

## **National Organic Standards Board Wild Aquatic Species Working Group Final Report**

### **Wild Aquatic Species Working Group**

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- Carolyn Brickey, National Organic Standards Board, Phoenix, Arizona.
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- Chris Dorsett, Gulf Restoration Project, New Orleans, Louisiana.
- David Gould, organic certification consultant, Portland, Oregon.
- Zeke Grader, Pacific Coast Federation of Fisherman's Associations, San Francisco, California.
- Jim Humphreys, Marine Stewardship Council, Seattle, Washington.
- Steve Harper, National Organic Standards Board, Small Planet Foods, Sedro Woolley, Washington.
- Jan Konigsberg, Alaska Salmonid Biodiversity Program, Trout Unlimited, Anchorage, Alaska.
- Willie Lockeretz, National Organic Standards Board, Tufts University, Brookline, Massachusetts.
- John Pappalardo, Cape Cod Commercial Hook Fishermen's Association, Chatham, Massachusetts.
- Paul Peyton, independent fisheries consultant, Juneau, Alaska.
- Jim Riddle, Independent Organic Inspectors Association, Winona, Minnesota.

### **Guiding questions of Wild Aquatic Species Working Group**

1. Whether organic principles and standards are suitable and appropriate for aquatic systems.
2. Whether organic principles and standards are suitable and appropriate for wild systems.
3. Whether organic certification and labeling is appropriate and suitable for wild aquatic species.
4. If it is determined that organic certification of wild aquatic species is an appropriate and suitable option, what are the standards for the labeling and certification of wild aquatic species.

## Introduction – courtesy of Jan Konigsberg

In the “debate” about the organic certification of seafood, there appear to be two dominant camps. At the risk of oversimplifying the points of view the two camps are:

1. Those who believe certifying seafood is a “no-brainer,” because they presume that, in most cases, fisheries are sustainably managed by competent government agencies and that, in most cases, marine fish are produced and captured in relatively pristine ecosystems—*precisely* the type of productive environment that traditional organic agriculture seeks to emulate.
2. Meanwhile, the spokespeople for traditional organic food production believe that it would be extremely difficult for seafood to meet the *sine qua non* of organic agriculture—exercising control over the entire production process, having comprehensive knowledge of the environment in which the food is produced, and proactively improving the environment in which production takes place.

One position would make organic certification of most marine fish a shoo-in, the other would make it virtually impossible.

In September 2000, the National Organic Standards Board (NOSB) established a Wild Aquatic Species Working Group to discuss and report on whether organic standards are suitable or appropriate for wild aquatic systems. The group held two conference calls during the fall of 2000 to discuss the issues of organic standards for wild aquatic systems. Fundamentally, the group disagreed about whether organic is an appropriate or suitable term to be used for aquatic systems. This report summarizes the issues and positions of the participants.

## Summary

### Legal

- The Organic Food Production Act (OFPA) is ambiguous about whether wild fish are included under the act. Some members feel that the act provides the statutory authority for providing standards for wild organic fish. Other working group members believe that the statute would need to be amended in order to include wild fish under the OFPA.

### Organic labeling of wild fish

- The development of a label to describe sustainably managed wild aquatic organisms would serve the interests of consumers by providing information concerning market choices.
- The organic label may or may not be the best label term to use for wild aquatic organisms.
- The positive attributes of using the term organic for wild aquatic organisms are 1) market recognition (the organic label is recognized and has value in the marketplace), 2) wild systems are inherently “organic” and 3) an existing regulatory structure under the National Organic Program.
- The negative attributes of using the term “organic” for wild aquatic organisms are 1) consumer confusion over the meaning of wild organic fish, 2) organic standards are

land-based and are not suitable for aquatic systems and 3) an existing regulatory structure under the National Organic Program.

- There is no clear consensus of whether organic standards should be extended to wild aquatic systems. Some working group members believe that organic agriculture is exclusively land based and excludes wild systems, others believe that organic includes wild land based systems and aquaculture but not wild aquatic systems, while others believe that organic systems should include wild aquatic species.
- The majority of the working group supported the concept of an organic continuum between farm-based terrestrial systems and wild aquatic systems. They supported the inclusion of wild aquatic species within organic standards.

#### Standards (If organic standards for wild aquatic species are developed)

- The Marine Stewardship Council standards are a good starting point to address the sustainable harvest part of wild organic aquatic standards.
- The fact that marine systems are publicly owned adds a level of complexity to the development of standards and the certification systems necessary to verify that the standards are implemented.
- Fishmeal and fish oil for organic aquaculture should be required to come from organic systems.
- Standards for biodiversity and the environmental health of the habitat need to be included in those standards.

## **Background**

Many organic certification agencies have developed organic standards for wild harvested crops. In the majority of cases, the organic standards are limited to wild land-based systems and include four primary requirements:

- 1) a designated harvest area,
- 2) no use (or application) of synthetic inputs (fertilizers, pesticides) for at least three years within the designated harvest area,
- 3) sustainable management of the crops and resources within the designated area, and
- 4) the crops are harvested in a manner that is not destructive to the environment.

There have been relatively few attempts to develop organic standards for wild aquatic organisms.

In 1998, two certifiers, Farm Verified Organic and Organic Growers and Buyers Association agreed to look into the possibility of developing standards for wild fish to be certified organic. Over the course of the next year, both of these organizations developed standards, conducted inspections and granted organic certification for two Alaskan fisheries, Capilano Pacific (FVO) and Copper River Salmon (OGBA).

At the National Organic Standards Board meeting in June 1999, the State of Alaska, along with a number of other parties, requested that the NOSB support organic standards for wild harvested fish. The State of Alaska gave a presentation that stated their belief that ocean-harvested seafood is intrinsically organic. Many members of the organic food industry were surprised and concerned about this development. Both the

Organic Trade Association and the Organic Certifiers Council have stated their opposition to the development of organic standards for wild fish.

Congress, however, has directed the USDA Agriculture Marketing Service to develop standards for the organic certification of wild fish. Therefore, in March, 2000 the National Organic Program held three public hearings and requested written comments concerning organic standards for aquaculture and wild harvested seafood. In September 2000, the NOSB created an Aquatic Animal Task Force with two working groups, one for aquaculture and one for wild aquatic species.

## **A consideration of the National Organic Program final rule**

The NOP final rule does not include standards for wild aquatic species. Here are some considerations when considering developing organic standards for wild aquatic species.

### **Subpart C – Organic Production and Handling Requirements.**

This subpart includes practice standards for soil fertility, crop nutrient management, seeds, crop rotation, pest management, and wild-crop harvesting. Practice standards may need to be developed for aquatic species feed, environmental health of the designated area, water management, and wild seafood harvesting.

#### **Section 205.200 General**

Specifies that organic production practices must maintain or improve the natural resources of the operation, including soil and water quality. This general condition would need to be addressed in the organic system plan for each wild aquatic species harvest operation.

#### **Organic System Plan for wild aquatic systems**

##### **Section 205.201 Organic production and handling system plan.**

This section requires all producers and handlers to have an organic system plan:

1. The plan must be written in a narrative or descriptive format that identifies the practices and procedures performed. Practices for wild aquatic systems could include the method for harvesting fish and minimizing bycatch.
2. The plan must include a list of all materials that will be applied to the land or within the handling facilities. This subsection would not apply to wild systems as no materials are applied.
3. The plan must include a description of the monitoring practices used to evaluate the effectiveness of the organic plan. Monitoring practices could include water tests to monitor effectiveness of the plan for maintaining or improving water quality; production objectives such as pounds of fish harvested; results of pesticide residue tests; or monitoring for other species to determine the maintenance of biodiversity.
4. The plan must include a description of the recordkeeping system.
5. Split operations must describe the management practices and physical barriers that have been established to prevent commingling or contamination of organic food products. Would wild aquatic operations be considered split operations if they are harvesting fish from an environment that includes non certified organic operations?
6. Certifying agents may require additional items to be included in the plan to determine an operation meets the organic requirements.

