

Turn this Ship Around!

Scott A. Bonar | AFS President. E-mail: scott_bonar@msn.com



In 2015, the greatest United States commercial shipping disaster in 3 decades occurred. The 791-foot container ship *MV El Faro* sank near the Bahamas with all 33 hands after it sailed directly into the eyewall of Hurricane Joaquin. Investigators were perplexed. How could such a large, modern ship, with access to real-time weather data, modern communications equipment, and piloted by expert 21st century merchant mariners, sail directly into the teeth of a category four hurricane, especially when it was so easy to avoid the storm?

Fortunately, there was a way to find out; all conversations on the bridge were recorded by six microphones installed in the ceiling of the wheelhouse. They were saved on a microchip in the marine version of a “black box,” a voyage data recorder. Substantial effort was expended to locate and retrieve the recorder, which lay with the ship at a depth of 15,000 feet, and to transcribe the conversations of the captain and crew in those last hours. The results were chilling.

The captain, presumably under pressure to adhere to a tight schedule, stuck to one source of faulty, older weather data to plot a course directly into the path of the hurricane. He refused to listen to the advice of his crew when they asked him to consider other information. What struck me in reading the transcript was that the crew protested, but they seemed resigned to their fate, even as the waves and wind picked up. They seemingly did not want to upset the captain, some even justifying his actions, even though all other weather data, reports, and messages from friends practically screamed at them to do something, warning of the increasing risk. The crew dutifully tried to adapt to the ever-increasing waves and wind, trying to tighten lashings to the cargo as best as they could and batten rusty hatches, but they didn't turn the ship around. The final text message received from the second mate said, “... there is a hurricane out here and we are heading straight into it.... Love to everyone.”

Do we have our own *El Faro* incident ongoing with climate change? Are we riding the planet Earth into the eyewall of a hurricane and trying to “adapt” but not pushing those in charge and each other hard enough to turn the ship around by confronting emissions? The scientific consensus is in (Box 1). Seven different studies found between 91% and 100% of climate scientists agree climate change is real and manmade. The National Academies of Sciences from dozens of countries have issued statements endorsing the consensus that human-caused climate change is occurring. The most recent Fifth United Nations Intergovernmental Panel on Climate Change report and the fourth U.S. Assessment on Climate Change (2018) were based on over 30,000 peer-reviewed studies and the work of 13 federal departments and agencies, respectively. These compilations of studies examined volcano activity, sun activity, and other factors, and found nothing except

human-caused greenhouse gas emissions correlated with the rapid increase in temperature; a global temperature that is increasing faster and is now nearly as warm as anything we have measured in the last 11,000 years.

Models that closely fit previous temperature changes predict that at our current rate of greenhouse gas emissions, Earth's temperature is expected to increase by 9°F (5°C) by 2100 if nothing is done. Furthermore, there is no going back. Increases in heat and acidity caused by the increasing CO₂ are being stored in the earth's oceans. These seeming small changes in global temperature averages translate to big effects. Don't think a 5°C change is a big deal? Mean global temperature was only 4–9°C colder in the last ice age when ice sheets two miles thick covered many parts of the Northern Hemisphere. An Intergovernmental Panel on Climate Change report states, “Avoiding overshoot (of 1.5°C) and reliance on future large-scale deployment of carbon dioxide removal can only be achieved if global CO₂ emissions start to decline well before 2030.” We cannot call ourselves scientists and ignore this information. If these data are not sufficient to wake us up and inform us to cut carbon emissions immediately, what is?

Do we get a pass by saying we specialize in fisheries, and this doesn't concern us? Nope. Fisheries effects have already been profound. Coral reefs are disappearing, western trout habitat is expected to halve by 2080, shellfish are unable to form shells, and aquatic species ranges are shifting as much as 25 mi per year. It is our duty as aquatic conservationists to speak out. People speak out for the coal miners and oil drillers who lose jobs. Who speaks for the commercial fish boat operators, the anglers, the dive industry, and the associated businesses that are losing jobs because of climate change? Who speaks out for future generations? One dive boat captain recently told me “I don't want my kids to have to use Google to see what a coral reef looks like.”

Fortunately, there are solutions; feasible, moneymaking solutions. Renewable energy and battery development could make major strides to combat this change if we just got serious about using them and conducted more research into their continued development. Reforestation, carbon capture methods, and other solutions may also provide needed assistance. These solutions are fun, exciting, and many do not substantially change our way of life. As an owner of a solar-powered house and electric car, I speak from first-hand experience.

You have my commitment. I have, and will continue to ask AFS to meet the climate change challenge in any way we can, especially in pushing for reduced emissions. We now have a scientific team examining our old policy statement and updating the fisheries science on climate change. We plan to have a website providing fisheries-related climate change information to you and the public. We plan to engage our various AFS

BOX 1

Compilations of references on climate change impacts are vast. These are available from the Intergovernmental Panel on Climate Change reports (available: <https://www.ipcc.ch/reports/>), the Fourth U.S. National Assessment of Climate Change (available: <https://nca2014.globalchange.gov/>), and the July 2016 issue of *Fisheries Magazine* (available: <https://doi.org/10.1080/03632415.2016.1205860>). How to address skepticism about climate change using peer-reviewed studies is described at skepticalscience.com. On-ship conversations from the *MV El Faro* are available from National Transportation Safety Board transcripts with a good overview by Slade (2018).

Units to make climate change action part of their charge. However, much of our success depends on you.

Ask yourself. Ask each other. Are you like a “good crew,” trying to be polite and not overreact when a mountain of data is showing you that our course of action is to cut greenhouse gas emissions so we don’t charge into the eyewall of a hurricane? Are you unwilling to make waves, because you want to “get along” with those who deny or minimize all the evidence, even though overwhelming scientific data shows that our aquatic resources, our families and our way of life are in substantial jeopardy? Are you focusing on other issues, or perhaps cosmetic changes, because they are “easier?” Or are you willing to act? Will you show others how the mountain of available peer-reviewed data demands climate action? Will

you use your authority as an environmental professional to show your friends, family, and neighbors how the science explains climate change action should be at the top of everyone’s priority list? Will you use your scientific expertise to scream out at the top of your lungs to those in charge—and your friends, family, and neighbors who select those in charge—to change course when the best data shows the winds are picking up and we are headed into the eyewall? Ask yourself again, what choice are you making? Are you doing everything you possibly can to turn this ship around?

REFERENCES

Slade, R. 2018. Into the raging sea: thirty-three mariners, one megastorm, and the sinking of *El Faro*. Harper Collins, New York. [AFS](#)