

Fishing Down The Food Web to Reduction Fisheries

Fishing Down The Food Web to Reduction Fisheries: Collapse of Wild Capture Fisheries Imminent Due To Entropy Co-efficient of Protein Transfer In Aquaculture

Biomass increases inside MPA's, will not cover regional bio-diversity biomass loss to the carnivorous aquaculture industry, as feedstock. Market driven solutions promote collapse of wild healthy ocean ecosystems and coastal community daily subsistence ocean food gathering. While this may seem a bit of a stretch, lessons from industrial methods of global agriculture and aquaculture systems (impacts) thus far, have little regard for the poor, or the hungry.

This **Wednesday, October 28 , 2009** the California Ocean Science Trust (OST) is hosting a public briefing to Provide Information Related to Oil and Gas Platform Decommissioning Alternatives in California. The meeting will be held Wednesday, October 28 from 1p.m. to 4p.m. at the Southern California Coastal Water Research in Costa Mesa, CA.

The meeting agenda is available at <http://www.calost.org>

Wild No More, Death Songs From:

Jane Bluechenko the Blue Whale, We're All Small Fish:

Industrialization of the ocean, bio- mass ... like a requiem, more big fish biomass, more eggs mean more little fish, but trophy size restrictions, MPA's and sustainable market solutions - the fuel of aquaculture feedstock, patented protein, consolidated fishing access rights by quota share... eco-tourists dining on farmed fish... sustainable aquarium ocean industry markets for wild capture fisheries - for the purposes of education and entertainment and as feedstock.

Future B&B's, Inns, fine dining establishments, full service marinas - all with fish on the plates from.... SeaWeb Sea Food Alliance & Seafood Choices Sustainable Markets; brought to us by the Aquarium Ocean Policies of the RLFF, TOC and NRDC - all MSC or ASC certified.

Mariculture & Aquaculture Feeds:

MLPA: More Likely to Promote Aquaculture - Oct 2nd 2009

<http://www.indybay.org/newsitems/2009/10/02/18624167.php>

Presently “nearly 12,000 square miles of coastline off the North Coast is closed to salmon and/or bottomfishing.” “While not called an MPA, the federal RCA (Rockfish Conservation Area) is identical to a state proposed MPA....”

http://californiafisheriescoalition.blogspot.com/2009_08_01_archive.html

Aquaculture is seen as a supplement to global seafood supplies as landings from wild fisheries have peaked. Currently, however, the protein and energy needs of farmed carnivorous species, such as salmon and cod, are met mainly through the use of fishmeal and oil obtained from fisheries directed at small pelagic fish. These fisheries, called reduction fisheries, are generally fully exploited or overfished worldwide.

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Scientists are increasingly concerned about the ecological effects of these fisheries because small pelagic fish are an important food source for predators in marine ecosystems. Scientific feed formulation and feeding practices, driven in part by the rising price of fishmeal and fish oil, have resulted in substantial improvements in the efficiency of feed use on the farm. There is nonetheless a growing realization that if aquaculture of carnivorous species is to expand, alternatives to fishmeal and fish most likely plant based ingredients are necessary.

Our ability to catch fish has simply exceeded the capacity of marine ecosystems to produce them. Yet demand for seafood continues to grow. To fill this gap, governments and the seafood industry look increasingly to aquaculture. The industry has grown nearly nine percent per year since 1970 and is now responsible for more than 37 percent of worldwide fisheries landings. In the United States, growth has been slower but aquaculture still produces freshwater fish and seafood worth approximately \$1 billion annually. The Department of Commerce has called for an expansion of U.S. aquaculture to \$5 billion in annual production by 2025.

With such dramatic growth worldwide, and with the United States poised to expand its industry, it is time to take a closer look at how aquaculture, the growing of fish and other aquatic organisms, is changing our diets, our coastal communities, and our oceans.

Overall the vast majority of aquaculture production is for human consumption while about **30 percent of the global wild fish catch is used to produce fish meal and oil for livestock fodder and non-food products.** As a result, aquaculture makes up a greater share of the seafood produced for human consumption than it does of total fisheries harvest.

