COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 26.07.2006
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COMMISSION STAFF WORKING DOCUMENT

Draft comments of the Community on the report of the meeting of the OIE [World Organisation for Animal Health] Aquatic Animals Health Standards Commission [Paris March 2006] to be submitted for consideration in the meeting of the Aquatic Animals Standards Commission in October 2006.

For information only

This Commission Staff Working Document, includes only those Annexes to the report from the March meeting of the OIE AAC, to which the OIE have asked for comments by 10 September 2006.

INTRODUCTION

The OIE Aquatic Animals Commission met in Paris in March 2006. During that meeting amendments to those parts of the Aquatic Animal Health Code dealing with crustacean diseases and aquatic animal welfare issues were discussed, and included in Part B of the report from that meeting. The OIE has asked for comments to part B of the report to be submitted before 10 September 2006.

The written comments in the Annex have been elaborated in cooperation with the Member States during a working group meeting held on 12 June 2006. The comments are mainly of a technical and editorial nature.

The Commission therefore proposes to the Council to authorise the Commission to present to the OIE, as since 1995, the following written comments in the Annex before 10 September prior to the meeting referred to above. This is in order to allow the Aquatic Animals Standards Commission to take the Community comments into account during their meeting, in order to finalise the proposals for adoption at the General Session in May 2007. The cover letter to be sent with our response is attached as Annex A.

In order to facilitate the examination of the comments of the Community, they have been incorporated in boxes into the OIE reports. In this context, the Community thanks the OIE for providing the electronic version of the report even before the official version was sent out.

ANNEX A

EUROPEAN UNION

Brussels
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Subject: Meeting of the Aquatic Animals Standards Commission – October 2006

Dear Mr Vallat,

Please find attached as an annex to this letter the Community comments on the report of the meeting of the Aquatic Animals Standards Commission.

The European Community wish to thank the OIE for the efforts done by the Aquatic Animals Standards Commission to circulate the report so shortly after the meeting, in order to leave OIE Members sufficient time for reflection and elaboration of well prepared comments.

Thank you for the continued excellent collaboration and trust you will find our comments constructive and useful.

Paola Testori Coggi

Acting Deputy Director General

Enclosures: 1

Copy: All CVOs Member States, Bulgaria, Iceland, Norway, Romania and Switzerland

Dr. B. Vallat

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Original: English
March 2006

REPORT OF THE MEETING OF THE

OIE AQUATIC ANIMAL HEALTH STANDARDS COMMISSION

Paris, 13-17 March 2006

Community comment

The European Community appreciates the efforts done by the OIE AAC with respect to amendments of the Code. In genereal, the Community can agrees with the proposals for updates of the Code and the guidelines on welfare issues.

With reference to the intervation from the Community during the General Session in May, the Community would ask the OIE AAC to re-consider its position to request animal health certificates for non-viable molluscs or mollusc products, as well as eviscerated fish products. Taking into account their intended use and the nature of the commodities (which by nature cannot be for further farming), is unjustifiable.

Furthermore, the Community would also ask the OIE AAC to further assess the justification from the Community that for certain diseases, the trade in disinfected eggs should be considered as an alternative to requiring disease freedom, as these diseases are not transmitted vertically. This requirement may be included in the relevant fish disease chapters under Article X.1.1.7 and X.1.1.8. The reports from the EU funded study "Fish Egg Trade" will be submitted separately.

The OIE Aquatic Animal Health Standards Commission (hereafter referred to as the Aquatic Animals Commission) met at the OIE Headquarters from 13 to 17 March 2006. The meeting was chaired by Dr Eva-Maria Bernoth, President of the Commission, and Dr Ricardo Enriquez, Secretary General, acted as Rapporteur. Participants are listed at Appendix I. The Agenda adopted is given at Appendix II.

Dr Wilson, Deputy Director General of the OIE, welcomed the members and informed the Aquatic Animals Commission that, based on the standard development biannual cycle, both the August 2005 and this March 2006 reports would be distributed to OIE Delegates during the 74th General Session. He clarified that the list of diseases present in Chapter 1.1.3. of the OIE *Aquatic Animal Health Code* (hereafter referred to as the *Aquatic Code*) related to the reporting obligations of Member Countries and that the disease chapters served to assist Member Countries to develop their import regulations. The Aquatic Animals Commission agreed that there may be chapters in the OIE *Codes* and *Manuals* for diseases that are no longer listed but which would provide useful advice to Member Countries.

The Aquatic Animals Commission recognised the contribution of the following Member Countries in providing comments: Australia, Canada, Chile, Colombia, El Salvador, the European Community (EC), Japan, New Zealand, Norway, Panama, Paraguay, Thailand and the United States of America (USA).

The Aquatic Animals Commission examined various *Aquatic Code* texts from its August 2005 report in the light of Member Countries' comments. The outcome of the Aquatic Animals Commission's work is presented as appendices to the August 2005 report and to this report. Additions made during the August 2005 meeting are shown as double underlined text, with deleted text in strikeout, and those made at this meeting (March 2006) in a similar fashion but with a coloured background to distinguish the two groups of proposals.

The following texts in the table are proposed for adoption. The texts are included in the August 2005 report of the Aquatic Animals Commission; texts modified at the March 2006 meeting are presented in appendices in **Part A** of this report. Both reports will be in the Delegates' folders for the 74th General Session.

