



## **Best Aquaculture Practices Certification Program**

Global Aquaculture Alliance

5661 Telegraph Road, Suite 3A • St. Louis, Missouri 63129 USA

Phone: +1-314-293-5500 • Fax: +1-314-293-5525 • Web: [www.gaalliance.org/bap/](http://www.gaalliance.org/bap/)

# **Comments on BAP Standards**

## **Pangasius Farm Standards**

*Comments concluded March 2010*

### **New England Aquarium**

Sustainable Seafood Advisory Service

Michael Tlusty, Katie Hladki, Matthew Thompson

Boston, Massachusetts, USA

#### **GENERAL COMMENTS:**

These comments are provided to the Global Aquaculture Alliance on the guidelines and inspection form for the Best Aquaculture Practices draft *Pangasius* farm standard by the New England Aquarium. Founded in 1969, the New England Aquarium is a global leader in ocean exploration and marine conservation and is committed to building awareness and finding innovative solutions through our marine conservation and research initiatives.

The Aquarium's Sustainable Seafood Advisory Services aims to foster long-term sustainability of seafood resources and their supporting ecosystems by raising public awareness and working with the seafood industry to promote certification and best practices within wild-capture fisheries and aquaculture operations.

We appreciate the opportunity to review and comment on these draft standards. These comments should not be considered an endorsement of the Global Aquaculture Alliance or its standards; neither should the suggestions made be considered conditions to obtain that endorsement. The Aquarium recognizes the challenges and potential benefits of certification schemes, especially in regard to aquaculture production, and often offers comments and suggestions. These comments are presented from a general perspective and not prescriptive, as the Global Aquaculture Alliance technical committees should generate the specific technical values.

#### **General Comment:**

Will a hatchery certification be developed? If not, specific guidelines (such as pathogen-free, hatchery-raised fry only) should be included in this standard. If so, interim measures should be included (see above) and sourcing from certified hatcheries should be required by a stated deadline (e.g., two years after certification). The addition of a biosecurity standard would be beneficial. We recommend that this draft certification go through another public comment period after the results of this period and any amendments made by the technical committee.

**BAP:** *The existing shrimp hatchery standard will be configured to address species-specific aspects for Pangasius, and a technical committee is being formed to do this. New hatchery standards will go through the established public comment process and approval by the SOC.*

#### **SPECIFIC COMMENTS:**

##### **1. Property Rights and Regulatory Compliance**

The presence or completion of an environmental impact assessment before a farm was/is established should be an informational question. Additionally, the detail whether the EIA was made public.

**BAP:** *The existing wording of clause 1.3 reinforces statutory obligations to conduct and gain approval for an EIA prior to building a farm. Farms that undergo an inspection to BAP standards are conducting an E.A. (environmental audit), which is carefully targeted at the most critical impacts of Pangasius farms and forms a very valuable check on and a supplement to an EIA.*

## 2. Community Relations

The following changes should be made in the Guidance Document:

Certified farms should be required to share production information, such as disease outbreaks and other information that may affect a neighboring farm.

The following changes should be made in the Certification Application/Audit form:

2.3. "Committed to" is hard to audit, reword to "...show evidence that your facility has regular (at least annual)...". Where terms like "regular" are used, require examples or guidance (e.g., monthly, at least annually) for the auditor.

**BAP:** *Agreed. Modifications have been made to clause 2.3 and the Standard 2 guidelines.*

## 3. Worker Safety and Employee Relations

The following changes should be made in the Guidance Document:

Select workers shall be trained in the first aid of electrical shock, profuse bleeding, drowning and other possible medical emergencies.

**BAP:** *Agreed. The guidelines and standards clause have been changed. New clause 3.10: Select workers shall be made familiar with details of the emergency response plans and trained in the first aid of electrical shock, profuse bleeding, drowning and other possible medical emergencies.*

Living quarters shall be well ventilated and not over-crowded or exposed to safety hazards. They shall provide adequate shelter and clean shower and toilet facilities.

**BAP:** *Clause 3.6 specifies that toilet and shower facilities must be readily available to employees.*

Food service, if provided, shall provide wholesome meals for workers, with food stored and prepared in a hygienic manner and served for prices that do not exceed local standards.

