Public Comments
on the U.S. Commission on Ocean Policy's Preliminary Report

Topic Area: Aquaculture

Comments Submitted by:

- Virginia Enos, Cates International, Inc.
- Tracie Letterman, Center for Food Safety
- Robin Downey, U.S. Pacific Coast Shellfish Growers Association
- Richard Langan, University of New Hampshire
- L. Neil Frazer, University of Hawaii at Manoa
- Michael F. McMaster, Mariculture Technologies International, Inc.

Comment Submitted by Virginia Enos, Cates International, Inc.

June 2, 2004

Comment on Preliminary Report of the U.S. Commission on Ocean Policy:

My name is Virginia Enos and I am Vice President and co-owner of Cates International, Inc., the Hawaii based offshore aquaculture farm that is referred to in the Preliminary Report (Chapter 22, page 271, under the heading; Marine Aquaculture in Offshore Areas). I co-founded the commercial operation, secured funding sources, authored the Environmental Assessment in 2000 and did most, if not all, of the permitting work with the various State and Federal agencies. My duties now are primarily shore based in the business, administration, and information assessment of the many issues facing the development of our industry.

My comment is in reference to Chapter 22 and is based on an issue that should be included in this report, that is the recognition of the US Department of Commerce Policy on Aquaculture. Current political atmosphere of our times and the degree of biased opinion that aquaculture farmers must struggle to overcome is formidable. Bias news stories and unfounded negative claims from special interests have impacted every aspect of aquaculture development from permitting issues, environmental monitoring protocols, land use, financing, and consumer uncertainty. Unfounded or created "concerns" hamper and impede responsible progress. Though the Federal Government has clear insight to the need to develop a US aquaculture industry and reduce our seafood deficit, little is done to educate the public of the importance of the issues with solid factual scientific information1[1].

US policy on aquaculture development must be more widely understood. Most Americans have no awareness of the most basic national seafood issues such as the decline of the fisheries, the trade imbalance, the rate of rise of seafood consumption, or of the strict environmental guidelines that the policy calls for. This is a lost opportunity for public support given that many uncertain American consumers would then make sound choices that would benefit US aquaculture farmers and the US economy. Until the facts are known, development of our own resources will be slow and more US dollars will continue to be sent overseas buying foreign products. Therefore, as we move towards the greater use of the offshore environment I strongly urge you to include the US Department of Commerce Policy on Aquaculture in *Recommendations* for development of public education and outreach programs.

Yours truly,
Virginia Enos
Vice President

[1] Review of "Global Assessment of Organic Contaminants in Farmed Salmon", Science 2004. by Charles R. Santerre, PhD; Associate Professor, Foods and Nutrition, Purdue University; santerre@purdue.edu; 765/496-3443

Comment Submitted by Tracie Letterman, Center for Food Safety

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June 1, 2004

Public Comment on Preliminary Report
U.S. Commission on Ocean Policy
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Dear U.S. Commissioners:

The Center for Food Safety (CFS) is pleased to submit these comments in response to the U.S. Commission on Ocean Policy's (USCOP) Preliminary Report. CFS is a 501(c)(3), non-profit membership organization working to protect human health and the environment by curbing the proliferation of harmful food production technologies and by promoting organic and other forms of sustainable agriculture. These comments will primarily focus on the sections of the reports discussing aquaculture.

AQUACULTURE

The USCOP Report states in the beginning of the Marine Aquaculture section that "[n]ational management of marine aquaculture activities should minimize potential environmental impacts."[2] The harmful environmental impacts caused by aquaculture are pointed out within the report and include:

- spread of disease among fish populations
- genetic contamination and competition between farmed (non-native and genetically modified) and native stocks[3]
- contamination of water quality, wetlands, and other natural habitats from aquaculture operation (contaminates include fish waste, dead fish, uneaten food, and the antibiotics and hormones used to promote growth in captivity)
- entangled marine mammals, attracted by the food source, in aquaculture nets
- pressure on wild fisheries that are already fully exploited for obtaining fishmeal used to farm-raised carnivorous fish. [4]

[2] U.S. Commission On Ocean Policy, Preliminary Report 269 (Apr. 20, 2004).
[3] See id. at 199 (discussing the problems with invasive species).