Issue	**Appendix number in the August 2005 report**	**Appendix number in the March 2006 report**
Definitions (Ch. 1.1.1.)	Appendix III	Appendix III
Disease listing and notification criteria (Ch. 1.1.2.)	Appendix IV	Appendix IV
Diseases listed by the OIE (Ch. 1.1.3.)	Appendix V	Appendix V
Infection with *Marteilia refringens* (Ch. 3.1.5.)	Appendix VI	Appendix VI
Infection with *Bonamia exitiosa* (Ch. 3.1.2.)	Appendix VII	Appendix VII

Infection with *Bonamia ostreae* (Ch. 3.1.1.)	Appendix VIII	Appendix VIII
Infection with *Haplosporidium nelsoni* (Ch. 3.1.4.)	Appendix IX	Appendix IX
Infection with *Mikrocytos mackini* (Ch. 3.1.7.)	Appendix X	Appendix X
Infection with *Perkinsus olseni* (Ch. 3.1.9.)	Appendix XI	Appendix XI
Infection with *Perkinsus marinus* (Ch. 3.1.8.)	Appendix XII	Appendix XII
Infection with *Xenohaliotis californiensis* (Ch. 3.1.11.)	Appendix XIII	Appendix XIII
Epizootic haematopoietic necrosis (Ch. 2.1.1.)	Appendix XIV	Appendix XIV
Infectious haematopoietic necrosis (Ch. 2.1.2.)	Appendix XV	Appendix XV
Spring viraemia of carp (Ch. 2.1.4.)	Appendix XVI	Appendix XVI
Viral haemorrhagic septicaemia (Ch. 2.1.5.)	Appendix XVII	Appendix XVII
Infectious salmon anaemia (Ch. 2.1.9.)	Appendix XVIII	Appendix XVIII
Epizootic ulcerative syndrome (Ch. 2.1.10.)	Appendix XIX	Appendix XIX
Blank appendix		Appendix XX
Red sea bream iridoviral disease (Ch. 2.1.15.)	Appendix XXI	Appendix XXI

The following texts are presented in **Part B** of this report for Member Countries' comment:

White spot disease (Chapter 4.1.2.) at Appendix XXII;

Taura syndrome (Chapter 4.1.1.) at Appendix XXIII;

Yellowhead disease (Chapter 4.1.3.) at Appendix XXIV;

Tetrahedral baculovirosis (Chapter 4.1.4.) at Appendix XXV;

Spherical baculovirosis (Chapter 4.1.5.) at Appendix XXVI;

Infectious hypodermal and haematopoietic necrosis (Chapter 4.1.6.) at Appendix XXVII;

Crayfish plague (Chapter 4.1.7.) at Appendix XXVIII;

Infectious myonecrosis (Chapter 4.1.9.) at Appendix XXIX;

Necrotising hepatopancreatitis (Chapter 4.1.10.) at Appendix XXX;

Animal Welfare Definitions (to be added to Chapter 1.1.1.) at Appendix XXXI;

Introduction to OIE guidelines for the welfare of aquatic animals at Appendix XXXII;

Guidelines for the transport of fish by boat at Appendix XXXIII;

Guidelines for the land transport of fish at Appendix XXXIV;

Guidelines for the slaughter of farmed fish for human consumption at Appendix XXXV;

Guidelines for the humane killing of fish for disease control purposes at Appendix XXXVI.

Member Countries are invited to submit their comments to the OIE on Part B of this report prior to 10th September 2006. The comments should be sent preferably by electronic mail to the following address: trade.dept@oie.int.

The following documents are presented in **Part C** of this report for Member Countries' information:

Report of the meeting of the teams comprising the OIE *ad hoc* Group on the List of Aquatic Animal Diseases at Appendix XXXVII;

Report of the meeting of the OIE *ad hoc* Group on the Chapters for Crustacean Diseases for the OIE *Aquatic Animal Health Code* at Appendix XXXVIII;

Report of the meeting of the OIE *ad hoc* Group on Aquatic Animal Transport at Appendix XXXIX;

Report of the meeting of the OIE *ad hoc* Group on the Slaughter and Killing of Aquatic Animals at Appendix XL;

Aquatic Animals Commission's work plan at Appendix XLI.

PART A:

1. Proposed chapters for the *Aquatic Animal Health Code*

1.1. General comments

Member Countries' comments addressed under this agenda item were those of a generic nature, the more specific ones being deferred to the relevant agenda items.

In response to a comment from Canada, the Aquatic Animals Commission agreed on the need to update the model health certificates through the involvement of experts familiar with their usage. Acknowledging the parallel work underway on the revision of the terrestrial certificates, the Aquatic Animals Commission decided to postpone any specific aquatic initiative until it examines the revised terrestrial certificates (see also item 3.2. below).

The EC suggested that the OIE provide guidance to Member Countries wishing to ask for animal health guarantees for diseases not listed by the OIE. The Aquatic Animals Commission considered this concept worthwhile exploring and invited the EC to provide further details on its proposal.

The EC expressed concern that new susceptible species were added to the OIE list of susceptible species without consulting the OIE Reference Laboratories. The Aquatic Animals Commission advised that it is OIE policy to submit these reports to OIE Reference Laboratories at the same time as the distribution to OIE Delegates. Furthermore, these reports are made publicly available on the OIE website.

The EC queried whether the standards in the *Aquatic Code* applied to ornamental aquatic animals, which were seen, in the EC's view, to pose a lower risk compared to farmed aquatic animals. The Aquatic Animals Commission advised that the beginning of each *Aquatic Code* chapter clearly stated that chapter's scope which – depending on the disease – may include ornamental species.. If an ornamental aquatic animal was listed as a susceptible species, then it was covered by the *Aquatic Code*. The Aquatic Animals Commission recognised that, in many regions of the world, ornamental aquatic animals were farmed and traded internationally in the same way as other live aquatic animals.

1.2. **Definitions (chapter 1.1.1.)**

The Aquatic Animals Commission appreciated the comments from Chile on the need for definitions on "case" and "epidemiological unit" and for providing constructive proposals for these. The Aquatic Animals Commission will consider these proposals at its next meeting.

Chile, the EC and the US commented on the proposed definitions for: *Competent Authority*, *Veterinary Administration* and *Veterinary statutory body*. The Aquatic Animals Commission advised that these proposed definitions were introduced as a step towards further harmonisation of the *Terrestrial* and *Aquatic Codes*. While the *Terrestrial Animal Health Code* (hereafter referred to as the *Terrestrial Code*) definitions were being reassessed, the proposed definitions for the *Aquatic Code* will be proposed to the OIE International Committee to advance further harmonisation.

The definitions proposed to the OIE International Committee for adoption at the 74th General Session in May 2006 are attached in Part A of this report, as Appendix III.

1.3. **Disease listing and notification criteria (chapter 1.1.2.)**

The Disease listing and notification criteria were revised by the Aquatic Animals Commission addressing Member Countries' comments. The "notification criteria" were removed from this chapter because they are already contained in Chapter 1.2.1. The revised Chapter is submitted to the OIE International Committee for adoption at the May 2006 General Session (part A of this report, Appendix IV).