**BAP:** *New clause 3.7 (copied from the BAP shrimp farm standard) added: If provided, meals shall be wholesome and commensurate with local eating customs.*

The following changes should be made in the Certification Application/Audit form:

3.4. If building standards are local or national, then compliance should be required in standard 1 or should be made critical.

3.9. A critical point should be added to ensure that specific employees are trained (verified by interview) according to the emergency response plan that is required by this standard. Evidence (document) should be required to demonstrate compliance with the plan.

**BAP:** *See new clause 3.10 above, which has been added to cover this.*

3.10. Should be elevated to critical and read "employees shall be provided suitable and maintained protective gear (eye protection for welding, gloves for shop work, boots for wet areas) (audited by visual inspection and document support).

**BAP:** *New wording for 3.11: Protective gear and equipment in good working order shall be provided for employees( e.g., eye protection for welding, gloves for shop work, boots for wet areas).*

#### 4. Wetland Conservation and Biodiversity Protection

The following changes should be made in the Guidance Document:

Wetland areas shall be delineated by evaluation of hydrological conditions and the presence of wetland vegetation.

**BAP:** *New wording for clause 4.1: If net loss of sensitive wetland habitat (delineated by evaluation of hydrological conditions and the presence of wetland vegetation) ...*

The stringency of this standard would be improved by specifically outlining how wetlands will be categorized or defined, i.e. RAMSAR designated sites.

**BAP:** *A reference to the Ramsar website was added to the guidelines. Ramsar designation can be used as a guide but not as a definitive indicator. Unfortunately the Ramsar site designation process has been usurped by some anti-aquaculture activists, e.g., in places like the Gulf of Fonseca (Honduras and Nicaragua), where, despite the claims of the lobbyists, pond farming on salt flats and mangrove conservation have demonstrated mutual compatibility (for example, through the evidence of satellite imagery).*

Remove the word public from the third paragraph under implementation that reads “Certified farms shall not discharge effluents into public mangrove or wetland areas...”

**BAP:** *The word public is used intentionally because it permits the creation of new, private wetlands that can be used to filter effluents before they return to public water bodies.*

Farms shall record all predator mortalities.

**BAP:** *Agreed, but there is a need to exclude fish and crustaceans that are routinely killed during pond preparations. Clause 4.7: The applicant shall record the species and numbers of all avian, mammalian and reptilian predator mortalities.*

Further explanation is needed for the statement “Additionally, all species listed by the World Conservation Union red list or protected by local or national laws shall not be subject to control by any means.” Does this include exclusion via nets or acoustic deterrent devices?

**BAP:** *Clause 4.6 now reads: The applicant shall use humane methods of predator control and actively favor non-lethal methods. No controls, other than non-lethal exclusion, shall be applied to species that are on the World Conservation Union Red List or that are protected by local or national laws.*

Points in the final paragraph under implementation should be elevated to critical points: “Drainpipes shall extend at least 1 m beyond embankments at an elevation near the ditch bottom. The pipe outlet areas shall be protected with a splash shield or riprap to reduce effluent energy. Drainpipes that discharge directly into streams shall extend over the stream bank to prevent erosion and be located near the stream’s normal water level.”

**BAP:** *Since there are many effective ways to address erosion, BAP considers that this information is best presented within recommendations/Guidelines. Specifying how each farm must handle erosion problems would be overly prescriptive.*

Add a requirement for a biodiversity audit and protection plan, which would require all at-risk species in the area to be identified and mitigation measures to ensure no harassment or mortality of those species.

**BAP:** *The IUCN red list is used as the identifier of at-risk species, and these species are then protected via the critical clause 4.6.*

The following changes should be made in the Certification Application/Audit form:

4.1. Is the deadline of 1999 with regard to Ramsar? This could be strengthened by requiring 1999 unless national wetland protection was established pre-1999, in which case that date becomes the grandfathering deadline.

**BAP:** *1999 corresponds to Ramsar and to the publication of GAA's first codes for responsible aquaculture.*

4.4. Reword to "Is it true that no dredge and fill activities aimed at increasing the area available for pond construction have occurred?"