In addition to highlighting the environmental impacts caused by aquaculture, the USCOP Commissioners outline the different federal agency roles over aquaculture.[5] This discussion demonstrates the complex and uncoordinated authority of the federal agencies over aquaculture. Due to the inconsistent laws and regulations, the Commission recommends a coordinated and consistent policy and regulatory framework for offshore aquaculture.[6]

Although the Commission focuses on remedying the uncoordinated federal agency roles over offshore aquaculture, the report fails to give any guidance on specifically preventing environmental harm. Instead of addressing the prevention of environmental harm from aquaculture facilities, the Commission broadly recommends giving NOAA authority to implement a national policy. Within this policy, the Commission recommends streamlining the permit process. Rather than recommending the creation of stringent environmental regulations, the Commission states that economics and environmental issues should be balanced and proposes industry favored best management practices in the place of environmental regulations. [7]

Recommendations

CFS is concerned that these recommendations will not prevent environmental harm and thus recommends the following changes to the preliminary USCOP Report. Recommendation 22-2 should be changed to the following:

Moratorium on commercial offshore aquaculture until legislation and NOAA's new Office of Sustainable Marine Aquaculture is established and environmentally sound regulatory standards are in place.

Environmental standards should be included in the Offshore Aquaculture Legislation.[8] These standards should include:

- An environmental impact statement shall be done before any permit is issued. The environmental review shall consider chemical and biological pollutants and their affects on the benthic environment, water column and the organisms that inhabit them. The environmental review shall also assess impacts to marine mammals, endangered species, and birds.

- Permits will only be issued if it can be shown that the facility, either alone or in combination with other aquaculture facilities, will not significantly harm the health, integrity, or productivity of a marine ecosystem or impede its restoration

- In the case of inconclusive information regarding the effects of the aquaculture site, federal agencies shall err on the side of protection, maintenance, and restoration of the ecosystem.

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[4] Id. at 269.
[5] Id. at 272.
[6] Id.
[7] Id. at 273
[8] Due to the serious environmental problems posed by offshore aquaculture, environmental standards should be included within legislation rather than deferring this responsibility to NOAA. See eg. Endangered Species Act, 16 U.S.C. § 1531-1544. In order to implement these environmental legislative standards, NOAA should conduct a rulemaking and draft detailed rules.

- Aquaculture facilities should not be sited in a marine protected area (as defined under Executive Order 1358)

- No nonnative or genetically engineered fish shall be grown in offshore aquaculture facilities. Farmed fish shall be tagged.

- The terms and conditions of permits shall be part of a transparent public notice and comment process

- A permit must specify the number of fish to be grown at the site.

- If damage to the ecosystem occurs as a result of the aquaculture facility, the owner shall be responsible for all restoration costs.

- Detailed records must be kept on all drugs, chemicals and antibiotics used in an aquaculture facility, including the amounts used and applied. Only drugs approved by the Food and Drug Administration shall be permitted. Drug and chemical records shall be available to the public.

- It is mandatory for each facility to report to NOAA any outbreaks of disease, escapes of farmed fish (including the number escaped), and entanglement or interactions with marine mammals or endangered species.

- Continuous monitoring of disease shall occur and the facilities shall be closed when contagious outbreaks occur

- Each permit must contain a bonding provision to ensure that if aquaculture facilities are abandoned, the site is returned to its original state

- Substantial fines shall be imposed for violations of permit conditions

- There shall be periodic monitoring of dissolved oxygen, carbon dioxide, ammonia and other water quality parameters in and around aquaculture facilities and criteria shall be established by EPA for preventing migrating pollution levels.

- NOAA shall inspect facilities yearly. These reports shall be available for public review.

- These requirements do not eclipse the authority of other agencies. EPA retains jurisdiction under the Clean Water Act in the EEZ. No aquaculture facility shall receive a permit without first receiving a National Pollution Discharge Elimination System permit and meeting EPA's Ocean Discharge Criteria requirements.