1.4. **Revision of the list of diseases (chapter 1.1.3.)**

Some Member Countries expressed concerns about the proposed deletion of BKD, IPN and infection with *Mikrocytos mackini*. These concerns appeared to be based on

trade rather than reporting issues. The Aquatic Animals Commission would like to draw Member Countries' attention to the fact that while the list of diseases related to the reporting obligations of Member Countries, the disease-specific chapters in the *Aquatic Code* serve to assist Member Countries to develop their import regulations.. The Aquatic Animals Commission maintained its previous decision to propose the deletion of BKD, IPN and infection with *Mikrocytos mackini* from the OIE list of diseases.

The Aquatic Animals Commission was concerned that some Member Countries appeared to have misunderstood the use of the listing criteria for an emerging aquatic animal disease (e.g. abalone viral mortality). The Aquatic Animals Commission clarified that there is only one list of diseases (Chapter 1.1.3.), but two pathways for a disease to become listed: to meet the main criteria in Article 1.1.2.1., or to meet of criteria for listing an emerging aquatic animal disease in Article 1.1.2.2. The Aquatic Animals Commission recognised the need to review the status of diseases listed using the criteria for listing an emerging aquatic animal disease after an appropriate time period. This was added to its work plan.

The Aquatic Animals Commission maintained its previous decision to propose the addition of abalone viral mortality to the OIE list of diseases. The Aquatic Animals Commission wished to thank Chile for its constructive comments on the infections described in abalone and referred these to the *ad hoc* Group on the List of Aquatic Animal Diseases with the request to update the disease information card for abalone viral mortality. If the OIE International Committee adopts the addition of abalone viral mortality to the OIE list of diseases, the disease card will be published on the OIE website to assist Member Countries with reporting.

The Aquatic Animals Commission addressed the comments received from the US, Canada and Panama on *Marteilioides chungmuensis*. The Aquatic Animals Commission maintained its position that this parasite does not meet the listing criteria, especially because of a lack of quantitative data on disease impact as opposed to mere prevalence of the pathogen. This was consistent with the recommendations presented in Appendix B of the report of the *ad hoc* Group on the List of Aquatic Animal Diseases (Paris, 20-22 July 2005). However, the Aquatic Animals Commission invited Member Countries to provide new and detailed epidemiological information on this disease.

In considering the comment from Australia, the Aquatic Animals Commission stressed that the assessment for infection with *Perkinsus olseni* took into account the broad range of hosts and not only abalone.

Prof. Hill, the Chair of the finfish team of the *ad hoc* Group on the OIE List of Aquatic Animal Diseases for the OIE *Aquatic Code*, reported on the electronic discussion of the team. He recalled that, in its second report, the finfish team of the *ad hoc* Group on the OIE List of Aquatic Animal Diseases had concluded that most of the listing criteria were met for koi herpes virus disease (KHVD), but that an open scientific forum would be useful to clarify issues on those criteria that appeared to be less clearly met. He explained that at its meeting in August 2005, the Aquatic Animals Commission agreed with this approach and asked the finfish team to re-assess KHVD against the disease listing criteria taking into account information and opinion presented and debated at suitable international scientific fora. Prof. Hill

reported how these issues were subsequently debated at two international conferences and the outcome of the reassessment was presented to the Aquatic Animals Commission in the final report of the finfish team. The report of the *ad hoc* Group is appended for Member Countries information, in Part C of this report, at Appendix XXXVII.

The Aquatic Animals Commission accepted the conclusion and recommendation of the finfish team and maintained its previous view that KHVD should be listed by the OIE.

The Aquatic Animals Commission noted the US comment that *Oncorhynchus masou* virus disease (OMVD) should not have been delisted. The Aquatic Animals Commission recalled that the OIE International Committee in May 2005 adopted the recommendation to delist this disease. The Aquatic Animals Commission considered that the information provided by the US was insufficient to warrant re-consideration but invited the US to provide a full assessment against the listing criteria (Chapter 1.1.2.) to support its case for listing.

Thailand suggested that tetrahedral baculovirosis and spherical baculovirosis be delisted because of the easy control of both diseases by washing eggs and larvae. The Aquatic Animals Commission agreed to refer these comments to the crustacean team of the *ad hoc* Group on the List of Aquatic Animal Diseases.

The list of diseases proposed to the OIE International Committee for adoption at May 2006 General Session is attached in Part A of this report, at Appendix V.

1.5. **Revised chapters for fish and mollusc diseases**

The Aquatic Animals Commission clarified that the choice of a period of 25 years for the declaration of historical freedom was taken as the default based on the recommendations of the OIE *Terrestrial Code*; the same basis applied for the time period specified for targeted surveillance and the application of basic biosecurity conditions. The Aquatic Animals Commission reiterated that time periods for specific diseases would be modified in line with the information provided by the *ad hoc* Group on Surveillance. However, if Member Countries have relevant information, they are encouraged to submit it to the Aquatic Animals Commission. In the meantime, for mollusc disease chapters, the choice of 10 years to justify historical freedom is based on the relatively short lifecycle of the mollusc hosts and pathogens.

The EC queried the reason why the absence of susceptible species was not provided as an option for the declaration of freedom for VHS, as for the other fish diseases. The Aquatic Animals Commission recalled its previous decision (see August 2005 report):

> "*the pathway for a self-declaration of freedom based on the absence of susceptible species should only apply to pathogens with a known narrow host range.*"

The Aquatic Animals Commission specified that this would not apply to VHS.

New Zealand questioned the method used to select the susceptible species for each disease chapter. The Aquatic Animals Commission discussed this issue with the OIE Central Bureau and compared the approach to that used in the *Terrestrial Code*. As a further move towards harmonisation of the two Codes, the Aquatic Animals Commission decided to clarify in the *Aquatic Code* chapters which susceptible species are addressed by each chapter (e.g. those relevant for international trade). The Aquatic Animals Commission stressed that the full reference list of susceptible species for surveillance and notification purposes was present in each of the disease chapters of the Manual of Diagnostic Tests for Aquatic Animals (*Aquatic Manual*).