**BAP:** *Agreed.*

4.7. Define "control." Require that no mortality of IUCN Red-Listed species has occurred.

**BAP:** *The meaning of "control" has now been clarified in the guidelines (see above).*

4.8. Elevate points to critical.

**BAP:** *The format of the BAP documents has changed. As with other BAP standards, all of the standards clauses must be complied with. Auditors may record non-conformities as critical, major or minor, but they must all be addressed before certification is awarded.*

## 5. Effluent Management

The following changes should be made in the Certification Application/Audit form:

5.1. Provide guidance on size or production of agricultural land.

5.6. The standard should state that information on estimated annual water use is collected with the intention of setting a standard on water use within five years. If current information is sufficient, a five-year water use goal should be stated in this standard similar to water quality criteria standards.

**BAP:** *Agreed. A new sentence has been added to the guidelines: Pooled, anonymous data for loads and indices will be used as the basis for setting metric standard(s) by June 2015.*

## 6. Sludge Management

The following changes should be made in the Guidance Document:

Justification for why 20mt/ha/crop was used as the cut-off point for sludge management protocols.

**BAP:** *At 20 mt/ha or less, the ponds would be managed without the need for removal of sludge. The relevant references are included in the guidelines.*

The following changes should be made in the Certification Application/Audit form:

6.4. Standards for sludge removal and disposal should be more specific, for example, prohibit disposal in wetland or mangrove areas, areas of critical habitat, or public water bodies.

**BAP:** *Clause 6.3 now states: The facility shall process all sludge in sedimentation basins and not dump sediment in sensitive wetland or mangrove areas, or public water bodies.*

## 7. Soil and Water Conservation

The following changes should be made in the Certification Application/Audit form:

7.1.1. The audit should give specific guidance as to practices and technologies that shall be used on farm to prevent salinization, such as the presence of liners, etc.

**BAP:** *More precision is now provided in the guidelines, which specify:*

*Several practices can be adopted to lessen the risk of salinization. One of the most important is to avoid constructing ponds in highly permeable, sandy soil, or to provide clay or plastic liners to minimize seepage. Other useful practices: Do not discharge saline water into freshwater areas. Avoid excessive pumping of groundwater from freshwater aquifers, and do not use freshwater from wells to dilute salinity in growout ponds. Monitor chloride concentration in freshwater wells near farms to determine if salinization is occurring.*

7.3.1. Should be elevated to critical, the use of well water should not be acceptable

**BAP:** *If well water is used, it should not lower the water table. This point is now reflected in clause 7.3.*

7.4. The term “ecological damage” should be further defined. This point puts a great burden on the auditor to determine both damage and acceptability of it. Consider reworking and clarifying this point.

7.6. Saline sludge should be disposed of to prevent salinization of freshwater resources.

**BAP:** *This important requirement is covered in the Guidelines and is covered in the critical clause 7.2, which requires monitoring of neighboring water bodies.*

## 8. Fishmeal and Fish Oil Conservation

The following changes should be made in the Guidance Document:

The standard should require the use of GAA-certified feed at a particular point in the future, for example, one year from this standard’s implementation or one year from the feedmill standard’s release, whichever is sooner. Interim requirements should be included, such as a signed commitment letter from the feed mill to obtain GAA certification, an action plan to meet the certification requirements and declaration that the feed materials meet the fishmeal/oil sourcing requirements at this time.

**BAP:** *Currently the demand for BAP feed is being driven by seafood buyers that specify “three-star” or “four-star” product from BAP facilities. GAA feels this voluntary, market-driven approach is more appropriate to achieve desired penetration rates and comprehensive coverage than mandating BAP feed. This allows farms to participate in BAP even when there are no BAP-certified feed mills available. Having said this, the approach remains subject to review by the SOC.*

GAA should require an FCR or fish-in:fish-out cap in this standard. This level should be decreased overtime, for example in three to five years in accordance with the stricter water quality controls from standard 5.

**BAP:** *Agreed. A sentence has been added to the guidelines: Anonymous, pooled FCR and fish in:fish out data shall be used to establish metric standard(s) before June 2015.*

The use of trash fish should be prohibited.

**BAP:** This is covered in standard 13 under the heading of “Microbial Sanitation.”

The following changes should be made in the Certification Application/Audit form:

A full ingredient list including fishmeal and fish oil sources shall be made available to farms from the feed mill upon request. This will also help identify other ingredients associated with environmental concerns such as soy products.