It is critical that these standards are adopted into legislation. As recognized by the Commission, there are numerous environmental threats posed by aquaculture. To prevent these impacts from occurring, strong environmental standards must be adopted within the offshore aquaculture legislation.

CONTAMINATED SEAFOOD

The Commissioners also outline the serious human health problems with the farmed seafood that is imported into this country. The U.S. imports the majority of its seafood yet only about two percent of this is inspected.[9] The problem with this approach is that the countries where this seafood is imported from do not have the rigorous human health safety standards as the U.S. To compound this problem, the U.S. tests for only five chemicals out of the more than thirty used in foreign aquaculture.[10] As a result of the fundamentally flawed inspection program, it must be assumed that contaminated seafood is coming into this country. While other countries test for banned drugs and chemicals such as malachite green (fungicide) and oxytetracycline (antibiotic), the U.S. does not test for these chemicals in salmon.[11]

Although the Commissioners recognize the serious human health risks with imported farmed fish, the Commissioners fail to make any recommendations on how to alleviate this problem. Because it is likely that people are consuming imported seafood that contain drugs and chemicals that are not approved by the FDA, CFS is concerned that this problem is not being addressed by the Commissioners.

Recommendations

To protect the health of seafood consumers, CFS recommends that the Commissioners direct FDA to do the following:

- FDA should inspect more seafood imported into the country, beginning with the inspection of at least 50 percent.
- FDA should test for more drugs and chemicals in seafood, at least as many as are tested in the other countries, such as the U.K.
- FDA should aggressively conduct research in order to develop the tests needed to screen for all the drugs used in foreign aquaculture

CONCLUSION

CFS is concerned about the safety of our seafood and the impacts of aquaculture on the environment. CFS encourages the Commissioners to incorporate these recommendations into the final report.

Sincerely,

Tracie Letterman
Fish Program Director

[9] Id. at 283.
[10] Id.
[11] Id.

Comment Submitted by Robin Downey, U.S. Pacific Coast Shellfish Growers Association

These comments have been prepared on behalf of U.S. Pacific Coast shellfish growers, as many of the recommendations in the U.S. Commission report bear directly on the shellfish aquaculture industry. The Pacific Coast Shellfish Growers Association, which represents the interests of shellfish farmers on the U.S. West Coast, has prepared comments on these recommendations. We respectfully request that you give our comments due consideration and incorporate them into your response to the Commission.

The shellfish aquaculture industry in Washington is significant. We are the largest producer of farmed molluscan shellfish in the U.S. with an annual farm-gate value of $76 million and growing. Our industry provides family-wage jobs in rural communities while also bringing critical "new" dollars into these areas. At the same time, our farmers work diligently to protect the health and well being of the sensitive marine areas in which they work. Given their dependence on the health of the marine ecosystem to produce their crops, they have a significant vested interest in maintaining and protecting these areas.

The shellfish aquaculture industry is unique, in that our economic health is directly tied to environmental health. Water quality degradation poses the greatest threat to the shellfish industry on the West Coast, but we are also facing serious challenges from an inadequate infrastructure at the federal and state levels that creates an uneven playing field in today's international marketplace. There is currently a $7 billion federal seafood trade deficit. This deficit is second only to oil! Were appropriate support systems in place, the U.S. West Coast, and Washington in particular, is in a unique position to help offset this deficit.

The comments provided below are a synthesis of the various categories of issues found throughout the Commission recommendations.

Aquaculture in the Exclusive Economic Zone
Chapter 22 suggests that future marine aquaculture development be limited to the Exclusive Economic Zone where user conflicts and impacts can be minimized. Many of the states have vibrant, sustainable and environmentally responsible aquaculture industries currently located in nearshore waters. These industries are invaluable to rural coastal economies harmed by the declines in wild fishery resources. With appropriate research and development support and facilitation for comprehensive aquaculture planning under the CZMA these industries can continue to thrive and expand. They are far better positioned to contribute to the immediate expansion of aquaculture production in the U.S. than offshore where the technology and permitting by in large have yet to be developed. Key to the survival of this nearshore aquaculture, particularly the shellfish industry, is implementing all of the recommendations contained in Chapter 14 regarding protecting and improving water quality.