Addressing a comment from Norway and the EC on the list of commodities that could be traded with negligible risk (Article 3 of disease chapters), the Aquatic Animals Commission clarified that the listing of commodities under Article 3 needed to be supported by scientific data (other than for the generally agreed inactivation procedures) because the absence of evidence of risk alone does not justify a listing of a commodity as "safe".

The EC and Norway suggested to list eviscerated fish as a safe commodity even if not packaged for direct retail trade. The Aquatic Animals Commission was of the view that the listing of commodities under point 1b) of Article 3 also needed to be supported by scientific data. In this case, bulk consignments of eviscerated fish, not necessarily intended for direct consumption, would need to be demonstrated as safe even if they are intended for further processing.

Member Countries that have scientific evidence supporting the listing of commodities as safe are strongly encouraged to make that evidence available to the Aquatic Animals Commission. The identification of safe commodities in the disease chapters of the *Aquatic Code* is a new concept and at this stage only commodities that are safe without any doubt have been listed; for future editions of the *Aquatic Code*, the application of this concept will evolve and take into account scientific evidence demonstrating a negligible level of risk for other commodities.

Australia suggested that guidelines be developed for translocation of species known not to be susceptible to a given disease; these guidelines would facilitate trade in such species because they could replace the requirements for risk analysis. While the Aquatic Animals Commission recognised the usefulness of guidelines for safe translocation, it believed that the methods contained in such guidelines would need to be validated for a large variety of field situations.

Australia recommended that the scientific rationale for using different time periods in Articles 4 and 5 of all fish and mollusc disease chapters be provided to Member Countries. The Aquatic Animals Commission advised that these differences were justified by different host and pathogen lifecycles and disease seasonality. Details were provided by the Aquatic Animals Commission in its January 2005 report, in the relevant draft disease chapters.

The EC questioned the requirement of 2 years for targeted surveillance for new aquaculture establishments and for those wishing to restore their free status. The Aquatic Animals Commission recognised that the current text was better suited to zones and proposes that suggestions by the EC could be best addressed by a new text

specific for compartments; the Aquatic Animals Commission placed this item on its work plan. Such a new text would also address Norway's comments on regaining freedom for previously free compartments.

The EC, in Article 8, proposed that "not declared free" should not include "known to be infected" because this might mean that animals from infected areas could be moved into a declared disease free area. The Aquatic Animals Commission pointed out that as per the general approach in the *Terrestrial Code*, the *Aquatic Code* recognised only two status, i.e. "declared free" and "not declared free". The Aquatic Animals Commission also draws Member Countries' attention to the User's guide of the *Aquatic Code*:

> *"The recommendations in the Aquatic Code make reference only to the aquatic animal health situation in the exporting country, and assume that either the disease is not present in the importing country or is the subject of a control or eradication programme. Therefore, when determining its import measures, an importing country should do so in a way that is consistent with the principle of national treatment and the other provisions of the WTO SPS Agreement."*

In the first paragraph of Article 9, the EC suggested to use the word "may" instead of the word "should". The Aquatic Animals Commission disagreed because the recommendation is based on expert advice; Member Countries are free to apply more or less stringent measures than those prescribed in the *Aquatic Code* as long as they justify it with risk analysis.

Canada, the EC and the US questioned the list of susceptible species listed in Article 2.1.5.2. The Aquatic Animals Commission acknowledged the growing complexity concerning the host range for VHS virus and is awaiting the issue of strain differentiation for this virus to be resolved (see also item 6.4. below). The currently proposed list of susceptible species is taken from Article 2.1.5.1. of the *Aquatic Code*.

Canada, the EC, the US and Norway queried the list of susceptible species listed in Article 2.1.9.2. The Aquatic Animals Commission acknowledged their view and accordingly amended the scope of that Chapter.

The Aquatic Animals Commission acknowledged the comments received from Member Countries on the proposed chapter on *Gyrodactylus salaris* and decided to forward them to the *ad hoc* Group on Fish Disease Chapters of the OIE *Aquatic Code* for consideration and submission of a revised draft chapter for the October 2006 meeting of the Aquatic Animals Commission. Therefore, the Aquatic Animals Commission is not proposing an update of this chapter at the 2006 General Session.

Australia and Canada sought clarification on whether intermediate hosts for mollusc diseases had been considered, where applicable, as a means of transferring OIE listed diseases through international trade. The Aquatic Animals Commission (and the *ad hoc* Groups) had indeed given this some consideration but reached the conclusion that there was not enough scientific data to support such provisions at that time. In the case of infection with *Marteilia refringens*, although one species of copepod had been identified as an intermediate host, it was not known whether other species of copepod could be involved in the lifecycle of the parasite.

Australia also queried the discrepancies in the commodities listed under 1a) and 1b) of Article 3 and requested that the *ad hoc* Group provide the scientific basis for the decisions on these points. The Aquatic Animals Commission drew Member Countries' attention to the July 2005 report of the *ad hoc* Group on the Chapters for Mollusc Diseases for the OIE *Aquatic Code*, which provided this justification. The report had been appended to the report of the August 2005 Aquatic Animals Commission's report.

Australia queried whether the risks associated with any accompanying transport water had been considered when the inclusion of gametes, eggs and larvae in Article 3 had been proposed. The Aquatic Animals Commission will refer the question to the *ad hoc* groups for fish, molluscs and crustaceans for expert opinion.

Several Member Countries made a number of comments of a highly technical nature and sometime of diametrically opposed views on commodities. The Aquatic Animals Commission decided to refer these comments to the *ad hoc* Group on the Chapters for Mollusc Diseases for the OIE *Aquatic Code* which will provide a detailed response in their next report.

Canada queried whether pathogen-specific inactivation protocols or standards would be forthcoming in the *Aquatic Code* or *Aquatic Manual*. The Aquatic Animals Commission agreed on the necessity for such information. Such information will be provided as it becomes available.

The fish and mollusc disease chapters proposed to the OIE International Committee for adoption at the 74th General Session in May 2006 are in part A of this report, from Appendix VI to Appendix XXI.

1.6. **Date of last update for Code Chapters**

The Aquatic Animals Commission reviewed a table showing the date of the latest significant update for each disease chapter in the *Aquatic Code*. It agreed that it was useful for giving Member Countries an indication on the evolution of *Aquatic Code* chapters and requested the OIE Secretariat to introduce such a table in the *Aquatic Code* as soon as possible.

