connected Futures from Alaska to Florida
The Florida Center for Environmental Studies at Florida Atlantic University (FAU) will host our third Sea-Level Rise Summit on 3-5 May 2016 in Fort Lauderdale. We've selected the theme Connected Futures from Alaska to Florida because it is critical to compare and contrast impacts and responses in both places and present opportunities for building coastal resilience locally and globally. The sub-tropics and the Arctic are rarely discussed together, but comparing their shared experiences is sure to unlock new insights valuable to stakeholders in both regions. As in years past, the meeting will convene hundreds of leading researchers, decision makers, and private-sector stakeholders from both states. Together with national and international experts, we will discuss the state of sea-level rise science and how public policy and private adaptation efforts can lessen impacts in the areas of human health, infrastructure, ecosystems, society & water, governance, and national security & international responses. The event will shape not only nascent efforts to improve coastal resilience in both the private sector and all levels of government, but also invite a big-picture perspective through internationally oriented discussions.

The meeting will convene leading researchers, decision-makers, and other interested stakeholders to discuss the state of sea-level rise science and how public policy and private adaptation efforts can lessen the impacts everywhere.

Program Highlights
- Interactive sessions identifying sea-level rise challenges and opportunities
- Compilation of best practice sea-level rise adaptation strategies
- Examination of sea-level rise science projections for the region
- Exhibit and Poster presentations
- Networking opportunities

Who Should Attend?
- Private sector sustainability & climate change professionals
- Public policy decision-makers and implementation managers
- Researchers informing public policy and private adaptation efforts

To learn more about our Sea-Level Rise Summit, visit www.ces.fau.edu/arctic-florida/. An earlier version of this piece first appeared in the U.S. Department of State's "Our Arctic Nation" blog on Medium.com.