**Resources utilized by the working group**

- Written Comments submitted on AMS Docket Number TM-00-03 Organic Production and Handling of Aquatic Animals to be Labeled as Organic
- National Organic Program final rule
- Tame and Wild: Organic Agriculture and Wildness, David Gould and Fred Kirschenmann
- Farm Verified Organic's standards for sustainable wild harvest

**Attachments**

- Wild Aquatic Species Working Group Preliminary Report
- Organic continuum – from the mountains to the sea
- Wild Aquatic Animals Task Force, Paul Peyton's comments
- Conundrum of Organic Certification, Jan Konigsberg
- Comments from Zeke Grader
- Organic Aquaculture – Meeting Fundamental Requirements, Jim Riddle
- Principles and Criteria for Sustainable Fishing, Marine Stewardship Council
- Organic Standards for Wild Aquatic Animals, Paul Peyton draft

## **Wild Aquatic Species Working Group Preliminary Report**

Friday, November 17, 2000

**Members:** Miles McEvoy (chair), Paul Peyton, Carolyn Brickey, Steve Harper, Jim Humphreys, Jim Riddle, Chris Dorsett, Jan Konigsberg, John Pappalardo, Willie Lockeretz, David Gould, Katherine DiMatteo, Zeke Grader

### **Summary points:**

#### ***Legal***

- OFPA is ambiguous about whether wild fish are included under the act. Some members believe that act excludes wild fish while others believe that the act specifically includes wild fish.

#### ***Wild organic fish***

- Three members don't feel that the organic label is the best word to use to describe wild systems, whether land based or aquatic.
- One member believes organic agriculture is exclusively land based.
- One member believes that organic includes wild land based systems and aquaculture but not wild aquatic systems.
- Six members believe that organic systems should include wild aquatic species. They believe that there is a continuum between land based and aquatic systems as well as between farm based and wild based systems.

#### ***Standards***

- The Marine Stewardship Council standards are a good starting point to address the sustainable harvest part of wild organic aquatic standards.
- The fact that marine systems are publicly owned adds a level of complexity to the development of standards and the certification systems necessary to verify that the standards are implemented.
- Fishmeal and fish oil for organic aquaculture should be required to come from organic systems.
- Issues of biodiversity and the environmental health of the habitat will need to be explored in depth.

#### **Notes from November 6 conference call:**

1. **Is there a line between which systems can be described as organic and which systems are outside the boundaries of organic agriculture?**  
Can wild systems be organic?

Can aquatic systems be organic?

Is there a continuum between farm based terrestrial systems and wild aquatic systems?

Miles McEvoy - Miles discussed his thoughts on what types of food products should be labeled as organic. He stated that there appears to be a continuum of organic systems from highly managed organic farms to wild systems. The continuum goes from highly managed and high input organic row crop farms to low-input organic permaculture systems that try to imitate natural systems. There are highly managed organic poultry operations that rely on purchased organic feed and low-input range-fed organic cattle operations. There are cultivated organic rice systems and wild organic rice systems and organic sea vegetables. The question seems to be where do we draw the line between which systems can be considered organic and which ones cannot be considered organic. Is the line between terrestrial and aquatic systems or between wild and managed systems, or is there no line at all.

Miles proposed that there is no clear line to draw, that we have a continuum of systems and that organic systems could relate to all types of systems, both wild and domesticated, both aquatic and terrestrial.

Paul Peyton – Paul believes that organic systems include wild aquatic systems. Paul referenced the paper he submitted (attached). Paul believes wild, uncontaminated systems are inherently organic and are organic by design not neglect.

Steve Harper – Steve stated that he thought that wild systems, aquatic systems and wild aquatic systems could all be appropriate for organic. He does not see a clear, firm line between those systems that can be described as organic and those that cannot be described as organic

Jim Humphreys – He thinks that there is nothing inherent in wild aquatic systems that would make them outside the scope of organic agriculture.

Jim Riddle – Jim stated that he thought that wild, land based systems could fit into the organic system because they meet the conditions of the OFPA. Those criteria include a designated area from which wild crops are harvested, no applications of prohibited materials for three years, and a sustainable harvest that does not damage the environment. Jim mentioned that he thought that aquaculture systems could meet the organic label because they have a designated area and can meet the other conditions of the OFPA.

Chris Dorsett – Chris feels that a sustainable label would be more appropriate for wild fish than the organic label. He does not feel that wild systems are appropriate within organic agriculture standards.

Jan Konigsberg – He believes that wild fish are not excluded from the OFPA. He believes that the OFPA would need to be amended to exclude wild fish from the organic standards. He feels that there are both economic and philosophical factors involved in people's opinions on this matter. He believes that there many problems in wild fish systems such as habitat destruction, biodiversity, and quality. He feels that organic agriculture has a higher level of credibility in regards to food quality and environmental quality than wild fish.

Willie Lockeretz – Land based systems are the only systems that fit organic systems. Organic agriculture is based on nature farming, utilizing mixed crops, protecting the soil from erosion, soil fertility. He can only picture aquatic systems if they are coupled with land based farm systems (e.g. on-farm ponds). He could accept some level of wild harvest land based crops.

Carolyn Brickey – Carolyn supported the comments of Jan Konigsberg. She feels that the OFPA is ambiguous on wild aquatic species and that she could defend both sides of a legal argument. She feels that at this point wild aquatic species should not be excluded, that the question is not whether the systems are managed but who is managing the systems.

John Pappalardo – John is not sure whether organic is appropriate for wild aquatic systems. He questions whether the organic label is the ultimate or best designation, that maybe wild is a better term to use. He isn't sure whether wild fish fit under the OFPA. He thinks that investigating a separate set of principles and standards for wild aquatic species may be the way to go. At the end, he is a fence sitter that could go either way on whether the organic label is appropriate for wild aquatic systems.

## **2. If there are wild organic aquatic standards, what are the standards?**

Feed – Do we follow the aquaculture groups recommendations that feed from sustainably managed resources would be allowed?

Sustainable Harvest – Are the Marine Stewardship Council's standards appropriate for organic standards?

No application of prohibited materials – Are natural environments where there is no intentional application of pesticides or prohibited materials analogous to a terrestrial system that has no prohibited materials directly applied to a farm?

Biodiversity - No hatchery fish?

Paul Peyton – Natural wild feed should be considered organic. The Marine Stewardship Council standards are a good start to address the sustainable harvest conditions. He noted that the salmon certified to date were species by species, area by area rather than a statewide blanket certification, The issue of the application of prohibited materials to the spawning, feeding and harvesting areas can be managed.

Steve Harper – Wild systems with the right standards can fit the organic system.

Jim Humphreys – He tends to agree with Paul and Steve. He thinks that there is a way in which it could be done. The issue of standards for sustainable harvest – MSC has an international sustainable fishing standard. There are three components – 1) A healthy status of fish stocks, 2) the impact of fishery on the ecosystem and the maintenance of healthy ecosystem, and 3) the effectiveness of the fishery management system.

The MSC standards were developed to address the issue of sustainability. They were not developed to address food safety, food purity, or contaminant issues. The MSC standards could be used as a model or methodology for the sustainability portion of a wild organic fish standard.

The qualifications of the people doing the certification are critical. Marine systems are substantially different from land based agricultural systems. Organic certification agencies do not have the necessary expertise in marine systems.

Jim Riddle – He doesn't have a vested interest. He likes the MSC system but feels it is appropriate for a separate label and doesn't fit organic. He sees wild sustainable standards and procedures as parallel to organic, but not organic, and it would be inappropriate to call such systems organic.

Chris Dorsett – It appears that the MSC standards should be relevant for the sustainable harvest portion.

Jan Konigsberg – We need a different frame of reference for the organic standards that includes habitat and the health of the ecosystem. Biodiversity issues should be included as a component of the sustainable harvest. Marine systems are fundamentally different from land based systems because of the ownership and management of the resource. Organic farms are almost exclusively privately owned. Wild aquatic systems are publicly owned resources, common property fisheries. Who oversees standards? Can a non-governmental organization oversee the management of a publicly owned system? It is a government oversight responsibility. Who are we certifying? MSC certifies the fishery manager, the agency that does the management. The certification will need to broaden the agencies involved. It is an interjurisdictional problem. MSC is looking only at the state fish and game department. Will the organic standards be applied on other agencies? What is an acceptable quality level for the fish habitat? Will it be more stringent than state or federal standards? Is the habitat managed for food/fish production or to protect the environment? How are we going to define biodiversity for marine systems?

Willie Lockeretz - Willie referred to a point made earlier that it would be inconsistent not to allow wild fish for human consumption to be labeled organic if we were allowing the inedible portions of those fish to count as organic feed. He agreed, but favored resolving the inconsistency by allowing neither, rather than by allowing both.