Reflect on that a moment, and think back to this summer's news:

http://www.cafisheriescoalition.org/science_review.htm

Highlights from the MLPA Science Review

by Ray W. Hilborn, PhD, Richard H. Parrish, PhD and Carl J. Walters, PhD

"Not only do the models predict very modest gains in abundance from having MPAs over the gains likely to be realized through existing and future fishery management, they further predict that such additional gains in abundance will be at the expense of fishers, in the form of reduced yields."

"When fishery management includes quotas, the use of MPAs will not reduce the volume of fish taken; it will only change the geographical distribution of the take. It does not require a complicated population model to know that the increase in biomass inside of MPAs will be roughly balanced by the decrease in biomass outside."

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“Much of the motivation for the MLPA was concern about the state of the groundfish stocks - there is clear evidence that these can be rebuilt without MPAs resulting from the MLPA that have only recently begun to be implemented,” Hilborn said. “The benefits of the MPAs established under the MLPA will be primarily to have some areas of high abundance of species with limited mobility.”

Dr. Hilborn, a professor at the School of Aquatic and Fishery Sciences at the University of Washington, and the other authors of "Rebuilding Global Fisheries" say that efforts made to reduce overfishing are succeeding in five of ten large marine ecosystems studied, including those in California.

http://californiafisheriescoalition.blogspot.com/2009_10_01_archive.html

Last week; [Enviros, Fishermen Force Governor to Extend MLPA North Coast Process](#)

The Sustainable Oceans Act was signed into law on May 26, 2006.

The law allows areas of California’s marine waters to be leased for finfish aquaculture under certain conditions. Environmental protections in the bill operate through two mechanisms. The second is most important: ...Secondly, leases and regulations for marine finfish aquaculture must meet the following standards:

- The site must have been judged appropriate in the programmatic environmental impact report;
 - The lease must not unreasonably;
 - Interfere with fishing or other uses of the ocean,
 - Disrupt wildlife and marine habitats, or
 - Harm the ability of the marine environment to support “ecologically significant flora and fauna;”
 - A lease shall not have “significant adverse cumulative impacts;”
 - Use of fishmeal and fish oil shall be minimized, and alternatives to these feed ingredients shall be utilized where feasible;
 - Lessees must develop and implement best management practices to ensure environmental protection and compliance with the law;
-
- The California Fish and Game Commission may take action to prevent or stop damage to the marine environment and must take “immediate remedial action to avoid or eliminate significant damage, or the threat of significant damage, to the marine environment.”

All farmed fish must be marked, tagged or otherwise identified unless the Fish and Game Commission determines this is not necessary for the protection of wild stocks;

- Facilities and operations shall be designed to prevent the escape of farmed fish and lessees

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are responsible for damage to the marine environment caused by more than de minimis escapement; and

- Lessees shall meet all applicable requirements imposed by state and federal water quality laws.

Congress (should) lay the groundwork for the orderly, well-planned and environmentally sustainable development of offshore aquaculture by requiring NOAA to:

2.1. Make organizational arrangements to separate its regulatory, permitting, monitoring, and enforcement functions from its aquaculture research and development activities;

Thoughts On "Feeding the World" through Industrial Aquaculture

By Mike Skladany, Institute for Agriculture and Trade Policy

“With the confluence of mid-1980s social and economic forces, global restructuring, trade liberalization, technological advancement, economic decline and the concentration of power a broad political-economic move to seek market solutions for social problems gained a political consensus whereby aquaculture became an exclusive industrial growth strategy.”

We're being force fed the MLPA as a fisheries management tool and a whole lot more

Read between the lines...

REPORT OF THE MARINE AQUACULTURE TASK FORCE

Sustainable Marine Aquaculture:

Fulfilling The Promise; Managing The Risks January 2007

On the **Marine Aquaculture Task Force** is Byron Sher who was elected to the California State Senate in 1996 in a special election. He was subsequently re-elected to two four-year terms, and served as the first chairman of the Senate Environmental Quality Committee. Mr. Sher served for over 15 years in the State Assembly, where he chaired the Natural Resources Committee and the Criminal Law and Public Safety Committees.