Nonpoint source pollution:
Nonpoint pollution is insidious and one of the greatest threats facing the shellfish industry. The problems occurring right now in Hood Canal stand as a prime example of the effect of failing to control nonpoint pollution. Among the recommendations found in the Report is strengthening the ability of local watershed groups to address problems by providing them with adequate technical and financial support. On-the-ground local efforts, supported at every level, will be key to protecting and restoring this critical

habitat. There is merit in the concept of combining the efforts of the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration in their respective jurisdictions over the Clean Water Act and the Coastal Zone Management Act to form a more cohesive, comprehensive approach to the nonpoint pollution problem. We also agree with the imposition of financial disincentives to motivate meaningful progress toward meeting existing water quality standards. *(Recommendations 14-9, 14-10, 14-8, 14-13)*

Upland wastewater:
Local communities need increased technical and financial assistance to improve septic, stormwater and treatment systems; and building codes, zoning ordinances and enforcement for stormwater and septic systems must be strengthened.
(Recommendations 14-1, 14-2, 14-3,14-4, 14-6, 14-11, 14-12)

Marine vessel wastewater discharges:
Uniform discharge standards and waste management procedures, combined with incentives for industry investment in treatment technologies and support for building more pump-out facilities are tangible ways to deal with these sources of pollution. Consolidating the Clean Vessel Act grant program to the EPA should be considered if it will result in administrative cost savings and a more comprehensive and effective program.
(Recommendations 16-5, 16-7, 16-8)

Oil spill prevention:
Shellfish growing areas should be included in any risk-based analysis for oil spill prevention.
(Recommendations 16-12)

Aquatic Nuisance Species:
Several recommendations on ballast water and Aquatic Nuisance Species management are found in the report. The existing Aquatic Nuisance Species Task Force should be reauthorized, with inclusion of both NOAA and the USDA. Efforts should be coordinated with the new Ocean Council, but redundant and duplicative efforts should be avoided.
(Recommendations 17-2, 17-3, 17-5)

Ecosystem-based/Coordinated Management:
Several recommendations throughout the Report have to do with more coordination among and oversight of the various agencies that currently have jurisdiction over marine resources, including the establishment of a new National Ocean Policy and Presidential Council of Advisors, and a reorganization of the federal government to develop a more unified, ecosystem based management approach. In theory, this is a sound concept. Functions should be collapsed where possible and coordinated more efficiently, but caution should be exercised in establishing even more layers of bureaucracy.
(Recommendations 7-5, 4-3, 4-10, 9-3)

Coordinated Support for the Aquaculture Industry/Research and Development:
Several recommendations in the Commission report are related to implementing a national policy for expanding “environmentally and economically sustainable marine aquaculture.” The PCSGA fully concurs. The U.S. Department of Commerce goal to expand aquaculture five-fold by 2025 will never be realized without a coordinated policy, including a reasonable, logical permitting and regulatory environment. This goal will not be met without an in tandem infusion of financial support into research and development.

Funding and expanding regionally-based cooperative research programs in NOAA and collaborative projects among scientists and the seafood industry is absolutely critical. *(Recommendatiosn 19-12, 22-1, 22-3, 23-4, 24-1, 25-1, 22-2)*

Industry Representation on Advisory Bodies:
Too often, decisions that directly affect the shellfish industry are being made in a vacuum with no input from growers. The report recommends that at least two representatives from the commercial fishing industry be included on the Regional Fishery Management Council. PCSGA recommends one of these seats be filled by a representative from the (shellfish) aquaculture industry.
(Recommendation 19-12, 4-10)

On behalf of Washington's shellfish industry, thank you for your consideration of these important issues. If we can provide you with any additional information, please contact Robin Downey, PCSGA Executive Director, at 360-754-2744.