CB – What agencies are managing these systems? This will be very difficult to oversee.

### **3. Next steps**

Miles McEvoy – A summary of the discussion will be presented to the NOSB on November 17. The summary will include working group member's submissions (Paul Peyton, David Gould, Jim Riddle, and Jan Konigsberg). The next steps for the working group will be to discuss and develop positions on the standards for the organic certification of wild aquatic species.

Willie Lockeretz – We need a resolution from a higher authority (NOSB or USDA) on whether there will be wild organic standards before we put more energy into this. Should this be done? Willie is concerned that if we start to discuss what the standards should be then the question of whether we have standards or not is no longer the question. If we start to discuss the standards than it becomes inevitable that wild organic fish standards are a reality.

Carolyn Brickey – We need to discuss the standards in order to fully understand and analyze the issues and in order to make complete recommendations.

Mountains

Summer  
pasture  
for  
sheep, cattle

From the Mountains to the Sea

Woods  
(St. Johnswort, chanterelles,  
Morels)

Fireweed

Paradise Creek

Farm pond

lemon  
grass

On-farm  
processing

Beehives  
ooo

Trout

Mushroom  
growing facility

Greenhouse

Mussels

Orchard

Row  
Crops

Oysters

Pasture

Halibut

Salmon  
spawning

Geoducks

Salmon

**Is there a continuum between farm based terrestrial systems and wild aquatic systems?**

	<b>Plants</b>	<b>Animals</b>
Terrestrial, domesticated and on-farm	Broccoli, Apples, Potatoes, Hay	Pigs, Dairy Cows, Poultry
Terrestrial, domesticated and utilize non-crop lands (wild land)		Honey Bees, Range Fed Cattle, Sheep
Terrestrial, wild and utilize non-crop land (wild land)	St. Johnswort, Blueberries, Morels, Sugar Maple	Wild Honey Bees, Deer, Elk
Aquatic, domesticated and on-farm		Oysters, Aquaculture Fish
Aquatic, wild and stay in one area	Spirulina, Wild Rice, Sea Vegetables	Geoducks, Halibut
Aquatic, wild and migrate		Salmon

## Distinctions between land-based and aquatic systems

	Land-based system	Aquatic system
<b>1. Medium</b>	Soil based	Water based
<b>2. Nature of medium</b>	Soil more or less stays put	Water can be relatively static - farm ponds, lakes or quite dynamic - tidal estuaries, rivers, oceans
<b>3. Ownership</b>	Mostly privately owned	Mostly publicly owned
<b>4. Management</b>	Mostly cultivated and domesticated crops	Non-aquaculture systems dominate production.

## Land-based and aquatic systems - Analogous comparisons

	Land-based system	Aquatic system
<b>1. Potential contamination from local sources</b>	Surrounding farms may cause pesticide spray drift	Boats traveling through harvest area may dump prohibited materials
Verification system	Buffer zones and pesticide residue testing	Buffer zones, residue testing, water quality monitoring?
<b>2. Potential contamination from previous practices</b>	Past farming practices may cause chlorinated hydrocarbon residues	Past human practices may cause contaminated areas
Verification system	Farm history and residue testing	Testing?
<b>3. Potential contamination from regional sources</b>	Example: Industrial smelters, Asphalt plants may cause residues of lead, arsenic or other contaminants	Oil spills, industrial or municipal sites may cause residues or contaminated watersheds
<b>4. Non-organic production</b>	Conventional farms	Drift nets, bycatch, overharvesting, destruction of habitat

## Conundrum of Organic Certification Jan Konigsberg

In the “debate” about the organic certification of seafood, there appear to be two dominant camps. At the risk of oversimplifying the points of view: There are those who believe certifying seafood is a “no-brainer,” because they presume that, in most cases, fisheries are sustainably managed by competent government agencies and that, in most cases, marine fish are produced and captured in relatively pristine ecosystems—*precisely* the type of productive environment that traditional organic agriculture seeks to emulate. Meanwhile, the spokespeople for traditional organic food production believe that it would be extremely difficult for seafood to meet the *sine qua non* of organic agriculture—exercising control over the entire production process, having comprehensive knowledge of the environment in which the food is produced, and proactively improving the environment in which production takes place. One position would make organic certification of most marine fish a shoo-in, the other would make it virtually impossible.

Indeed, if the “producers” of seafood are required to know where the fish they have captured have been throughout their life-cycle, then organic certification of many marine fish species, especially migratory species such as salmon, will be virtually impossible. Yet, if the statute permits organic certification of fish taken from the sea, then it either intends to exclude all those marine fish whose whereabouts at sea are unknown, or if not, then other criteria must suffice to certify these fish as organic.

For the purpose of discussion, let’s assume that the statute intends, in principle, not to exclude any marine fish species from consideration. Consequently, comparing agricultural production and marine-capture fisheries is comparing apples and oranges (or salmon and tuna). Organic agriculture seeks to improve agricultural production by providing food free of man-made chemicals through growing techniques and production technologies that are also less injurious to the soil and water than conventional agriculture. Yet, marine fisheries cannot actively improve on a *pristine* natural environment. Agricultural production, by its very nature, depends wholly upon human intervention and manipulation of natural systems, while marine fish production is solely a dimension of ecosystem functioning and absolutely independent of human participation. The fact that producing healthful seafood does not require human cultivation should not exclude marine fish from organic labeling, otherwise wild berries and honey would also be excluded. It can, therefore, be argued that any marine fish captured from a pristine environment would qualify as organic.

The *rub* is in knowing that the particular fish captured at sea have indeed spent their lives in a relatively pristine environment. The problem is that many fish-producing, marine habitats are not pristine. The reason for this is that human action (and inaction) has degraded these habitats. Rather than be required to actively, affirmatively, and holistically manage and control for environmental factors upon which the entire life cycle of the fish depends, instead it should be required that there be no deleterious anthropogenic impact to the marine environment. This seems to be the criterion applied to organic labeling of wild, terrestrial foods, such as honey and berries. Unlike terrestrial food production systems, however, unlike relatively pristine terrestrial environments, the marine environment, especially the high seas, can be very difficult to monitor and evaluate for negative human impacts. Yet, much information is available about the productive near-shore and estuarine habitats in the contiguous 48 states to know there

is widespread impairment of these areas from a number of chemical (e.g., industrial effluents) and non-chemical sources (e.g., dredging). Therefore, organic certification ought to be denied to any fishery that captured fish that utilized marine habitat (or, in the case of salmon, any freshwater habitat) that has been impaired due to human action (or inaction)—recognizing that the criteria for impairment will have to be delineated. While human action cannot improve wild, pristine, marine ecosystems, human action can degrade habitat and decrease their productivity. Human intrusion into marine habitat does not cultivate but instead often “de-cultivates”, meaning the sustainability of marine production is destabilized and threatened.

It seems that sustaining the productivity of marine habitat upon which marine fish depend would be one important criterion for determining whether or not a particular fishery would qualify for organic labeling. If the marine environment of the particular fishery were determined to be free negative human impacts, then the additional question remains as to whether the fishery were negatively impacting the sustainability of the fish themselves.\* From the standpoint of biological conservation, ensuring that the fishing effort does not harm the target fish population means that the removal of fish does not interfere with ecosystem function by affecting other species in the food web. (In the case of anadromous salmon, salmon not only prey for other marine fish, but also provide essential nutrients to freshwater systems via carcass decomposition) It is also critical that the fishing effort does not reduce the genetic diversity of the species. This requires knowledge of whether the fish that a fishery targets is one population or multiple populations and, if multiple populations—what the proportional mix of populations exists in the so-called “mixed stock” fishery. Populations of the same species fish are genetically distinct. Yet, accurately assessing fish population, discerning genetic diversity, determining optimum harvest, etc. is fraught with difficulty and plagued by uncertainty.