PART B

2. **New standards for the *Aquatic Animal Health Code***

2.1. **Revised chapters for crustacean diseases**

Community comment

The Community appreciates the efforts done by the OIE AAC with respect to amendments of the Code. In genereal, the Community can support the proposals for updates of the Code. Specific comments are given in the individual disease chapters.

However, the Community questions the relevance of points 2 and 3 of Articles 4.1.x.8 in all crustacean disease chapters. In accordance with the "Forword" and "Guide to the use of the Aquatic Animal Health Code", part 2, 3 and 4 of the Code are designed to prevent the disease in question being introduced into the importing country. Thus, the

Community would argue that guidance for establishing new genetic lines (as referred to in point 2 of Artciles 4.1.x.8), is beyond the scope of the disease chapters of the Code. The Community notes that such guidance is not included in any of the fish and mollusc disease chapters respectively. If the OIE retains the need for such guidance, they should be changed into guidelines for establishing (specific) pathogen free populations, and included in Part 5 of the Codeor published elsewhere (f.x. in a separate OIE publication series on animal disease control and eradication). The Community would be pleased to provide the OIE with assistance in drafting such guidance.

Furthermore the Community raise a concern about the use of reference in the Aquatic Code to documents outside the Aquatic Code (in this case the ICES guidelines), because of the unclearness of the validity of such external document and unclearness of the legitimacy of changes in the external documents will have

Prof. Lightner, the Chair of the *ad hoc* Group on the Chapters for Crustacean Diseases for the OIE *Aquatic Code*, reported on the October 2005 meeting of the *ad hoc* Group. The updated chapters on currently listed diseases were drafted in the format of the approved chapter on white spot disease. Two new chapters on diseases proposed for listing at the 74th General Session of the OIE International Committee in May 2006 were also drafted. The report of the *ad hoc* Group is appended for Member Countries' information, in Part C of this report, at Appendix XXXVIII.

The Aquatic Animals Commission revised the updated and new chapters in line with the modifications made to the fish and mollusc chapters.

These revised chapters are attached for Member Countries' comments, in Part B of this report, from Appendix XXII to Appendix XXX.

2.2. **Crustacean diseases recommended for listing**

Community comment

The Community agrees with the diseases recommended for listing

Prof. Lightner, the Chair of the crustacean team of the *ad hoc* Group on the OIE List of Aquatic Animal Diseases for the OIE *Aquatic Code*, reported on the October 2005 meeting of the team. Three significant crustacean diseases (white tail disease, infection with hepatopancreatic parvovirus and infection with Mourilyan virus) were assessed against the criteria in Articles 1.1.2.1. and 1.1.2.2. and were found to meet the latter i.e. the criteria for listing as an emerging aquatic animal disease. The *ad hoc* Group recommended their inclusion on the list of aquatic animal diseases.

The *ad hoc* Group updated its previous assessment of the two diseases currently listed as [under study] (necrotising hepatopancreatitis and infectious myonecrosis) in Chapter 1.1.3. of the *Aquatic Code*. The *ad hoc* Group concluded that these two

diseases met the listing criteria and therefore recommended the removal of the footnote denoting [under study].

The report of the *ad hoc* Group is appended for Member Countries' information, in Part C of this report, at Appendix XXXVII.

The Aquatic Animals Commission supported the *ad hoc* Group's recommendations and requested Member Countries' comments.

2.3. **New draft chapter on handling and disposal of carcasses and wastes of aquatic animals**

Prof. Håstein, who is a member of Working Group on Animal Welfare, joined the meeting.

The Aquatic Animals Commission noted the proposed Appendix 3.6.5. entitled "General guidelines for the disposal of dead animals" for the *Terrestrial Code* and compared it with draft guidelines on handling and disposal of carcasses and wastes of aquatic animals which had been prepared by Prof. Håstein.

The Aquatic Animals Commission decided to await the adoption of the equivalent Appendix for the *Terrestrial Code* before submitting a revised draft for the *Aquatic Code* for Member Countries' comments.

2.4. **New draft chapters on aquatic animal welfare**

Community comment

The European Community appreciates the important initiative by the OIE to prepare new chapters on aquatic animal welfare. The Community supports this work and specific drafting comments are given in the individual draft chapters.

Dr Pinto, Deputy Head of the International Trade Department, participated in this agenda item.

Prof. Håstein briefed the Aquatic Animals Commission on the outcomes of the meetings of the two *ad hoc* Groups on aquatic animal welfare, particularly on the principles for the welfare of aquatic animals and the proposed guidelines for the slaughter of farmed fish for human consumption, guidelines for the humane killing of fish for disease control purposes, guidelines for transport by land , and guidelines for transport by sea. The reports of the two *ad hoc* Groups are appended for Member Countries' information, in Part C of this report, at Appendix XXXIX and Appendix XL.

As a result of recommendations made by the OIE Working Group on Animal Welfare during its meeting in September 2005, the principles for aquatic animal welfare were harmonised to the extent possible with the corresponding text contained in the *Terrestrial Code*.

The Aquatic Animals Commission acknowledged and supported the quality of the work of the *ad hoc* Groups chaired by Prof. Håstein.

The Aquatic Animals Commission discussed the scope of the new draft chapters and clarified that, while the general principles apply to all aquatic animals, these specific guidelines for transport, killing and slaughter currently cover only fish. It is intended to develop guidelines on crustacean welfare at a later stage.

The Aquatic Animals Commission modified some of the text; the guidelines on principles and the four proposed chapters are attached for Member Countries' comments, in Part B of this report, from Appendix XXXI to Appendix XXXVI.

2.5. **New work on antimicrobial resistance in the field of aquatic animals**

Dr Erlacher-Vindel, Deputy Head of the Scientific and Technical Department, informed the Aquatic Animals Commission on the forthcoming FAO/WHO/OIE expert consultation on Antimicrobial Usage in Aquaculture and Resistance which will take place in Seoul (Republic of Korea) from 13 to 17 June 2006.

Copies of the documents related to the call for experts and the request for information were provided to the Members of the Aquatic Animals Commission and can be found on the OIE website (calendar June 2006:Joint FAO/WHO/OIE Expert Consultation on Antimicrobial Use in Aquaculture and Antimicrobial Resistance: http://www.oie.int/eng/manifestations/en_manifs.htm).

