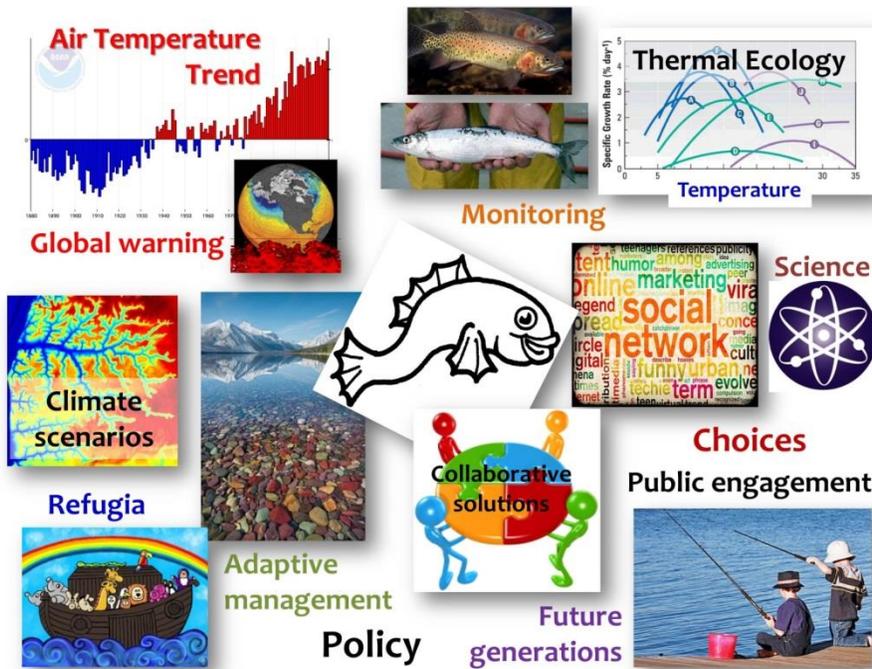


Climate-Aquatics Blog #75: The End & A Beginning



Hi Everyone,

I'd like to begin this last blog with an apology. Most of you are on this mailing list because I put you there rather than you asking to be there. As such, you've been subject to all manner of strange things in large emails emanating at all hours of the day for 5 years now. My apologies for that & I much appreciate your tolerance. But climate change poses a large enough, and complex enough, set of issues to Earth's aquatic organisms and environments that it seemed a necessary thing to do. By dividing the email onslaught into bite-sized bits (which are all in the attached .pdf), hopefully it minimized the imposition and served to pass along useful information while keeping climate a constant part of our consciousness. I attempted to sketch a coherent outline by working through a series of modules—on [stream temperature](#), [hydrology](#), [biology](#), and [management responses](#)—while also providing occasional [syntheses](#) or descriptions of new tools & technology ([cool-stuff module](#)) that might be especially useful in addressing climate-aquatic information needs. But now that the outline's in place, it's time to circle back and start filling in the details of individual chapters.

Nobody knows yet where this whole climate thing is going and if/when/where we'll stabilize into a post climate-change world. Given the inertia in the climate system, human economies, and current trends in greenhouse gas emissions, there's a high likelihood that the Earth continues to warm through at least midcentury. What happens by the end of the century is far less certain because it ultimately depends on the amount of greenhouse gas emissions in future decades and how our energy systems and life ways evolve. But I do have great hope and confidence that we'll figure something out even if the solutions aren't immediately apparent because there aren't really any alternatives. So while broader society grapples with the issues and finds a way to muddle through, our mission as fish people at the beginning of this defining century is more straightforward. Catalogue the Earth's aquatic biodiversity and map it, understand how fisheries dynamics relate to climate, organize disparate historical datasets into functional databases & information systems that are capable of generating & accommodating waves of

new data, build and refine better monitoring networks and models, link information flowing and growing from those sources to the ways we make decisions about where to invest limited conservation resources. And continue refining and improving the whole system as we collectively and continually learn more. Climate can't be an externality to how we adapt, invest, and conserve the way CO2 has been to traditional measures of economic performance if we're going to be effective in the long-run.