For instance, in their enthusiasm to have Alaska salmon certified as organic, advocates for doing so have failed to fully differentiate between wild salmon populations and those that are ocean-ranched—reared in hatcheries and released into the marine pasture. For several decades, scientists have been warning of the threats that ocean-ranched salmon pose to the sustainability and biodiversity of Pacific salmon. Evidence is mounting that long-held theoretical concerns about the genetic and non-genetic threats posed by ocean ranching are indeed valid. Therefore, if wild salmon populations are candidates for organic certification, then it is incumbent upon the certification process to at least discriminate between those fisheries that are purely wild stock fisheries and those that are hatchery or mixed hatchery/wild fisheries. Further, complying with the precautionary principle, no mixed hatchery/wild fishery should be certified as organic until it can be demonstrated that the hatchery fish are neither replacing the wild fish through competition or overharvesting of the wild fish, thereby jeopardizing the sustainability of

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\* It could be argued, however, whether sustainability of the fish should be a prerequisite for organic certification. The proponents for organic certification of seafood argue that marine fish produced in a relatively pristine (i.e., “uncontaminated”) are necessarily “organic”—in other words *a priori* organic. Arguably then, the only necessary criterion is verification that the fish are indeed produced in a relatively “pristine” environment; “sustainability,” therefore, would seem to be of secondary concern, if not somewhat superfluous. In other words, even if a particular fishery were unsustainable, the last fish captured prior to the collapse of the stock still could be marketed as organic, presuming the marine environment had remained pristine.

wild fish, nor that the hatchery fish are threatening the genetic diversity of the wild fish. Indeed, an extremely rigorous certification process would not even certify a fishery that consisted wholly of wild fish until it could be demonstrated that the presence of hatchery fish in the ocean was having no or little impact on the sustainability or genetic diversity of those particular wild fish populations.

To return, then, to the two camps on the organic certification of marine fish: It would seem that the organic certification of marine fish is not quite the "no-brainer" the one camp would have us believe, nor should it be as insurmountable as the other camp would have us presume. In the end, given the pervasive habitat degradation due to human action and the inadequacy of much fishery management, there is indeed ample room for improvement of the marine environment and management systems that affect the sustainability of marine fish.

### **Further comments from Jan Konigsberg**

As I suggested in my earlier discussion, if wild fish are included in the purview of the Organic Foods Production Act--which seems to be a safe assumption--then the various standards that pertain to organic certification of agricultural production systems cannot possibly be the ones we should apply to production from wild systems. (I don't agree with Jim Riddle's conclusion that OFPA would have to be amended to include wild fish, rather if wild fish are to be excluded from organic certification, then OFPA would have to be amended.)

Organic agriculture is still agriculture--the very act of cultivation destroys the wild ecosystem production that had been present and which had depended upon the diversity of plant and animal species. Wild systems cannot be managed in the same way as agricultural systems (that's why they're called "wild"), but they can be managed in the sense of controlling adverse impacts to the natural production process from the human interaction with the habitat and the living species that occupy the habitat(s). While organic food production requires conscientious planning, management, monitoring, and evaluation, so does maintaining the wild aquatic environments that produce fish for food. It seems wrong to suggest that wild fish are "organic by neglect" and, therefore, should not be certified because no human effort has been required to ensure they have been organically produced. I only wish there were indeed productive ecosystems that have in fact been totally "neglected"--unaltered--by human beings, but there is no where on earth where that is the case (although there are certainly some ecosystems that have been relatively unaffected compared to others). I would submit, unfortunately, that ensuring relatively pristine ecosystems does require human effort, even if the effort results in merely scrap of paper designating a wilderness area or marine protected area (of course, such decisions embody a tremendous amount of human effort). This type of management may be different than that required of agriculture, but it is still management. Moreover, it is important to acknowledge that virtually all significant wild aquatic systems are in public ownership and, therefore, subject to management structures and strictures that are fundamentally different from those through which privately-held agricultural

property is controlled.

If, then, a different standard must apply to the organic certification of wild fish, what would it be? The Organic Foods Production Act provides direction when it states that the wild harvest will not endanger the naturally occurring biodiversity. Typically, we think of biodiversity as the complex of different species present in a particular ecosystem. In marine fisheries, for example, there is a good deal of concern about the "bycatch" of nontargeted fish, marine mammals, birds, reptiles, whose population could be severely depleted in the conduct of the fishery. A fishery, then, can be a significant threat to biodiversity and any fish that were captured in a fishery whose bycatch were threatening other species could, of course, not be certified--again, assuming that biodiversity is a prime criterion for organic certification. In the case of salmon, the issue of biodiversity is a bit more complicated.

Another way of looking a biodiversity is among and within species. Of all the pelagic fishes, it would appear that Pacific salmon is the one with the greatest diversity. If diversity were to be measured by simply the number of species alone, then there are other pelagic fish, such as tuna, that equal or exceed the seven species of Pacific salmon. (Of the seven species of Pacific salmon, two occur only in the Sea of Japan in relatively small numbers, displaying some of the characteristics of rainbow trout. The other five species are believed to be of more recent origin and are widely distributed throughout the arc of the Pacific Rim, from Japan north across the Kamchatka Peninsula to Alaska, then down the British Columbia coast to California.) But when it comes to the biodiversity within the species, Pacific salmon appear to have no rival. This is largely due to the fact that Pacific salmon are anadromous, meaning their life-cycle encompasses both fresh and saltwater--spawn in freshwater, but mature in the sea.

Below I quote from the final draft text from a book on the Bristol Bay region, which I conceived and for which I've served as executive producer (photographs by Robert Glenn Ketchum and text by Bruce Hampton) and which is scheduled for publication in Fall 20001.

[Begin quote]

Why anadromy? What makes it a better survival strategy? After all, many fish in either salt water or fresh water have successfully evolved without mixing waters.

First, fresh water is safe, at least relatively so; the sea harbors far greater numbers and kinds of predators. Spawning salmon are mostly unhampered by interference from other fish, and pea-sized eggs and young hatchlings find both adequate oxygen and refuge from predators in the uniform-sized gravel of many streams and lake shores. Later, when young salmon move into nearby lakes and streams, they continue to grow, largely free from the predation smaller fish face at sea. But once the young grow to minnow-size they face a crucial problem in fresh water: how to grow as much as possible before producing another generation. Fecundity is related to

size; only big fish produce large numbers of eggs. There simply isn't enough food in fresh water, particularly in cold lakes of northern latitudes, to allow a huge population of fish like salmon to reach large size (a landlocked version of sockeye salmon, called kokanee, is notably much smaller and less numerous than its sea-going cousin). Migration to the ocean, with its bountiful food supplies, solves this problem, resulting in maximal growth which ultimately leads to maximal reproduction.

Another way that anadromous salmon have stacked the genetic cards in their favor is by faithfully returning to the home waters of their birth. There is only so much spawning gravel in any watershed. If immense numbers of salmon returned haphazardly, some habitat might easily be over or under utilized. Salmon solve this dilemma by homing to the precise waters, sometimes even the very rivulet or lake beach, where they were born. Thus each suitable freshwater habitat has its own unique resident spawners. In Alaska alone biologists have identified some 10,000 spawning populations of commercial importance, but there are probably many more. Sockeye, in particular, have evolved into myriad races or sub-populations that are often marked by distinct traits such as color, size, flesh texture and even taste, making them readily discernable to those people who catch or study them.

Returning to the same home waters offers yet another advantage--it separates breeding stock so that although salmon may later co-mingle in the ocean, they experience early differences in temperature, food type and abundance, predators, and other stimuli that are unique to their specific waters. This critical information passes or "flows" genetically from one generation to the next, reflecting the unique environmental conditions for each individual breeding population. At the same time, it provides an immensely diverse gene "pool" for the species at large. The result: widespread extinction from environmental change is a lot less likely when a species is genetically diverse.

In the world of salmon, as with all life, biodiversity is the greatest line of defense against a constantly changing universe.  
[End Quote]

With Pacific salmon, biological diversity should be understood to refer to genetic diversity between and among the species and to the diverse behaviors (life-histories) that have resulted from genetic-adaptation to local habitats. This adaptation between and among different species of salmon in the same freshwater watershed has allowed salmon to take advantage of the full range of productive habitats within the watershed. As stated in Department of Fisheries and Oceans Canada's draft March 2000 "Six Principle of Wild Salmon Policy: "The preservation of the quality and diversity of salmon habitat, and its accessibility to salmon, should be the primary consideration of any strategy to conserve wild Pacific salmon. Local salmon populations have evolved in different habitats and are largely isolated from other such populations. Because natural selection favours individuals that are best adapted to their habitat, local populations typically exhibit genetic adaptations. These genetic adaptations enhance the productivity of naturally-spawning populations of Pacific salmon. Consequently, the

potential for sustained benefits from wild salmon is maximized by maintaining the greatest genetic diversity of salmon populations in the greatest number of habitats. In short, wild salmon production will be maximized when all natural habitat is fully utilized. The diversity of habitats that maintain genetic diversity is important to the future survival and evolution of Pacific salmon."

