

## **Mollusc Aquaculture Dialogue Discussion**

North Carolina Aquaculture Development Conference, Atlantic Beach, North Carolina  
19 January 2008

The meeting, which was the second in a series of re-initiated Mollusc Aquaculture Dialogue sessions, began with an introductory presentation by World Wildlife Fund (WWF) Aquaculture Program Officer Colin Brannen. During his presentation, Colin outlined WWF's general aquaculture strategy and gave a brief overview of the progress that was made at previous dialogue meetings. Key impacts, goals and objectives, and principles for standards development were introduced to the participants. The goal of the meeting was to discuss the draft principles and to begin making headway on the creation of criteria; specific areas to focus on in order reduce the key effects of mollusc aquaculture.

The principles developed at the dialogue meeting in Oregon in October 2007 were presented as followed:

**Principle 1:** Obey the law and comply with all national and local regulations.

**Principle 2:** Conserve natural habitat and local biodiversity.

**Principle 3:** Protect the health and genetic integrity of wild populations.

**Principle 4:** Manage disease and pests in an environmentally responsible manner.

**Principle 5:** Use resources efficiently.

**Principle 6:** Be a good neighbor and conscientious coastal citizen.

### Criteria

- Escaped gear and waste materials
- Aesthetic impacts
- Positive community engagement

**Principle 7:** Continually improve practices over time.

**Principle 8:** Develop and operate farms in a socially responsible manner.

### Criteria

- Working conditions
- Worker training
- Professional development

Participants were then asked for questions and comments on the draft documents.

- It was discussed that the most difficult issue would probably be defining Principle 6 “Be a good neighbor and conscientious coastal citizen”. Because of the nature of shellfish farming, people didn’t see satisfying the environmental principles (Principles 1-5) quite as difficult. Some concern was expressed over working with environmental groups who some felt had misperceptions of shellfish aquaculture.
- There was discussion of frustration over the NIMBY issue again, particularly as many felt large coastal homes and related development issues were contributing much more significantly to the degradation of the local waterways through sewage, run-off, and habitat modification. It was suggested that such homeowners be required to show the impact of their house vs. the impact of a shellfish farm—then it could be decided which use has more of a right to exist in an area.
- An anecdote regarding people’s increasing willingness to co-exist and even support shellfish culture was told. It was claimed that, more and more, people were willing to deliver shells to oyster beds because they felt it was the right thing to do. All of the pitches about the positive impact of what oysters do for the environment seemed to be catching on a little.
- Some didn’t see an end to the neighbor issue, both in terms of degrading water quality from development and NIMBY and suggested that the government should play a role by establishing long-term comprehensive shellfish farming plans. There was a brief discussion over whether “positively engaging in the regulatory process” could be a metric for looking at “Principle 6”
- The question of whether or not the dialogue process could address water quality problems as the population moves closer to the shore was asked. This was discussed and it was reiterated that this type of issue is not what the dialogues are about—that that issue was more of a state regulation issue. More frustration was expressed over the fact that water quality is decreasing due to development and shellfish aquaculture is being limited/pushed even further away. Participants from the Pacific Northwest region explained the concept of shellfish protection districts that help deal with excessive sewage draining.

The conversation was then re-directed to look specifically at principles and discuss possible criteria for them. Again it was reiterated that the biggest challenge for shellfish farmers was probably going to be addressing the aesthetic impacts.

### **Principle 1:**

It was discussed that documentation could be a good criterion but it was pointed out that in the US everyone has to follow these rules so it doesn't necessarily mean all that much.

## **Principle 2:**

More difficulty in dealing with Principle 2—terms like “natural habitat” and “local biodiversity” are nebulous. For instance biodiversity definitely increases around these artificial reefs but who/how do you pay to certify that? Can we find a model that already looks at this? Also some argue that the reefs serve as fish aggregating devices (FAD's) but not as habitat (where fish eat and breed).