“The nascent marine finfish aquaculture industry, is based on the use of native wild broodstock and appears to be developing in a way that poses a minimal risk to wild populations of fish through escapes. The most popular farmed species among consumers in developed countries tend to be carnivores, creating an additional challenge to sustainability. Forms of aquaculture that consume more fish than they produce cannot assist society in addressing the global problem of wild fisheries depletion.”

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A sustainable aquaculture certification system should include criteria that require the use of sustainable feed products.

25.1. Certification criteria should require that if feeds containing ingredients derived from fishery resources are used to produce the aquaculture product being considered for certification, the fisheries those ingredients are derived from must be considered healthy and are under a management system that protects the structure and function of marine ecosystems.

25.2. Certification criteria should require that feed ingredients not derived from directed fishery resources are produced in accordance with sustainability standards for aquafeeds.

<http://codes.lp.findlaw.com/cacode/FGC/1/d12/5/s15400>

CAL. FGC. CODE § 15400 : California Code - Section 15400

(a) Except as prohibited by Section 15007, the commission may lease state water bottoms or the water column to any person for aquaculture, including, but not limited to, marine finfish aquaculture.

A person shall not engage in marine finfish aquaculture in ocean waters within the jurisdiction of the state without a lease from the commission. Leases and regulations adopted by the commission for marine finfish aquaculture shall meet, but are not limited to, all of the following standards:

(1) The lease site is considered appropriate for marine finfish aquaculture in the programmatic environmental impact report if prepared and approved by the commission pursuant to Section 15008.

(3) To reduce adverse effects on global ocean ecosystems, the use of fish meal and fish oil shall be **minimized**. **Where feasible**, alternatives to fish meal and fish oil, or fish meal and fish oil made from seafood harvesting byproducts, shall be utilized, taking into account factors that include, but need not be limited to, the nutritional needs of the fish being raised and the availability of alternative ingredients.

(5) Before issuance of the lease, the lessee shall provide **baseline benthic habitat and community assessments** of the proposed lease site to the applicable regional water quality control board or the State Water Resources Control Board, and shall monitor the benthic habitat/community during the operation of the lease in a manner determined by the regional board or the State Water Resources Control Board.

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Aquaculture Leases

S.B. 201 (2006) amends Cal. Fish and Game Code § 15400 to authorize the California Fish and Game Commission to lease state water bottoms or the water column for marine finfish aquaculture. Water bottom leases will be awarded to the highest responsible bidder.

Programmatic Environmental Impact Report

S.B. 201 adds § 15008 to the Cal. Fish and Game Code to require the Department, in consultation with the Aquaculture Development Committee, to prepare programmatic environmental impact reports for existing and potential commercial aquaculture operations in both coastal and inland waters, but only if funds are appropriated to the Department for this purpose and matching funds are provided by the aquaculture industry.

80% of U.S. seafood is imported

- 1) 4.8/5.8 billion lbs import/consumed
- 2) China leading exporter to US (400 rejected shipments/yr)
- 3) Seafood is a high risk category by FDA
- 4) 50% of imports are farmed
- 5) Impact to our national trade deficit is approximately \$8 billion, which ranks it #2 next to oil
- 6) U.S. domestic aquaculture production valued at \$1 billion
- 7) US to double aquaculture production by 2025 to 800,000 metric tonnes

Ready To Go Offshore Aquaculture

White seabass
California halibut
California yellowtail
California sheephead
Striped bass
Rockfishes
Cabezon

Extraterritorial Application of State Law

“In matters affecting its interests a state may exercise extraterritorial jurisdiction where there is **no conflict with federal or international law.**” As long as California does not attempt to regulate the siting of offshore structures which does come under federal jurisdiction, there is no conflict with federal laws.

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Section 30230 California Resources Code; Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.”