Consequently, when it comes to organic certification of salmon, I would submit that organic certification would depend upon a showing that both the salmon fishery management and the many fisheries themselves do no harm to salmon biodiversity (further, other animal and plant communities--trees, birds, bears, other fish, aquatic invertebrate species--depend upon salmon for nutrients their carcasses release into the freshwater environment). Unfortunately, in the Pacific Northwest, however, at least 106 major populations of salmon and steelhead (a sea-run rainbow trout) have already been extirpated, with at least 214 other stocks at risk of extinction. Pacific salmon are also basically extinct from Japan, and their populations are significantly reduced in Canada and Russia. Historically, salmon fishery managers have responded to declining populations (from whatever cause--in Japan it was overfishing and habitat destruction, in Oregon and Washington, dam-building, etc.) by promoting and establishing ocean-ranching hatcheries. In 1999, Japan, Russia, Canada, and the United States released over 6 billion young salmon into the central and north Pacific Ocean. These salmon go to sea to graze, mature and return to their release sites where they are caught in commercial fisheries.

Ocean-ranching in Alaska is big business. Eight regional aquaculture associations operate 30 production hatcheries, the State of Alaska and federal government operate three apiece. From 1988 to 1992, releases of ocean-ranched salmon exceeded 1.5 billion juveniles annually -- about 80 percent pinks, 10 percent chums, and the balance comprised of chinook, coho, and sockeye. During the same period, the number of hatchery returns ranged from 19.5 to 48.5 million adults, about 65 percent of which were caught in commercial fisheries.

Depending upon the species, the timing of their release, their size at release, the location of release as well as the complex matrix of variables that affect wild salmon, hatchery fish can, directly (e.g., competition for food) and indirectly (e.g., mixed-stock fisheries), significantly increase mortality of wild fish at sea beyond what would have been the case in the absence of hatchery fish: With the warming of the North Pacific Ocean, its carrying-capacity for salmon is reduced, meaning less salmon production, and, by inference, more competition for food between wild salmon and, most important, between hatchery fish and wild fish. It is now believed that ocean conditions (given unimpaired freshwater habitat) have the greatest effect on salmon production. As a recent article in the American Fisheries Society journal "Fisheries" explains: "Although climatological factors such as precipitation affect freshwater systems as well as salmon survival, scientists believe that ocean conditions contribute to interannual variability in salmon survival and growth, particularly in the first few months after leaving freshwater. Large-scale climatic factors affect ocean

productivity and thus carrying capacity for salmonids.”

There is a small but growing body of evidence that suggests that hatchery fish are supplanting wild fish rather than supplementing total production and that hatchery fish are straying into wild salmon populations, spawning with wild salmon, and, if so, they may directly be adversely impacting the genetic fitness and diversity of the wild salmon.

Hatchery production is the one variable affecting marine survival of wild salmon populations that is most subject to management control and can bring the greatest results in the shortest time. In other words, if ocean carrying capacity is declining due to a warming, then the fewer hatchery fish to compete with, the better chance that wild salmon can mature and return to spawn. Unfortunately, the State of Alaska, when promoting Alaska salmon in the seafood market, typically does not distinguish between wild and hatchery fish nor disclose the potential impacts of ocean ranching on its wild stocks. Some marketing material about Alaska salmon go so far as to imply that all Alaska salmon are naturally wild--that is, return and spawn in the wild!

Therefore, to repeat the point I made in my earlier piece--if wild salmon populations are candidates for organic certification, then it is incumbent upon the certification process to at least discriminate between those fisheries that are purely wild-stock fisheries and those that are hatchery or mixed hatchery/wild fisheries. Further, complying with the precautionary principle, it should be a matter of discussion as to whether any mixed hatchery/wild fishery should be certified as organic unless it can be demonstrated that the hatchery fish are neither replacing the wild fish through competition or overharvesting of the wild fish, thereby jeopardizing the sustainability of wild fish, nor that the hatchery fish are threatening the genetic diversity of the wild fish. Indeed, an extremely rigorous certification process probably would not even certify a fishery that consisted wholly of wild fish, until it could be demonstrated that the presence of hatchery fish in the ocean was having no or little impact on the sustainability or genetic diversity of those particular wild fish populations.

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# Comments of Zeke Grader To the Wild Aquatic Animals Task Force

I apologize for not having been on the conference calls (because of conflicts in my schedule) or having had an opportunity to comment on some of the papers. After reviewing the materials sent to the Task Force members, a review of the notes put together by Miles McEvoy, and a review of OFPA, I have the following comments and recommendations:

First off, I believe OFPA is vague on the issue of wild aquatic species that can lead to different interpretations. It does not appear that the issue of wild aquatic organisms, or even aquatic organisms, was given much thought or attention in the discussion leading to, the debate and subsequent passage of OFPA. It is obvious to me that OFPA needs clarifying amendment(s) to eliminate the uncertainty in the Act's language on how aquatic organisms are to be dealt with.

Second, while I believe some form of labeling is needed on plants and animals to distinguish between those taken from systems relatively free of non-natural foods, antibiotics, artificial colorings, pesticides/herbicides and pollutants, and those that are not – as well as between those harvested in non-controlled natural environments and those taken from controlled waters. I am not certain "organic" should be applied to these plants and animals. That is because, under OFPA the organic label has come to mean something – as applied to land based crops and livestock – that simply is not applicable to most aquatic plants and animals. The highly migratory nature of many fish stocks, our inability to adequately control water quality throughout the range of many fish stocks, and even the uncertainty of knowing the origin of the stocks given mandates to mitigate fish losses (e.g. salmon hatcheries) and supplementation programs, seems to conflict with the strict at least most provisions, of OFPA.

Indeed, even the term "sustainable" is not well settled on currently for fish. For example, if we were to use the MSC certification process, only three fisheries in the world would currently qualify and only Alaskan salmon in the U.S. Certainly, there are other U.S. fisheries that can be considered sustainable but how do we define them?

Third, I don't think it is necessary or even a good idea to begin changing the language (or the meanings of the language in regulations) of OFPA to meet the very different conditions facing aquatic plants and animals from land based crops and livestock. Rather a label that equivalent to organic for crops and livestock, ought to be applied to aquatic plants and animals – both those taken from the wild and those from aquaculture operations.

My recommendation, based on the language in OFPA and the very thoughtful comments and papers presented by the Task Force members, is that fish used for fertilizer or feed for organic crops or livestock be permitted on organic label (if it meets certain standards listed below) and that all other aquatic plants and animals for human consumption be given the term "natural" (or something similar) as the aquatic equivalent of organic.

Organic fish feed/fertilizer would be that made from fish that was harvested in the wild from non-polluted waters, pursuant to all applicable regulations on harvest and not subject thereafter to any chemical treatment during harvest.

Wild Natural is any aquatic plant or animal that has spent the majority of its life in a non-controlled natural system where no medicines, feeds or any other human caused intervention was involved during the organisms period in the non-controlled natural system portion of its life and that was harvested in a sustainable manner from ocean, bay estuarine, river or lake waters that the organism is natural to and in waters determined to be non-polluted.

Farmed/Natural is any aquatic plant or animal that has spent the majority of its life in a controlled system where no antibiotics, hormones, coloring agents, pesticides/herbicides or other industrial poisons, non-organic feeds were used in the raising of such organisms, and that were harvested in waters the organism was natural from a controlled enclosure on land, in a lake, river, bay, estuary or ocean waters determined to be non polluted.

To make this work, of course, would require definitions for natural and controlled systems, non-polluted waters, and sustainable for the latter I suggest sustainable apply, at least for now, to any organism harvested pursuant to regulations adopted under the Sustainable Fisheries Act (Magnuson Act amendments) or certified by the Marine Stewardship Council.

The "natural" label would thus become for aquatic organisms the equivalent of the organic label as now applied to land based crops and livestock.