Some scientists and other experts were already contacted by mail. The Members of the Aquatic Animals Commission were invited to provide names of additional relevant experts to Dr Erlacher-Vindel before 24th March 2006. The final selection of 20 to 25 experts will be made by FAO/WHO and OIE at the beginning of April 2006.

The Aquatic Animals Commission addressed the existing standards present in the *Terrestrial Code* and agreed to wait for the outcomes of the Expert Consultation before deciding on the need to include similar chapters in the *Aquatic Code*.

2.6. **New work on aquatic animal feed**

The Aquatic Animals Commission prepared terms of reference and suggested members for the OIE *ad hoc* Group on Aquatic Animal Feed and requested the Director General to convene a meeting of the *ad hoc* Group as soon as possible.

2.7. **Including diseases of amphibians in the remit of the Commission**

The Aquatic Animals Commission prepared terms of reference and suggested members for the OIE *ad hoc* Group on Amphibian Diseases and requested the Director General to convene a meeting of the *ad hoc* Group as soon as possible.

3. **Joint meeting with the President of the Terrestrial Animal Health Standards Commission**

3.1. **Continuing work on harmonisation of horizontal chapters in the *Aquatic* and *Terrestrial Codes* - Zoning and compartmentalisation (Chapter 1.4.4)**

Dr Thiermann, the President of the Terrestrial Code Commission, joined the meeting. He illustrated the work conducted by the Terrestrial Code Commission on compartmentalisation by proposing an updated chapter to the 2006 OIE General Session. He also explained the work underway in OIE on the development of a document providing examples on the practical application of the concept of compartmentalisation to avian influenza.

The Aquatic Animals Commission agreed to wait for the outcomes of the 2006 OIE General Session before updating the chapter on zoning in the *Aquatic Code*.

3.2. **Revision of model health certificates**

Dr Thiermann also briefed the Aquatic Animals Commission on the future work in the Terrestrial Code Commission for updating model certificates for the *Terrestrial Code*. The Aquatic Animals Commission agreed on the need to review the outcomes of this work prior taking the decision of revising its own model certificates.

4. **Joint meeting with the Animal Health Information Department**

Dr Ben Jebara, Head of the Animal Health Information Department, participated in this agenda item.

Dr Ben Jebara informed the Aquatic Animals Commission that the World Animal Health Information System (WAHIS) would be launched soon. The Delegates and national focal points will be provided with password-protected access. Immediate notification and six-monthly reports can now be entered on-line into WAHIS. The new system will increasingly search for discrepancies in information submitted by Member Countries. This will include comparison with the news media and the scientific literature.

Dr Ben Jebara noted that it has already proven useful to have a slightly different data entry form for aquatics compared to that for terrestrial animals but suggested that minor modifications could further improve the aquatic form.

The new data output system, World Animal Health Information Database (WAHID), will for a period of time run concurrently with the old HandiStatus system.

5. Joint meeting with the Publications Department

5.1 OIE Scientific and Technical Review: issue on aquatic animal health

The Aquatic Animals Commission was joined by Dr Raymond Dugas and Ms Annie Souyri, respectively Head and Deputy Head of the Publications Department. The Commission discussed and agreed the draft table of contents and proposed authors for the issue of the OIE *Scientific and Technical Review* on Changing Trends in Managing Aquatic Animal Disease Emergencies. This issue will now be published in April 2008.

6. The role and activities of the OIE in the field of aquatic animals health

For this agenda item, the meeting was joined by Dr Bruckner, Head of the OIE Scientific and Technical Department, and Ms Suarez.

6.1. Regional Commission Conferences

The Commission noted the schedule for the upcoming Regional Commission Conferences and agreed the following representation of the Commission to give follow-up presentations on developments in aquatic animal health:

Regional Commission for Europe (September 2006): Prof. Hill, Vice President of the Aquatic Animals Commission.

Regional Commission for the Americas (November 2006): Dr Ricardo Enriquez, Secretary General of the Aquatic Animals Commission.

6.2. Regional meeting: *ad hoc* Group for the Americas on Aquatic Animals

Dr Enriquez reported on the above-mentioned meeting in which he had presented the activities of the Aquatic Animals Commission. His presentation included explanations on the disease-listing criteria, the new definitions, the importance of national focal points for disease-reporting purposes, and the importance of safe commodities in the new disease chapters in the *Aquatic Code*. He also informed the participants on the OIE Global Conference on Aquatic Animal Health.

The Aquatic Animals Commission noted the report drafted by Dr Luis Barcos on that meeting and was impressed with the progress made to date and the *ad hoc* group's activities, e.g. the creation of permanent secretariat and technical working groups. Funds had also been received to ensure translation of the *Aquatic Manual* into Spanish.

6.3. International Symposium on Veterinary Epidemiology and Economics, August 2006

On behalf of the Aquatic Animals Commission, Dr Enriquez had submitted a proposal on OIE definitions in aquatic animal epidemiology for the next ISVEE meeting. A response has not yet been received. Therefore, it remains unclear what, if any, activity the Aquatic Animals Commission will have at this Conference.

6.4. First International Conference of OIE Reference Laboratories and Collaborating Centres, December 2006

Community comment

The Community will draw the attention of the OIE AAC to a meeting arranged by the OIE Reference laboratory for VHS, acting as Community Reference Laboartory for Fish Diseases in Copenhagen 22-24 May. In this meeting, one of the major topics discussed was a possible strain differentiation. The Community will be pleased to provide the OIE AAC with the report and abstracts from that meeting, to facilitate the planned OIE reference Laboratory meeting.

In considering the content of this conference, the Aquatic Animals Commission agreed that it would beuseful to hold a special workshop for the OIE Reference Laboratories for aquatic animal diseases at which the issue of pathogenic agent strain differentiation could be addressed. The Aquatic Animals Commission recognised that this is a crucial issue as illustrated by the many Member Country comments that were recently received on this topic. The Aquatic Animals Commission is working on a position paper to provide guidelines on listing and notification of diseases by strain/genotype, with multiple examples in finfish, mollusc and crustacean diseases where differences in virulence have been documented for different strains/genotypes of the pathogenic agents of listed diseases.