**BAP:** *Potentially, it is more effective to audit ingredients associated with environmental concerns at the level of the BAP feed mill standards.*

#### 9. Control of Escapes, Use of GMOs

The following changes should be made in the Guidance Document:

Prohibit the use of transgenic (gene transfer from other species) *Pangasius*.

**BAP:** *Transgenic Pangasius are not available yet. With other BAP standards, BAP insists that compliance with government regulations be demonstrated, and this is also the requirement in standard 9 for Pangasius.*

Prohibit the introduction of non-native species that are not already established in the area prior to this publication of this standard.

**BAP:** *With other BAP farm standards, compliance with government regulations must be demonstrated, and this is also the requirement in standard 9 for Pangasius.*

Insert a minimal survival or retention rate from stocking to harvest (adjust counting standard to a feasible fish size such as 80% retention of fish after they reach 100 g to harvest).

**BAP:** *Functionally, economic considerations already drive the need to obtain good survival rates, so we do not feel there is a need for BAP to be prescriptive. since farmers will always attempt to maximize their survival rates. Failure to do so undermines the feed-conversion rate and promptly leads to business failure.*

The following changes should be made in the Certification Application/Audit:

The guidance document discusses the potential for escapes due to flooding but the audit form does not have any requirements to this issue. Incorporate appropriate standards for pond edge height or flooding protection to eliminate or reduce the potential of escapes from flooding events. Exclude repeat offenders (two or more mass escapes in two years) from certification.

#### 10. Storage and Disposal of Farm Supplies

If it is to be that "shall" statements from the Guidance document correlate to "critical" points in the Audit Form this standard does not match up completely.

**BAP:** *The BAP documents have been revised to make all standards statements "shall" statements.*

The following changes should be made in the Guidance Document:

Oil leaks from tractors, trucks and other equipment shall be prevented through good maintenance.

Fertilizers, liming materials, salt and other less hazardous agricultural chemicals shall be stored under a roof, were rainfall will not wash them into surface water.

Procedures shall be developed for managing spills of oil, fuel, chemicals feed, fertilizers and other products. The equipment and supplies needed for managing and cleaning up these spills shall be readily available and accessible.

Select workers shall be trained to properly use the equipment and handle waste.

A plan shall be made for prompt and responsible disposal of massive mortalities of culture animals by incineration, burial, composting or removal by a competent contractor.

The following changes should be made in the Certification Application/Audit form:

A critical point should be added to address the requirement for secondary containment of storage tanks over 2,500 liters.

**BAP:** *Clause 10.8 on fuels storage is a “shall” statement.*

10.1. This should be more specific to align with regulations from the guidance document. A critical point should be added to address the disposal of waste in sensitive habitats such as wetland or mangroves.

**BAP:** *Clauses 10.1 and 10.6 address this risk.*

## 11. Animal Welfare

Animal welfare and harvest/transport considerations are linked, so combining these two standards may give a greater indication of “welfare” considerations.

The following changes should be made in the Guidance Document:

Greater detail should be given on “behavior and conditions,” such as detailing what to assess (fin condition, feeding rate, etc).

**BAP:** *Those examples were added to the guidelines.*

Percentage mortality should be recorded and potentially a cap set.

**BAP:** *The initial statement for standard 11 now says “maximum survival shall be sought.”*

Add a critical (shall) item for allowing or adequate pond drying times to break disease and parasite cycles for diseases in the area. Veterinary health professionals should create and sign the plan with evidence of compliance. A position and criteria should be added on chemical treatments of ponds for biosecurity.

**BAP:** *Health management plans and documentation on disease and treatments are covered in standard 12 under “Drug and Chemical Management.”*

Farmers must keep records on all diseases experienced along with mortalities, treatments and effectiveness of responses taken. Farmers must provide details on trends on diseases from certification onwards.

Add that “disease-free” status should be established prior to stocking and any time that fish are moved into other “open” systems.

The following changes should be made in the Certification Application/Audit:

11.3 (11.3.1-11.3.3) should be elevated to critical and limits should be set in accordance with the guidelines document.

**BAP:** *The new clauses are all “shall” statements.*

11.4. Should be edited to read “Are daily inspections of culture facility, water quality, behavior and conditions of fish performed? The point should also be elevated to critical.