If you have any questions please email me at: [fish4ifr@aol.com](mailto:fish4ifr@aol.com)

## **Organic Aquaculture - Meeting Fundamental Organic Certification Requirements Similarities and Differences Between Terrestrial and Aquatic Organisms**

**Presented by James Riddle, Training Coordinator  
Independent Organic Inspectors Association**

Organic agriculture is based on holistic production management systems which promote and enhance agro-ecosystem health, including biodiversity, biological cycles, and biological activity. Organic agriculture emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. These goals are met, where possible, through the use of cultural, biological, and mechanical methods, as opposed to using synthetic materials, to fulfill specific functions within the system.

In order for aquaculture systems to be certified organic, they will have to be managed in compliance with clear, transparent, and verifiable standards which are consistent with standards already established for organic livestock production.

Organic livestock standards in the United States, as currently administered by State and private certification bodies, and as proposed by the USDA, require that animals: be managed organically from the last third of gestation or from hatching; be fed 100% organic feed and only approved feed additives; receive no antibiotics or hormones; receive no parasiticides, if they are to be sold or used for meat; and not be genetically engineered, cloned, or from embryo transfer.

Certified organic livestock producers must establish and maintain preventive livestock health care practices, including:

- Selecting species and types of livestock with regard to suitability for site-specific conditions and resistance to prevalent diseases and parasites;
- Providing feedstuffs sufficient to meet nutritional requirements, including vitamins, minerals, and other additives or supplements;
- Establishing appropriate housing, pasture conditions, and sanitation practices to minimize the occurrence and spread of diseases and parasites;
- Providing conditions which allow for exercise, freedom of movement, and reduction of stress appropriate to the species;
- Performing physical alterations as needed to promote the animal's welfare and in a manner that minimizes pain and stress; and

- Administering vaccines and other veterinary biologics.

Organic producers must not withhold medical treatment from a sick animal in an effort to preserve its organic status. All appropriate medications must be used to restore an animal to health when methods acceptable to organic production fail. Livestock treated with a prohibited substance must be clearly identified and shall not be sold, labeled, or represented as organically produced.

Producers of organic livestock must manage manure in a manner that optimizes recycling of nutrients and does not contribute to contamination of crops, soil, or water by plant nutrients, heavy metals, or pathogenic organisms.

Slaughter must occur at a certified organic slaughter facility. Animal stress, injury, and accidental mortality must be minimized during loading and transport. Organic animals must be clearly identified and segregated to prevent commingling with non-organic animals and animal products.

Organic livestock operations must submit an organic plan which details all management practices used by the operation. They must maintain records sufficient to preserve the identity of the animals and document all feed sources and health care inputs. In addition, organic livestock operations must be inspectable, both for pre-scheduled and unannounced inspections.

### **Unresolved Questions**

Can aquaculture systems be structured to meet the fundamental requirements of organic certification? Can such systems meet the 100% organic feed requirement? Can the use of antibiotics be prevented? How can stress and injury be minimized? What stocking rates are appropriate? Do stocking rates need to be defined per species and/or per management system?

What conversion requirements are needed for a production system to be certified organic? How long must the production site be managed organically before it can be certified? Can young stock come from conventional or wild sources? If so, at what age or stage or life?

What water quality standards are appropriate? Organic production has historically been a land-based activity. Hence, the emphasis has been on ecologically sound soil and land management. With organic aquaculture, the emphasis must be on ecologically sound watershed and water quality management.

What steps need to be taken to define production areas and protect them from outside contaminants? How can tolerance levels be established for potential contaminants? Currently, residue analysis is used as a tool to verify compliance and deter fraud. Will aquaculture standards need to require that regular, periodic residue analysis and water quality monitoring be conducted?

What are examples of ecologically sound manure handling systems for aquatic species? How can aquaculture systems be integrated with the surrounding environment to promote biological diversity and the recycling of nutrients?

How should organic plans be constructed to document organic management practices? What records are necessary in order to track aquatic species? Should aquaculture standards cover semi-aquatic species, such as crayfish, reptiles, and amphibians? What new definitions are needed in order to construct organic aquaculture standards? International organic standards, including Codex, the European Union, and IFOAM, do not allow or recognize certification of wild fish and game. Can wild systems be “managed” in order to comply with the organic standards requirements specified above? Is it possible that “certified wild” systems may produce superior products, and have more market appeal, than “certified organic” systems? Are current marine stewardship standards and verification practices adequate to ensure the sustainability of the systems they certify? Can fish meal from “certified sustainable” systems be used as feed for “certified organic” aquaculture systems?

## Principles and Criteria for Sustainable Fishing

### Introduction

As a major renewable resource, fisheries provide protein and a livelihood for many fishers and fishing communities, and represent a valuable source of income to the fishing industry throughout the world. The responsible management of the world's fisheries for the benefit of future generations is of utmost importance. The Food and Agricultural Organisation of the United Nations suggests in their latest report on "The State of World Fisheries and Aquaculture, 1996" that sixty percent of the world's fish resources are in need of urgent management, and fully thirty five percent are currently over-fished. The FAO report further predicts that more than 20 million tons of fish could be added to total world landings through rehabilitation of degraded resources, exploitation of underdeveloped resources (without over-fishing them), and reduction of discards and waste.

If the marine fishing industry is to survive into the next millennium as an important source of employment and wealth as well as food, then innovative approaches are necessary. Some fishery management systems have been able to demonstrate that sustainable fisheries are possible, but they are currently a small minority. Recognising that market incentives have the potential to improve fisheries management and to turn chronic over-fishing into recovery, sustainability and economic stability, the Marine Stewardship Council (MSC) was established in 1997 to harness these incentives in such a way as to provide the fishers, processors and retailers with greater security of supply and employment than has been possible to date.

The MSC is an independent, charitable, not-for-profit, and non-governmental international organisation working to achieve sustainable marine fisheries by promoting responsible, environmentally appropriate, socially beneficial and economically viable fisheries practices, while maintaining the biological diversity, productivity and ecological processes of the marine environment.

To accomplish this, the MSC proposes a new approach to change the incentive structure so that benefits accrue to the fishers, fish processors, traders, retailers and consumers in adopting a more responsible and sustainable approach to fisheries exploitation. Sustainable fishing means the responsible exploitation of the resource that ensures its ability to continue to provide present and future benefits by maintaining high productivity and biological diversity of marine ecological communities -- accepting that fisheries intrinsically affect the abundance of the fish populations which they utilise.

At the centre of the MSC is a set of *Principles and Criteria for Sustainable Fishing* which will be used as a standard in a third party, independent and voluntary certification programme. These have been developed by means of an extensive, international consultative process through which the views of stakeholders in fisheries have been gathered from around the world. Further international consultations will take place during 1998. Following the initial round of consultations, and a series of certification test cases, a workshop took place to refine further the draft Principles and Criteria, at Airlie House Virginia, 9-11 December 1997. The twenty-five participants reviewed the information and views collected through this process and developed the attached revised draft set of Principles and Criteria. These are intended to build upon, and to complement, the existing work of international organisations and the best practices of the fishing industry.

These Principles reflect a recognition that a sustainable fishery should be based upon:

- The maintenance and re-establishment of healthy populations of targeted species;
- The maintenance of the integrity of ecosystems;
- The development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects; and
- Compliance with relevant local and national local laws and standards and international understandings and agreements

The Principles and Criteria are further designed to recognise and emphasise that management efforts are most likely to be successful in accomplishing the goals of conservation and sustainable use of marine resources when there is full co-operation among the full range of fisheries stakeholders, including those who are dependent on fishing for their food and livelihood.

On a voluntary basis, fisheries which conform to these Principles and Criteria will be eligible for certification by independent MSC-accredited certifiers. Fish processors, traders and retailers will be encouraged to make public commitments to purchase fish products only from certified sources. This will allow consumers to select fish products with the confidence that they come from sustainable, well managed sources. It will also benefit the fishers and the fishing industry who depend on the abundance of fish stocks, by providing market incentives to work towards sustainable practices. Fish processors, traders and retailers who buy from certified sustainable sources will in turn benefit from the assurance of continuity of future supply and hence sustainability of their own businesses.

The MSC promotes equal access to its certification programme irrespective of the scale of the fishing operation. The implications of the size, scale, type, location and intensity of the fishery, the uniqueness of the resources and the effects on other ecosystems will be considered in every certification. The MSC further recognises the need to observe and respect the long-term interests of people dependent on fishing for food and livelihood to the extent that it is consistent with ecological sustainability, and also the importance of fisheries management and operations being conducted in a manner consistent with established local, national, and international rules and standards as well as in compliance with the MSC Principles and Criteria.

