Fish Conservation, Sustainable Fisheries, and Economic Growth:
No More Fish Stories

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What is the biggest challenge to fish conservation and sustainable fisheries in North America today? Certainly some of the leading candidates would be human population growth, habitat destruction, commercial fishing, dams and other water diversions, aquifer depletion, water pollution, and invasive species. In other words, as a recent U.S. President was fond of saying, "It's the economy, stupid!"

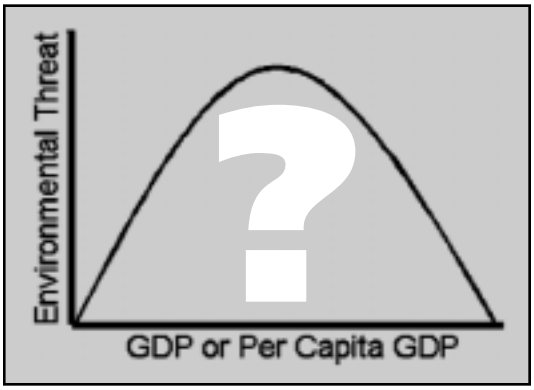
Let's clarify the connection of these threats to the economy. The growing population comprises our producers and consumers. Habitat destruction is invariably associated with economic sectors such as logging, livestock grazing, and home construction. Commercial fishing is an economic sector unto its own. Dams and other water diversions are constructed primarily for electrical power generation, agricultural water management, and other economic purposes. Aquifer depletion is associated with agricultural activities and urban development (including the proliferation of manufacturing and service sectors). Water pollution is a byproduct of agricultural, extractive, manufacturing, and service sectors. Even invasive species have a link to the economy because many arrive as a function of international and interstate commerce.

Now consider the political and policy context of U.S. fish conservation: a nation that espouses economic growth as the highest priority in the domestic policy arena. Economic growth is also prioritized by the Canadian and Mexican polities.

Economic growth is an increase in the production and consumption of goods and services. It means more of all the things on our list of threats to fish and sustainable fisheries. It entails increasing population, per capita consumption, or both, as generally indicated by increasing gross domestic product (GDP). It is a primary, perennial, and bipartisan goal of the American public and polity. Therefore, it is not enough to merely mention "human activities" when we talk about threats to fisheries. We need to use the phrase "economic activities" or, better yet, "economic growth" to connect clearly and concisely with the relevant policy table.

Most biologists infer that economic growth comes at the expense of ecological integrity, environmental protection, and ecosystem health. However, they generally feel economics should be left to the economists, who tell us we need economic growth for the sake of environmental protection. This enticing argument is known in economics jargon as the "environmental Kuznets curve" (Figure 1). Simon Kuznets was the famous economist who applied this inverted U to other variables in the 1920s. Today, politicians and political economists look for Kuznets curves behind every tree and river to justify economic growth as a policy goal.

Figure 1. Environmental Kuznets curve illustrating the simplistic and controversial concept that increasing GDP (especially per capita) is required for environmental protection.



The simplistic reasoning behind the environmental Kuznets curve is that we need enough money to fix the problems caused by earlier phases of economic growth, like a tail wagging a dog. The curve "fits" only in a microeconomic sense and only in some cases. For example, we tackled the CFC problem (we think) when we had enough money to verify the dangers of CFCs and develop alternatives.

In a macroeconomic sense, the environmental Kuznets curve is a fallacious, dangerous concept. New threats proliferate in lock-step with economic growth, and generating the money to address these threats requires yet more activity in all the economic sectors that already threaten fishes and the environment in general. It is a classic negative sum game.

Most biologists stick to the field, eschewing economics and politics. That is a shame, because biologists have the background to instill economic policy with precisely those concepts most needed in today's "full world economy." Biologists are the economists of nature. They deal with production functions, sectoral dynamics, and growth models, as do "regular" economists. Economists just limit their scope to the human species, while we deal with a diversity of non-human species. Unfortunately, the economist typically has little background in the natural sciences, especially ecology.

Fisheries biologists also study trophic levels and relations among producers and consumers. Increasing biomass of primary and secondary consumers and service providers (such as decomposers and scavengers) is dependent upon increasing primary production. We

also know that the laws of thermodynamics limit the ratio of consumers to producers and, ultimately, biomass production in the aggregate. We would do well to incorporate trophic theory into economic policy, which assumes an ever-increasing ratio of services to goods, thereby escaping any limit to economic growth.