The Conference will provide the opportunity to strengthen relations between the Aquatic Animals Commission and the network of OIE Reference Laboratories.

6.5. Global Conference on Aquatic Animal Health, October 2006

A meeting of the Scientific Committee was held in parallel with the Aquatic Animals Commission's meeting. The Scientific Committee finalised the draft programme for the Global Conference for the approval of the Steering Committee.

7. *Manual of Diagnostic Tests for Aquatic Animals*

7.1. Review of Member Countries' and Reviewers' comments on the introductory and disease chapters for the 5th edition of the *Aquatic Manual*

Comments had been received from reviewers and from the following Member Countries: Australia, Canada, the EC, Japan, New Zealand, South Africa, Switzerland and the US. The Commission addressed some of the technical comments but referred the highly specificones to the OIE designated experts who update the chapters. The experts will be asked to address these comments before the *Aquatic Manual* is proposed for adoption during the OIE General Session in May 2006.

Some Member Countries pointed out non-technical issues, such as a lack of consistency in the contents of sections 4, 5 and 6 within and among the chapters. The Commission agreed with most of these concerns and will address them for the next update.

Several Member Countries referred to discrepencies between the susceptible species listed in the *Aquatic Manual* chapters and those listed in the *Aquatic Code* chapters. The reason for this is because the purpose of the *Aquatic Code* is to provide guidelines for species involved in international trade while the *Aquatic Manual* provides technical guidelines for diagnostic and surveillance purposes in a wider range of species.

A number of comments had been received on aquatic animal health surveillance (see item 7.2. below). These will be addressed by the *ad hoc* group on Surveillance.

The Aquatic Animals Commission expressed concern about the increasing volume of issues relating to the *Aquatic Manual* and agreed that such issues should in first instance be addressed by a special *ad hoc* group (of fish, mollusc and crustacean disease experts) with an editorial focus. The Aquatic Animals Commission agreed that greater coordination of the three chapters, General Information on Diseases of Fish, Molluscs and Crustaceans, respectively, is also needed, because these chapters lay the foundations for the subsequent disease-specific chapters; improved consistency between these chapters would aid readability and assist in minimising confusion for readers. The proposed ad hoc group could be asked to revise chapters 1.1, 1.2 and 1.3. accordingly.

7.2. Guidelines for aquatic animal health surveillance

The Aquatic Animals Commission prepared terms of reference and suggested members for the OIE *ad hoc* Group on Aquatic Animal Health Surveillance, and requested the Director General to convene a meeting of the *ad hoc* Group as soon as possible.

7.3. Shortcomings/obsolete OIE tests

The Commission has been made aware of a publication that argues that the OIE method described in one of the chapters in the *Aquatic Manual* gives false positive results and, in the opinion of the authors, is in need of urgent revision. On reading the paper, the Commission noted that the false positives reported were the result of an improperly run assay in the authors' laboratory. This issue highlights the importance of following specific instructions for assays listed in the *Aquatic Manual*.

8. OIE Reference Laboratories

8.1. Updating the list of Reference Laboratories

Community comment

The Community supports the nomination of Dr Isabelle Arzul as the experts on the said diseases.

The Commission reviewed the application by Reference Laboratory for *Bonamia ostreae*, *B. exitiosa*, *Mikrocytos roughleyi*, *Marteilia sydneyi* and *M. refringens* for new expert designation. The Commission reviewed the application and recommends the acceptance of Dr Arzul.

8.2. Review of annual reports

The Commission was pleased to note that all 27 laboratories had submitted their annual reports. There was a wide variation in the amount and detail of information provided. The Commission proposes to add a review of the purpose and content of

the annual reports of OIE Reference Laboratories to the agenda of the First OIE Conference for Reference Laboratories and Collaborating Centres (see item 6. 4 above).

9. Any other business

9.1. Update of the Commission's web pages

The meeting was joined by Dr Chaisemartin who provided an update on the plan for the revision of the OIE website and invited suggestions from the Aquatic Animals Commission on what improvements can be made, including any on the Aquatic Animals Commission's specific pages.

Prof. Hill drew the Aquatic Animals Commission's attention to the fact that the International Database on Aquatic Animal Diseases now displays the current list of aquatic animal diseases consistent with how it is displayed in the 2005 edition of the *Aquatic Code*. Prof. Hill pointed out that information on diseases removed from the list in the *Aquatic Code* is now maintained under a separate category of "previously listed diseases".

9.2. Review of the Aquatic Animals Commission's work plan for 2006-2007

Community comment

The Community supports the proposed work plan.

The Aquatic Animals Commission expressed their concern about the substantial increased work load, both in terms of volume as well as demand arising from several new initiatives, for example, the increasing complexity of *Aquatic Manual* text (see item 7.1. above). The Aquatic Animals Commission is of the opinion that this can be mitigated through the establishment of one or more groups to assist in reviewing and revising future editions of the *Aquatic Manual*. The Aquatic Animals Commission requests the Director General to consider this matter.

The Commission reviewed its work plan for 2006-2007. The work plan is appended in Part C of this report, at Appendix XLI for Member Countries' information.

9.3. Date of the next meeting

The Aquatic Animals Commission proposed to meet on 2-6 October 2006.

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1. .../Appendices

Appendix I

MEETING OF THE OIE

AQUATIC ANIMAL HEALTH STANDARDS COMMISSION

Paris, 1-5 August 2005

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Adopted Agenda

1. Proposed chapters for the Aquatic Animal Health Code

1.1 General comments

1.2 Definitions (chapter 1.1.1.)

1.3 Disease listing and notification criteria (chapter 1.1.2.)

1.4 Revision of the list of diseases (chapter 1.1.3.)

1.5 Revised chapters for fish and mollusc diseases

1.6 Date of last update for Code Chapters

2. New standards for the Aquatic Animal Health Code

2.1 Revised chapters for crustacean diseases

2.2 Crustacean diseases recommended for listing

2.3 New draft chapter on handling and disposal of carcasses and wastes of aquatic animals

2.4 New draft chapters on aquatic animal welfare

2.5 New work on antimicrobial resistance in the field of aquatic animals

2.6 New work on aquatic animal feed

2.7 Including diseases of amphibians in the remit of the Commission

3. Joint meeting with the President of the Terrestrial Animal Health Standards Commission

3.1 Continuing work on harmonisation of horizontal chapters in the *Aquatic* and *Terrestrial Codes* - Zoning and compartmentalisation (Chapter 1.4.4)