### **Preamble**

The following draft Principles & Criteria are intended to guide the efforts of the Marine Stewardship Council towards the development of sustainable fisheries on a global basis. They were developed assuming that a sustainable fishery is defined, for the purposes of MSC certification, as one that is conducted in such a way that:

- it can be continued indefinitely at a reasonable level;
- it maintains and seeks to maximise, ecological health and abundance,
- it maintains the diversity, structure and function of the ecosystem on which it depends as well as the quality of its habitat, minimising the adverse effects that it causes;
- it is managed and operated in a responsible manner, in conformity with local, national and international laws and regulations;
- it maintains present and future economic and social options and benefits;
- it is conducted in a socially and economically fair and responsible manner.

The following principles represent the overarching philosophical basis for this initiative in stewardship of marine resources: the use of market forces to promote behaviour which helps achieve the goal of sustainable fisheries. The Principles form the basis for detailed Criteria which will be used to evaluate each fishery seeking certification under the MSC programme. Although the primary focus is the ecological integrity of world fisheries, the principles also embrace the human and social elements of fisheries. Their successful implementation depends upon a system which is open, fair, based upon the best information available and which incorporates all relevant legal obligations. The certification programme in which these principles will be applied is intended to give any fishery the opportunity to demonstrate its commitment to sustainable fishing and ultimately benefit from this commitment in the market place.

### **Scope**

The scope of the MSC Principles and Criteria relates to marine fisheries activities up to but not beyond the point at which the fish are landed. However, MSC-accredited certifiers may be informed of serious concerns associated with post-landing practices.<sup>1</sup>

The MSC Principles and Criteria apply at this stage only to marine fishes and invertebrates (including, but not limited to shellfish, crustaceans and cephalopods). Aquaculture, freshwater fisheries, and the harvest of other species are not currently included.

Issues involving allocation of quotas and access to marine resources are considered to be beyond the scope of these Principles and Criteria.

## **AIRLIE HOUSE REVISED DRAFT PRINCIPLES AND CRITERIA FOR SUSTAINABLE FISHING<sup>2</sup>**

### **PRINCIPLE 1:**

**A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.**

<sup>1</sup> Other complementary certification programmes (e.g. ISO 14000) provide opportunities for documenting and evaluating impacts of post landing activities related to fisheries products certified to MSC standards. Constructive solutions to address these concerns through appropriate measures should be sought through dialogue with certification organisations and other relevant bodies.

<sup>2</sup> The sequence in which the Principles and Criteria appear does not represent a ranking of their significance, but is rather intended to provide a logical guide to certifiers when assessing a fishery. The criteria by which the MSC Principles will be implemented will be reviewed and revised as appropriate in light of relevant

#### Intent:

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

#### Criteria:

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

#### **PRINCIPLE 2:**

**Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.**

#### Intent:

The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

#### Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimises mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

#### **PRINCIPLE 3:**

**The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.**

#### Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

#### A. Management System Criteria:

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.  
The management system shall:
  2. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;
  3. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
  4. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
  5. incorporates an appropriate mechanism for the resolution of disputes arising within the system<sup>3</sup>;
  6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
  7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
  8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;

<sup>3</sup> Outstanding disputes of substantial magnitude involving a significant number of interests will normally disqualify a fishery from certification.

9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;
10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
  - a) setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
  - b) identifying appropriate fishing methods that minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
  - c) providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
  - d) mechanisms in place to limit or close fisheries when designated catch limits are reached;
  - e) establishing no-take zones where appropriate;
11. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

#### B. Operational Criteria

Fishing operation shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;
15. minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;
16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and
17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

Issue 1 | June 1998

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DEPARTMENT OF AGRICULTURE  
FOOD SAFETY & ANIMAL HEALTH  
DIVISION

## DRAFT Organic Standards for Wild Aquatic Animals

Prepared by Paul Peyton  
Jan. 29, 2001

### **Purpose**

These standards include the criteria for the organic certification of wild aquatic animals, including marine and freshwater finfish and shellfish. They are closely patterned after the NOP wild crop standard in the final rule. The specifics are intended to be in the plan.

### **Fundamental Issues and Suggested Responses**

1. *Who is certified?* The NOP provides standards for certification of producers and handlers. Government agencies managing the environment or fisheries aren't certified here either.
2. *What is the authority of the NOP to set standards different from those set by environmental and fisheries management agencies?* The operative approach is that the NOP can set standards that exceed those of the relevant management agencies because this is a marketing standard – if the producer/ handler wishes to label their product as “organic,” it must meet these standards.

The NOP is also a process standard. The standard set in the final rule, at 5% of the EPA action level for residual pesticides, is the most apparent exception. That is based on a fundamental tenant of the organic program, which is that organic food should be free of pesticides.

3. *Environmental Conditions.* The final rule's wild crop standards do not require any environmental monitoring, only that there be no known application of prohibited substances within three years.

The suggested standard for aquatic systems is a “clean waters” standard. That is, the producer / handler will present information showing that breeding, rearing and harvest waters meet or would reasonably expected to meet the higher or drinking water or aquatic rearing standards for man-made toxic materials or pathogens. These would include pesticides, PCBs, radioactivity, fecal coliform, and inorganic chemical contaminants (such as heavy metals and asbestos)<sup>1</sup>. While the NOP may have authority to set lower standards, there are so many factors to consider that setting a lower level may be hard to justify.

A tiered approach to demonstrating water quality could be considered. In pristine waters, where human impact is minimal, documentation showing

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<sup>1</sup> These are equivalent to the Alaska clean water standards for these substances. Other Clean Water Act standards appropriate for the growth and propagation of fish and shellfish in fresh or salt water are included in the Alaska standard.

minimal potential for toxics would suffice. Where causes for concern are known and have the potential to affect water quality in nearshore areas, compliance with water quality standards would require a higher standard of evidence. Causes for concern would include known oil or toxic waste spills, known discharges of contaminants, NPDS sites, etc. Decisions on testing would be left up to the certifiers.

Continuous compliance with state and federal standards for parameters other than toxics was considered, but such standards often call for determining the natural level and then set a "not to exceed" level above that. These are intended for humans who want to do something to degrade the natural environment. It is more relevant for the organic standard to limit exposure to the toxics listed. The limitation on residuals in tissues would apply to seafood as well.

This proposal is subject to further refinement, of course. I'm continuing to research clean water standards to see if there is better formulation that addresses issues of most concern to the organic consumer without burdening the producer / handler more than is reasonable.

4. *How to structure the rule.* Patterning the wild aquatic animals standard after the wild crop practice standard may not be the best approach. What isn't in the rule doesn't carry the force of law, and it may be desirable to expand what's in the rule to include some or all of the specifics now suggested for the guide. What's in the guide language isn't as tight as it could be, but until there's been considerable review and comment, I didn't want to start cutting things.

## **Proposed Standards**

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for the Wild Aquatic Animals Task Force  
Jan. 30, 2001

### ***Subpart A. Definitions***

Near-shore waters - within 12 nautical miles of the baseline from which the territorial sea is measured.

Supervised area - near-shore breeding, rearing and harvesting saltwater areas, and any freshwater breeding, rearing and harvesting areas.

Clean water bodies - waters that at all times meet or exceed the higher of aquatic animal propagation or drinking water standards for toxic contaminants or pathogens. No impaired water bodies as that term is used by the EPA would qualify.

Enhanced stocks - sub-populations of a species that are aided at early life stages by mankind, such as through hatcheries, spawning channels, incubation boxes, etc.

Pristine water bodies - Waters with minimal human habitation such that the impact of human activity on the supervised waters is rarely detectable. Discharge of human waste and seafood processing wastes in compliance with NPDS standards is permitted, provided discharge sites are situated to have minimal impact on the supervised area. Pristine waters must be free of industrial development that discharges toxic contaminants or pathogens.

Toxic contaminants and pathogens - Pesticides, PCBs, radioactivity, volatile organic compounds, fecal coliform, petrochemical hydrocarbons, inorganic chemical contaminants, etc. controlled by EPA or the relevant state water quality management agency.