Some California Specific Thoughts:

DFG reported that 2.6 million pounds of fish were caught off the coast of San Diego County in 2006, for a combined value of \$7.1 million.

Estimated value of 3000 metric tonnes (1 mt = 2204 lbs) of offshore aquaculture product could be about \$22 Million (\$6.50 - \$8.50/kg dockside value of striped bass)

It's A Brave New World: Aquatic Animal Vaccines

Ocean Aquaculture: California Issues and Visions

Vaccines, though certainly not a substitute for management practices and biosecurity protocols at aquaculture facilities, offer a way for the aquaculture industry to prevent disease in aquatic animals without the use of chemicals that ultimately end up in the marine environment. Vaccines show the most promise for finfish, as opposed to crustaceans or mollusks, and are used to provide long-term protection against specific pathogens.

Before Congress could evaluate the 2007 Offshore Aquaculture Bill, the U.S. Department of the Interior published that it intends to issue permits for offshore aquaculture operations on or near oil platforms, potentially circumventing the legislative process.

In 2008, the Cannery Row project in Monterey, Coastal Development Permit Number 3-06-065, denied by the Coastal Commission, is an interesting look at future processing related water uses, and fresh water supplied by desalination that affects the water quality of the coastal waters....

The California Ocean Science Trust (OST) is hosting a public briefing presented by the study team lead, Dr. Brock Bernstein for the Study to Provide Information Related to Oil and Gas Platform Decommissioning Alternatives in California. The meeting will be held **Wednesday, October 28 from 1p.m. to 4p.m.** at the Southern California Coastal Water Research Project facilities at 3535 Harbor Blvd., Suite 110 Costa Mesa, CA.

The meeting agenda is available at <http://www.calost.org>

Interactive Webinar

<http://www.freeconference.com/SharePlusConnect.aspx?E=440231b950f0e8908f27754742974295&B=7893857&AC=1>

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7.1.2 Alternate Use of Oil and Gas Platforms (MMS)

Impacts from alternate use of existing oil and gas platforms include fisheries enhancement and economic benefits to both platform operators and government agencies involved in natural resource protection. Platform removal is costly. Removal costs can be reduced by finding alternate uses for platforms.

Of course, if you're not buying what they're selling i.e., mariculture - the new sustainable fish market - the end of "wild" capture fisheries, patented protein...

<http://www.foodandwaterwatch.org/fish/oceans-policy/oil-rigs-and-fish-farms/rigs-riches/rigs-to-riches>

has another view.

In the year 2000 or 2001 journalist Dan Bacher covered the Rigs to Reefs Program.

Senator Dede Alpert has proposed legislation to establish a Rigs-to-Reef program in California and has asked the **President of the University of California and Chancellor of the California State University System** for technical assistance on decommissioning issues. The University of California Marine Council, whose members include directors of three campus marine science institutes and representatives from the Scripps Institute of Oceanography and the California Sea Grant College, have appointed a Select Scientific Advisory Committee on Decommissioning Alternatives.

Chevron formed a nonprofit public benefit corporation called the California Artificial Reef Enhancement (CARE) Program. The goal of CARE is to facilitate and disseminate credible research on artificial reefs and their role in the marine ecosystem. Members of the Board of Directors include representatives from Chevron, United Anglers Association, Diving Unlimited International and the Professional Association of Diving Instructors. Chevron has provided initial seed money to begin the effort and will provide the results of research to the Select Scientific Advisory Committee on Decommissioning Alternatives, agencies and the general public.

http://www.slc.ca.gov/Division_Pages/MRM/Rigs_to_Reef/Whitepaper.html

That Chancellor was no other than Barry Munitz.

Now, at a time when marine researchers, through the MLPA-I will gain significant protected areas for study, the establishment of these additional research areas will provide an intrinsic argument for **increased research grant funding, providing enhanced employment opportunities.** Classroom studies include attending hearings, and providing study reports on Coastal and Ocean Management Law & Policy (Winter 2009 – Bren School, UCSB)

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Topics include “discussion of place-based management, marine spatial planning, ocean zoning. How might federal and state agencies and laws be restructured to address fragmentation problems as well as spatial and temporal mismatches?” Siting of “coastal dependent facilities” (e.g. LNG terminals, nuclear power plants, oil and gas drilling platforms and related facilities). “The focus of legal study will be the federal consistency requirement of the CZMA, 16 USCS 1456.”