**BAP:** *Regular inspections are a must, but we prefer not to specify a daily schedule.*

11.5. Should be elevated to critical. “Trained staff” should be changed to “veterinary health professional.”

**BAP:** *It is always a good thing to consult veterinary staff, but that level of expertise is not always necessary.*

## 12. Drug and Chemical Management

The following changes should be made in the Guidance Document:

Farms shall conduct a survey of chemical use in the surrounding watershed to evaluate potential sources of contamination. Certified facilities shall also routinely monitor changes in land use practices in the surrounding area that might affect chemical residue levels in farmed fish.

**BAP:** *A standards clause to this effect has been added.*

Add that farms must record volume of antibiotics and chemicals used per kg/production and provide details on trends from certification onwards.

The following changes should be made in the Certification Application/Audit form:

- 12.1. Elevate to critical.
- 12.3. Remove "that could result in residue in fish."
- 12.7. Elevate to critical.

**BAP:** *Clauses were made "shall" statements.*

### 13. Microbial Sanitation

The following changes should be made in the Guidance Document:

Farmers shall not use uncooked organisms and their by-products or trash fish as feed in fish ponds.

**BAP:** *Clause 13.3 says, "Uncooked organisms and their by-products shall not be used in growout ponds."*

The following changes should be made in the Certification Application/Audit form:

A critical point should be added to address the issue of others blocking access to the pond or farm by other livestock in the vicinity.

### 14. Harvest and Transport

The following changes should be made in the Certification Application/Audit form:

- 14.1. Elevate to critical.
- 14.2. Elevate to critical.
- 14.3. Elevate to critical and state minimum survival standard for live transport within three Years.

Incorporate a critical point to address the use of potable water for ice.

**BAP:** *See new clause 14.3.*

## Graham Charlton

Findus Group  
London, England

The one concern I have/had is still the ammonia nitrogen level of 5 ppm or less. Indications from Vietnam sources are that this would be hard to meet and results have been up to 20 ppm.

**BAP:** Although the 5-ppm effluent limit for ammonia nitrogen is a demanding standard, the same effluent water quality criteria are applied consistently across all BAP farm standards, demonstrating BAP's commitment to setting a "level playing field" globally. Some leading producers will be able to achieve these standards, and others will need to adopt improved management practices in order to comply. The BAP *Pangasius* farm standards back up effluent water quality criteria with strict controls on sludge, which may sometimes be pumped directly into the environment.

## Dr. John Forster

Forster Consulting, Inc.  
Port Angeles, Washington, USA

There is no standard specifically for fish health or biosecurity. In fact, I don't see biosecurity mentioned.

**BAP:** *There are some requirements in this standard (e.g., avoiding the use of uncooked organisms as food) aimed directly at improving biosecurity and many environmental requirements relating to effluent, sludge and feed, which improve biosecurity indirectly. This is consistent with the BAP standards for tilapia, channel catfish and shrimp. (See also comment below, and new audit clause, which will now specifically mention biosecurity). Important aspects of fish health management are addressed in standards 11 and 12 covering animal welfare and drug management.*

The escapes standard is rather weak by comparison with what is expected for salmon.

**BAP:** *These standards are strictly for pond culture, which is a very different environment than that for cages. Salmon life cycles are unique, with distinct subpopulations that return to home streams with risks of genetic contamination by farmed fish.*

There's nothing about wildlife interactions and dealing with predators other than audit questions 4.6 and 4.7, which cannot be tested.

### 10. Storage and Disposal of Farm Supplies

Standard 10 is about fuels, chemicals and refuse, yet slipped in there is an implementation requirement for a plan for removal of massive mortalities -- a biosecurity issue, and there is no audit question to test this.

**BAP:** The standard for responsible disposal of massive mortalities has been moved to standard 13.

In general, there seem to be lots of audit questions like "Does your facility obey the law, etc? How is a yes answer verified? I'm having the same sort of difficulty with some of the salmon issues. There seems little point putting a requirement in the implementation section that cannot then be tested.

**BAP:** *As an example, an auditor can check the records for predator control to verify that protected and red-listed species are not being killed. Backed up with interviews with employees to verify that the restrictions are being applied, this can be considered a useful (albeit far from perfect) way of spreading good practice and verifying legal compliance.*