It was suggested that the word “function” be added after “natural habitat”

### *Discussion of possible criteria to use for Principle 2*

The use of Eelgrass and SAV was a sticky point particularly because of the way many states regulate the use of “productive bottoms” as defined by eel grass beds. It could be complicated as areas go back and forth in terms of eelgrass coverage-- which many suspect is more related to burgeoning land-based housing development. Plus SAV is an unclear term—it's not quite consistent what a SAV “area” is composed of.

Carrying Capacity—biomass/acre—Are there inexpensive ways to model this?

- Look at phytoplankton concentrations?

- Benthic oxygen conditions against baseline levels—however, there is so much variation on this and in many areas in the summertime waters are naturally hypoxic. How would such a criterion be implemented without great cost and individual site research?

- Looking at total sediment organic material

- Biomass of resident organisms/Biodiversity of resident organisms - how to measure in a way that is feasible economically?—very expensive to do surveys. Someone suggested looking into reef program for ideas on a way to do this.

Look at other impacts of culture—for instance the impacts of harvesting. Studies need to be done to determine the impacts of dredging on biomass and biodiversity.

Look at total wet weight biomass—it was suggested that this might be an easy way to measure the impact of farming on the environment.

Subjective comparisons to reference areas as a rough proxy for determining impact on habitat and local biodiversity was suggested as a possible measurement.

## **Principle 3**

*Discussion of possible criteria to use for Principle 3*

Good management Practices, including disease management and seed/ broodstock procurement

How to deal with introduced species?

**In the interest of time, the group skipped ahead to compile some thoughts on Principle 6.**

Visual Impact Assessment process/ methodology that is used in the Pacific NW was briefly discussed.

There was discussion of what is “reasonable” and acceptable—for instance gear should be “neat”, un-used gear should be removed from the site and racks and buoys should be organized. There was general acknowledgement that all of these things were really important but also frustratingly subjective.

There was also discussion over what “standardized marking” really should be as it seemed to vary in different areas. Many expressed frustration over people saying marker buoys were too visible while others said buoys failed to clearly warn boats of navigational hazards.

Noise and Light were also discussed. Experience in the Pacific Northwest showed that in addition to visual impacts, they had also developed an informal code of practice with employees who work during the winter night tides to minimize sounds and light that might be disruptive to neighbors.

In wrapping up the session, Colin gave an overview of what lies ahead for the Dialogue. The criteria discussed at this meeting would be built upon and used to create actual indicators at upcoming dialogue meetings. Colin announced that two more meetings were planned for 2008; February 11<sup>th</sup> in Orlando, Florida and April 8<sup>th</sup> in Providence, Rhode Island with preliminary plans to go back to the West Coast in the summer or fall.

**List of Participants**

<b>First Name</b>	<b>Last Name</b>	<b>Affiliation</b>
Colin	Brannen	World Wildlife Fund
Merrielle	Macleod	World Wildlife Fund
Don	Freeman	NCSGA

Greg	McCoy	Carteret Community College
Cindy	McCoy	Carteret Community College
Chris	Elkins	University of North Carolina
Jim	Swartzenberg	NCSGA
Mark	Hooper	Hooper Family Seafood
Duncan	Dawkins	Carteret Community College
Jack	Spruill	Pender Watch & Conservancy
Jay	Styron	NCSGA
Jennifer	Dorton	Carolina Mariculture Co.
Chris	Trainer	Frank Crystal & Co.
Seth	Shapiro	Frank Crystal & Co.
Kathy	Rhodes	ECSGA
Ed	Rhodes	ECSGA
Gef	Flimlin	Rutgers University
Bob	Rheault	ECSGA
John	Kraeuter	Rutgers University & East Coast Shellfish Research Institute
Kari	Rapine	Cherrystone Aqua Farms
Tara	Riley	Cherrystone Aqua Farms
Dick	Loring	ECSGA
Marc	Turano	NC Sea Grant
Skip	Kemp	Carteret Community College/NCSGA
Bob	Walton	Best Environmental Systems
Richard	Farris	
Bill	Dewey	Taylor Shellfish

Joanne	Harcke	NC Aquarium
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