But the grades of students should be based primarily on educational excellence and not diluted by credit-awards for political participation on issues that benefit the universities, faculty, or their institutional colleagues, including the indirect promotion of grant funding. These students should not be employed as pawns in a political effort that will almost certainly shift financial benefit from one community group to another.

Most students will attend with an opinion largely formed under the sequestered influence and authority of their professors. Many of these students will simply be employed in an emotional public relations effort that brings little additional academic value to the discussions.

Conversely, those students who are truly engaged and informed on the issues are perhaps the most important participants in this process. These young people will be most affected by the outcome of this process and will be the stewards of our oceans for decades to come.

Perhaps the regents and trustees of our universities should be engaged, to determine if the political mobilization of their students, through such 'credit-awards', is appropriate, particularly in a matter that potentially shifts financial benefit to the grant programs of professors and their colleagues, at the expense of others in the community. *Steele*

Barry Munitz is the first Chancellor to return to the California State University system as a Trustee Professor after an absence of eight years, and that is after being fired from the Getty Trust in 2006. The Trustee Professor program was established in November of 1984, and it is available to high-ranking executives holding tenure on one of the system campuses who were appointed before November 18, 1992 when the program was terminated.

<http://irascibleprofessor.com/comments-05-03-06.htm>

In 1998 while at the Getty, Barry Munitz delivered the speech;

"The Role of Institutions in Leading Public Discourse"

“I think the fundamental change has to be a conspiracy between governing boards, the selectors of governing boards and the preparers of college and university presidents and museum directors and symphony directors that treats the profession like a profession, acknowledges the legitimacy of trying to get better at it, acknowledges the reality of the

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conditions that prevail when you take it on, and acknowledges that the only way it continues to get stronger is that the way you get and teach the board members is to have some buffer between the politics and the fund raising, on the one hand, and the reality of a selection process, ... can be useful in Supreme Court selections or a different mechanism.”

<http://www.upenn.edu/pnc/munitz.html>

The MSC label has been criticized by conservation organizations for a number of reasons: the use of consultants who usually work for the industry to conduct the certification; the lack of adherence to its standards during the assessment and certification process; the key principle regarding the protection of marine aquaculture receiving certification; and fisheries not in compliance with national laws have been certified. (Highleyman et al. 2004).

California Department of Fish and Game Master Plan Appendices January 2008

State, Federal and Local Agencies with MPA Interests and their Authority to Establish MPAs

California Department of Parks and Recreation (State Parks) is Responsible for almost one-third of California's scenic coastline, the Department of Parks and Recreation manages coastal wetlands, estuaries, beaches, and dune systems within State Park units. Through State Water Bottom Leases, State Parks has management authority over several underwater areas, though does not have authority to restrict the take of living marine resources.

Notwithstanding, the MLPA requires that State Parks have a seat on the science team, and that they will be involved in discussions about and designation of marine parks.

The "State Marine Parks" that are listed in Section 632, Title 14, were not designated by the State Parks and Recreation Commission. These "Parks" were previously listed in Section 630, Title 14, CCR, under the Commission's authority as Ecological Reserves or as the marine component of Ecological reserves or were listed in the Fish and Game Code, by the State Legislature, as Marine Life Refuges. Therefore, consultation with, and concurrence from, the State Parks and Recreation Commission as specified in Section 36725(a) of the Public Resources Code does not apply to this rulemaking.

It has been estimated that the U.S. seafood market will require an additional 4 billion pounds of seafood by the year 2020, with aquaculture potentially providing most of the needed production (Johnson 2003).

The pros and cons of the Marine Stewardship Council initiative:

A Debate SAMUDRA Report of the International Collective of Fishworkers 1998

Tomas DiFiore
Seaweed Rebellion