I have great certainty that the Aquatics Army will respond to this challenge because we already are. There is a night and day difference between where things were 5 years ago, where they are now, and where they are going in a hurry. Much is possible when people work together and the aquatics community is one perfused with tremendous passion, focus, ingenuity, and collaborative spirit. There is yet a huge amount of work to do but we'll do our part to lay the necessary foundation and then pass the keys to the next generation of natural resource stewards, as they will ultimately have to do for their successors, until we get to where we're going to be. And we'll be compelled along that path because ontogeny does indeed precede phylogeny and we all have an inner fish. We are they, and they are us.

It's been a great pleasure to get to know many of you over the years and share energy & ideas around the globe, but it would be rude to further overstay my imposition and it's time now to get busy...

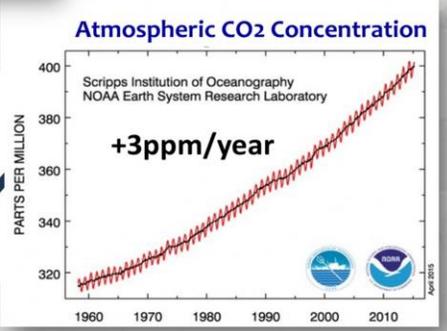
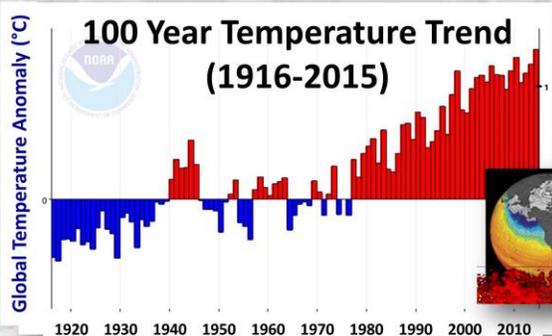
Best regards, Dan



Tweeting at [Dan Isaak@DanIsaak](#)



No Sugar-Coating It, There will be Some Tough Decades Ahead...



Global Temperature Anomaly (°C)

100 Year Temperature Trend (1916-2015)

NOAA

1920 1930 1940 1950 1960 1970 1980 1990 2000 2010

Atmospheric CO₂ Concentration

Scripps Institution of Oceanography
NOAA Earth System Research Laboratory

+3ppm/year

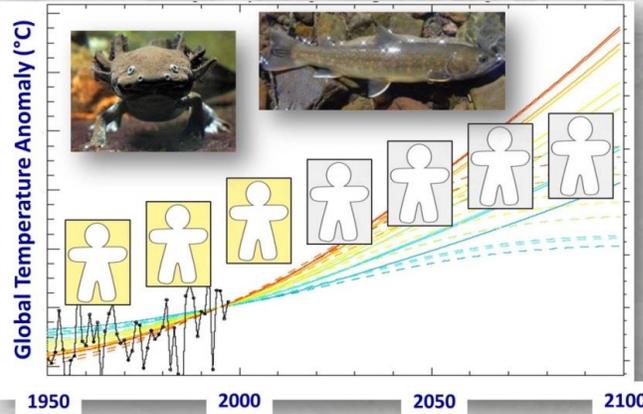
PARTS PER MILLION

1960 1970 1980 1990 2000 2010

April 2015

Foot still on the greenhouse gas pedal...

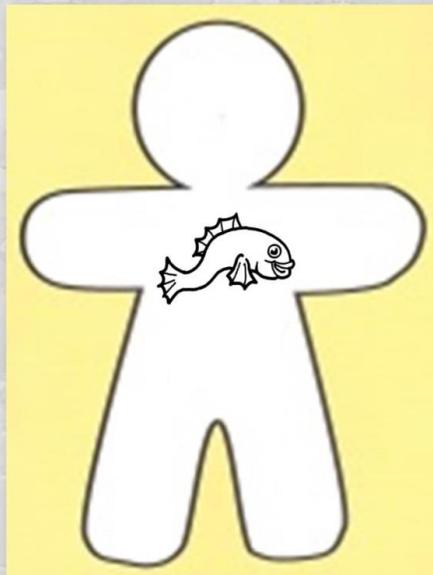
The Sooner & Smarter we Act, the Bigger the Long-term Impact



This can be our
Finest Century



& We Will Act Because We all Have an Inner Fish



All the Earth's precious
water if summed into one big
blue beautiful marble