Wild seafood stock - Genetically distinct subset of a species, or in the case of sessile or highly localized populations, populations inhabiting distinct geographic areas as recognized by relevant seafood management agencies.

### ***Subpart B. Applicability***

Aquatic animals need to be added.

***Subpart C. Organic Production and Handling Requirements***

## 205.201 Organic production and handling system plan

(1) It is recommended that the description of practices and procedures for this section in the guide to be published by USDA draw from the sustainability and biodiversity elements that follow.

(2) - (5) apply as written.

(6) It is recommended that the USDA guide for this section draw from the clean water elements that follow.

## 205.20x Wild aquatic animal harvesting practice standard

The product of a wild seafood fishery that is intended to be sold, labeled, or represented as organic must:

- (a) be bred, reared and harvested in pristine waters or clean waters ;
- (b) be harvested in a manner that will sustain the growth and reproduction of the species and the ecosystem from which they are harvested; and
- (c) be managed in a manner that conserves the biodiversity between enhanced and wild stocks of a species, if applicable.

***Subpart D – F. Apply as drafted******Subpart G. Administration***

## The National List

The National List should be amended to include the contaminants on the FDA list of “Environmental Chemical Contaminant and Pesticide Tolerances, Action Levels and Guidance Levels” as prohibited substances for wild aquatic animals if they occur at or above 5% of the EPA action levels. In addition, saltwater harvest, spawning or rearing area waters should not exceed Alaska water quality standards for petrochemical hydrocarbons.

## Exclusion From Organic Sale

Exclusion from organic sale should be amended to include a “zero tolerance” policy for taking fish from a harvest area that has been subjected to an oil spill or a release of another hazardous substance within a specified period prior to harvest (such as three years). The management agency, or if necessary the certifier, determines if the spill or release could impact near-shore harvest,

breeding or rearing areas, and a strict monitoring program for any fish taken from those areas is developed<sup>2</sup>.

### ***Plan Requirements***

#### **Sustainability**

In determining whether a species is being harvested in a sustainable manner, the certifying agent will review the legal and management framework in which the species is managed to determine, at a minimum:

- Whether maintenance of healthy populations of targeted species are primary management objectives of the relevant local and national laws and relevant international agreements, and where a population or stock is depleted, the laws require management that leads to recovery of the depleted population or stock;
- Whether maintenance and re-establishment of healthy populations or stock of targeted species forms the basis of fishery management plans and are the primary focus by the legally responsible managers;
- Whether maintenance of the integrity of the ecosystem is an objective of the relevant local and national laws and relevant international agreements – ie that reduction of unutilized bycatch, minimization of waste of the target species, conservation of the biodiversity of the fished ecosystem and minimization of impact on essential fish habitat are objectives of the relevant laws and management plans and systems governing the fishery;
- Whether the species in question are managed based on credible, periodic evaluations of biomass and the life history of the species using the best available information and using a precautionary approach, particularly when dealing with scientific uncertainty;
- Whether the management regime incorporates an active research plan that addresses the information needs of management, including assessments of the biological status of the resource and impacts of the fishery, and provides for the dissemination of research results to all interested parties in a timely fashion;

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<sup>2</sup> Alaska's commercial fishing management, and environmental and food processing monitoring are overseen by separate agencies. Alaska has a written protocol that requires the environmental monitoring agency to inform the other agencies when and where a spill or release has occurred, the commercial fishing agency to close the impacted area to commercial fishing, and implementation of the processing monitoring program by the agency charged with food production oversight. This model could be used by other states.

- Whether the relevant local and international laws observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood;
- Whether the relevant local and international laws provide economic and social incentives that contribute to sustainable fishing and minimize intended and unintended subsidies that contribute to unsustainable fishing;
- Whether fishery management measures and strategies in place demonstrably control the degree of exploitation of the resource, including, but not limited to:
  - a) setting catch levels that do not exceed the recommendations of the relevant stock assessment scientists using the best scientific information available as described above,
  - b) accounting for the non-target species captured in association with, or as a consequence of, fishing for target species;
  - c) identifying appropriate fishing methods that minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
  - d) providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
  - e) mechanisms in place that limit or close fisheries when designated catch limits are reached; and
  - f) establishing no-take zones where appropriate to enhance the sustainability of target and bycatch species.
- Whether there are appropriate monitoring, compliance and enforcement programs to ensure that fisheries are harvested in compliance with relevant local and national laws and international agreements regulating the fisheries and environmental quality and the standards above; and
- Whether there are other areas or causes for concern to be further investigated. Examples of causes for concern are: the target species is in an overfished or rebuilding mode, depressed stocks of bycatch or competitor species suggest excessive ecosystem impacts, etc.
- In evaluating causes for concern, independent sustainability certifiers specializing in fisheries, such as the Marine Stewardship Council, should be consulted. The standards used by the sustainability certifier must be taken into account. The MSC's standards are the most scientific at this time. A positive review by such entities can be used as a guide, but does not substitute for a more specific assessment at the stock level.

## MANAGEMENT EVALUATION OPTION

- The certifier will evaluate the credibility of the management agency in meeting the standards above, and shall not certify a harvester/ handler and stock in question if there is reasonable doubt the above standards are being met.

## Clean Water Requirements

In determining whether breeding, feeding and harvest environments meet clean water standards, the certifying agent will review the operator's application, and the legal and management framework in which the environment is managed.

- The boundaries of the supervised area must be clearly stated. Maps must be used to show the breeding, rearing and harvest area that the target organism inhabits throughout its life cycle. Maps should be of a variety of scales; area maps must show the general location of the habitat and smaller scale maps must show the supervised area in greater detail. Maps must include topography, human developments, and other items of geological/geographical significance.
- The operator must supply information, which will allow assessment of the potential for contamination of the supervised area along with documentation supporting the conclusions of the analysis. All direct and indirect human impacts on the supervised zone must be thoroughly described. Non-human factors that can adversely affect the safety of the product for consumption by humans must also be documented and reported.
- The operator must supply information on how the area is monitored and/or managed by governmental bodies or other supervisory agencies. The frequency of monitoring/research activities by the supervisory body must be reported.
- The activities that have been undertaken, either by research or regulatory bodies, and/or by the project managers, to verify that the supervised area has not been, and is not being contaminated, must be described.
- The operator must submit a plan for ongoing monitoring of the supervised zone to confirm that no contamination occurs. Any information regarding pollution of the target species' habitat must be reported as soon as it becomes known to the operator.
- All regulations pertaining to the use of the area as well as any indirect impacts upon it by humans must be described or referenced. Information on mechanisms used for enforcement of these regulations must also be included.
- All required licenses or permits for harvest and processing must be presented, along with an explanation of the responsibilities associated with holding such licenses as well as the frequency of their issuance. Specific use

agreements between the party to be certified and the supervisory authority for the area must also be presented.

- At any time when there is cause for concern, the certifier may require water quality testing unless adequate testing is already being done. Testing will be commensurate with the size of the area involved and the severity of the potential contamination. Causes for concern may include any of the following:

A release of oil or other hazardous substance is known to have occurred in the supervised area;

An oily sheen is present in near-shore supervised waters; or

A contaminated site, mixing zones, or zone of deposit in or near the near-shore supervised area may result in the release of prohibited substance affecting the area or the seafood.

- The organic certifier may require tissue residue testing, as with terrestrial systems, if there is reasonable cause to believe the animals may have been contaminated. The maximum allowable contaminant concentration standard for aquatic animals is the same as for terrestrial animals.

### Biodiversity Standard Requirements<sup>3</sup>

In determining whether seafood stocks are being managed to conserve biodiversity between enhanced and wild stocks, the certifying agent will review the legal and management framework in which the species is managed to determine:

- That enhancement projects are not intended to replace wild stocks depleted by overfishing, habitat destruction, or other human activity;
- That enhancement projects are not located on water sources that were significant breeding areas for wild stocks;
- That broodstock for enhancement projects comes from breeding areas within 50 mile radius of the enhancement project;
- That in managing fisheries where both wild and enhanced stocks are harvested, protection of the wild stock takes priority over harvesting the enhanced stock(s).

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<sup>3</sup> Biodiversity within a species is partially dealt with in the sustainability standards, which require sustainability at the stock level. The sustainability standard also requires conservation of biodiversity between species within the fished ecosystem. The remaining area to be addressed is biodiversity within enhanced systems such as around fish hatcheries.