Comment Submitted by Richard Langan,
Cooperative Institute for New England Mariculture and Fisheries
University of New Hampshire

Dear Commissioners and Staff;

I have had several opportunities to contribute comments on the Preliminary Report through Institutions and Associations with which I am affiliated, so my individual comments will be brief and to the point.

The first is a request for a correction

In Chapter 22, page 271, paragraph one under "Marine Aquaculture in Offshore Areas", the last sentence refers to "federally sponsored experiments off the coasts of Massachusetts and Hawaii." The New England project is off the coast of New Hampshire, not Massachusetts. This project is being conducted by the Cooperative Institute for New England Mariculture and Fisheries' Open Ocean Aquaculture Demonstration Project at the University of New Hampshire.

Regarding Recommendation 22-3, it should be recognized that the establishment of regional centers for technology development, technology transfer and training established and managed in partnership with NOAA would be an effective means of insuring environmentally responsible development of offshore aquaculture.
NOAA proposed this several years ago, however, the idea was never fully implemented. There are currently three hubs of activity in offshore aquaculture that include the University of New Hampshire, University of Hawaii and University of Miami in Florida and the Caribbean. One other location seeking to establish an offshore project is California (through Hubbs Sea World Reseach Institute). These projects should be federally funded for long term research and technology development.

Thank you for the opportunity to provide individual coimment.

Regards

Richard Langan, Ph.D.
Director, Cooperative Institute for New England Mariculture and Fisheries
University of New Hampshire Durham, NH

Comment Submitted by L. Neil Frazer, University of Hawaii at Manoa

Suggested Changes to Chapter 22
Preliminary Report of the US Commission on Ocean Policy

L. Neil Frazer, Professor
School of Ocean and Earth Science and Technology
University of Hawaii at Manoa
Honolulu, HI

Suggestion 1:

In Chapter 22, the following paragraph and recommendation should be appended to the Section entitled ***Adressing Environmental Impacts of Aquaculture:***

Concern is growing among scientists that seacage farming of finfish is fundamentally flawed because seacages exclude predators while admitting parasites and pathogens. Wild fish are a constant source of novel infections for farm fish, and farm fish act as a culture for infections because they are not subject to predation. When an infection of farm fish approaches epidemic status, research is undertaken to develop vaccines, but the development time for a new vaccine is roughly six years. Seacage aquaculture is fundamentally different from culture of terrestrial animals in this respect because it is not possible to segregate wild fish from farm fish in a way that prevents disease transmission except through use of closed containment facilities in which input and output waters are treated to remove infections. As closed containment facilities are expensive it is urgent that research funds be directed as soon as possible toward *open ecosystem aquaculture* (OEA) in which multiple trophic levels, including predators, are cultured and harvested without the use of cages and exogenous fish-based feeds.

Recommendation 22-0 Seventy-five percent of all federal research funds for marine finfish aquaculture should be allocated to open ecosystem aquaculture and closed loop aquaculture.

Suggestion 2:

Use of the word *sustainable,* except to specifically describe a goal, represents a kind of wishful thinking that is inappropriate in a scientific document, and all instances of the word should be removed from Chapter 22. Seacage farming, in particular, has not been demonstrated to be sustainable, in the sense of being harmless to wild fish, and there are sound biological reasons to expect that it will not be sustainable.

Comment Submitted by Michael F. McMaster,
Mariculture Technologies International, Inc.

Dear Commission:

I am a thirty year participant in the private mariculture business in Florida. At present my company operates a small marine fish hatchery and brine shrimp farm. Presently, I have pompano fry in the hatchery and no where to grow them out to food size fish. This country cannot have a mariculture industry capable of supplementing seafood supplies without the industry having the equal right to use the coastal ocean zones as other stakeholders enjoy. Our industry must have the right to place both floating and submerged sea cages within sight of land or at least close enough to land as to make cage servicing practical. With the exception of salmon, this country is one of the few that do not have any sea cage mariculture operations near it's shores and that fact must change if we are to increase seafood supply to our citizens.

Regards,

Michael F. McMaster
Mariculture Technologies International, Inc.
Oak Hill, Florida