Indeed, the prevailing theory of economic growth posits no limits because technological progress leads to perpetually increasing productive efficiency. In recent years a body of literature has developed in ecological economics to refute this dangerous theory. Common sense also helps, for to claim there is no limit to economic growth in a finite area is precisely equivalent to claiming that a steady state economy (with mildly fluctuating population and consumption) may exist on a perpetually diminishing land mass. In other words, some day we could operate the $10 trillion American economy in a high-tech tacklebox, leaving the lakes, rivers, and oceans devoted to fisheries conservation! This is a ludicrous fish story, of course; precisely as ludicrous as claiming there is no limit to economic growth in your state, province, nation, or the Earth.

Fortunately, there is a new movement afoot to engage biologists and ecologists in macroeconomic policy. A noteworthy phase began at the 1998 conference of The Wildlife Society (TWS) with the symposium, "The Importance of Ecological Economics to Wildlife Conservation." This led to the publication of TWS Technical Review 03-1, which described the "fundamental conflict between economic growth and wildlife conservation." The Working Group for the Steady State Economy was formed to craft and advocate a TWS position on economic growth consistent with the technical review. Finally, TWS Council will be voting whether to adopt such a position at the 2004 conference in September. If the relatively conservative and reputable TWS takes a position, it will be a snowball on a hilltop, empowering and emboldening other professional societies to do likewise.

It also helps considerably that the United States Society for Ecological Economics (USSEE) adopted a position on economic growth in August 2003 that identifies, among other things, a "fundamental conflict between economic growth and ecosystem health (in such areas as biodiversity conservation, clean air and water, and atmospheric stability)."

This brings us to the role of the American Fisheries Society (AFS) in addressing the threats to fish and fisheries conservation, because the next most logical candidates for adopting a position on economic growth are the AFS, Society for Conservation Biology (SCB), and the Ecological Society of America (ESA). Some efforts have already been made. For example, the SCB North American Section is considering a position, which (if adopted) would then be advanced to SCB at large.

As active members in these societies, we think the linchpin now is the highly reputable AFS. An AFS position coupled with a TWS position would constitute a powerful collective statement. SCB and ESA would likely follow suit.

At the AFS 2004 Annual Meeting in Madison, a one-day symposium entitled "Economic Growth and Fisheries Conservation" should serve as a catalyst for action. Following an overview of ecological economics, a series of papers will illuminate the conflicts between various economic sectors and fisheries conservation. Presentations on the role of fisheries biologists, professional societies, and government agencies will segue into an open forum on the potential for AFS engagement. An Economic Growth Section of AFS has already been proposed and would surely find its first members and supporters at the symposium. This new Section, or perhaps an existing Section, may support AFS in developing a position on economic growth.

How will it help for professional societies to adopt positions on economic growth? (A template position on economic growth is posted at www.homestead.com/steadystate/PositiononEG.html.) Let us consider what political scientists call the "iron triangles" that surround policy arenas and fend off all comers. An iron triangle consists of a special interest group, a political faction, and a professional society as typically manifest in one or more government agencies.

The triangle surrounding the economic policy arena is probably the most iron-clad in the history of constitutional democracy. The "special interest group" is essentially the entire corporate community, which benefits greatly from a theory of perpetual economic growth and resulting pro-growth policies. Due to the notorious American campaign finance system, virtually all politicians are endeared to corporate interests. (Have you ever heard a politician mention the perils of economic growth?) The profession forming the third side of the iron triangle is neoclassical economics, whose practitioners populate the Council of Economic Advisors, Federal Reserve System, and Department of Commerce. Guided by corporate and political interests, they construct and control the macroeconomic levers.

The iron triangle currently has carte blanche to claim, "There is no conflict between economic growth and environmental protection!" If a critical mass of professional societies adopts a contrary position on economic growth, however, it will get media attention. The phrase, "It's the economy, stupid," will take on new meaning. Economic growth will once again be open to public dialog and scrutiny, as it briefly was in the 1970s, but this time with diverse professional backing. It may cause some stress and strain for the conservation professions, but it will also garner a lot of support. In any event, to shrink from the challenge relegates our professions to a collective exercise in futility and ensures the downward spiral of fish faunas, fisheries, and aquatic ecosystems.

We conclude by exhorting AFS members to play a leading role in this effort. The AFS, TWS, SCB, ESA, and USSEE would form a powerful core around which dozens of professional societies such as the American Ornithologists' Union, American Society of Mammalogists, American Society of Limnology and Oceanography, Society for the Study of Amphibians and Reptiles, Society for Marine Mammalogy, etc., would likely gather. The "Big 10" environmental membership organizations would then have the professional traction for broaching the topic to their constituents. Even government agencies would be hard-pressed to ignore the issue.

The AFS, currently the linchpin in the effort, should consider itself poised to change the face of American conservation politics and policy. See you in Madison!