3.2 Revision of model health certificates

4. Joint meeting with the Animal Health Information Department

5. Joint meeting with the Publications Department

5.1 OIE *Scientific and Technical Review*: issue on aquatic animal health

Appendix I (contd)

6. The role and activities of the OIE in the field of aquatic animal health

6.1 Regional Commission Conferences

6.2 Regional meeting: *ad hoc* Group for the Americas on Aquatic Animals

6.3 International Symposium on Veterinary Epidemiology and Economics, August 2006

6.4 First International Conference of OIE Reference Laboratories and Collaborating Centres, December 2006

6.5 Global Conference on Aquatic Animal Health, October 2006

7. Manual of Diagnostic Tests for Aquatic Animals

7.1 Review of Member Countries' and Reviewers' comments on the introductory and disease chapters for the 5th edition of the *Aquatic Manual*

7.2 Guidelines for aquatic animal health surveillance

7.3 Shortcomings/obsolete OIE tests

8. OIE Reference Laboratories

8.1 Updating the list of Reference Laboratories

8.2 Review of annual reports

9. Any other business

9.1 Update of the Commission's web pages

9.2 Review of the Aquatic Animals Commission's work plan for 2006-2007

9.3 Date of the next meeting

MEETING OF THE OIE

AQUATIC ANIMAL HEALTH STANDARDS COMMISSION

Paris, 13-17 March 2006

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4. Appendix II (contd)

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Appendix XXII

CHAPTER 4.1.2.

WHITE SPOT DISEASE

Article 4.1.2.1.

For the purposes of the *Aquatic Code*, white spot disease (WSD) means infection with white spot syndrome virus (WSSV). ~~the viral species~~ *White spot syndrome virus 1* is classified as a species in the genus *Whispovirus* of the family *Nimaviridae*. Common synonyms are listed in Chapter 4.1.2. of the *Aquatic Manual*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.2.2.

~~**Susceptible species**~~ **Scope**

The recommendations in this Chapter apply to ~~For the purposes of this *Aquatic Code*, *susceptible species* for WSD are~~: all decapod (order *Decapoda*) crustaceans from marine, ~~and~~ brackish ~~or~~ and freshwater sources. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

~~Suspected cases of natural infection with WSSV in species other than those listed in this Article should be referred immediately to the appropriate OIE Reference Laboratory, whether or not clinical signs are associated with the findings.~~

Article 4.1.2.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential WSSV carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities* ~~(under study)~~, *Competent Authorities* of the *importing country* should not require any WSD related conditions, regardless of the WSD status of the *exporting country*, *zone* or *compartment*.

   a) For the species in Article 4.1.2.2. for any purpose:

      i) commercially-sterile canned products;

      ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

      iii) chemically extracted chitin;

      iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

      v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

      vi) biological samples preserved for diagnostic applications in such a manner as to inactivate WSSV (e.g. formalin or alcohol preserved samples).

   b) The following products destined for human consumption from species in Article 4.1.2.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

      i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

      ii) products that have been heat treated ~~cooked~~ or dried ~~products~~ (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen.

   ~~c) For species other than those listed in Article 4.1.2.2., all *aquatic animal products*.~~

   For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the ~~following~~ *commodities* of a species referred to in Article 4.1.2.2., other than those listed in point 1 of Article 4.1.2.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.2.7. to 4.1.2.11., relevant to the WSD status of the *exporting country*, *zone* or *compartment*:

   ~~a) *aquatic animals*;~~

   ~~b) *aquatic animal products*.~~

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.2.2. ~~not listed above~~ but which could be reasonably expected to be a potential WSSV carrier from an *exporting country*, *zone* or *compartment* not declared free of WSD, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of WSSV and the potential consequences associated with importation of the *commodity*, prior to a decision. ~~The outcome of this assessment should be made available to the *exporting country*.~~ The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.2.4.

White spot disease free country

A country may make a *self-declaration of freedom* from WSD if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a ~~*water catchment* or coastal~~ *zone* with one or more other countries, it can only make a *self-declaration of freedom* from WSD if all the areas covered by the shared water are declared WSD free countries or zones (see Article 4.1.2.5.).

1. A country where none of the *susceptible species* ~~species listed in Article 4.1.2.2~~. is present may make a *self-declaration of freedom* from WSD when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years[1].

OR

2. A country where the species referred to in Article 4.1.2.2. are present but there has never been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from WSD when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from WSD when:

a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of WSSV.

OR

4. A country that has previously made a *self-declaration of freedom* from WSD but in which the disease is subsequently detected may not make a *self-declaration of freedom* from WSD again until the following conditions have been met:

a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of WSSV.

In the meantime, ~~one or more areas of the remaining *territory* may be declared free *zones*~~, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.2.5.

Article 4.1.2.5.

Community comment

[1] ~~The typical life cycle for susceptible species is 2 years or less. Under conditions conducive to disease expression, this period is required because it would cover the time period in which the most susceptible life stage (i.e. juvenile) is present.~~

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from WSSV but in which the disease is detected may not be declared free from WSD again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

White spot disease free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from WSD may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared a WSD free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* ~~species listed in Article 4.1.2.2.~~ is present may be declared free from WSD when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.2.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from WSD when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from WSD when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of WSSV.

OR

4. A *zone* previously declared free from WSD but in which the disease is detected may not be declared free from WSD again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of WSSV.

Article 4.1.2.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from WSD following the provisions of points 1) or 2) of Articles 4.1.2.4. or 4.1.2.5., as relevant, may maintain its status as WSD free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from WSD following the provisions of point 3) of Articles 4.1.2.4. or 4.1.2.5., as relevant, may discontinue *targeted surveillance* and maintain its status as WSD free provided that conditions that are conducive to clinical expression of WSD, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of WSD, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of ~~re~~infection.

Article 4.1.2.7.

Importation of live animals from a country, zone or compartment declared free from white spot disease

When importing live *aquatic animals* of the species referred to in Article 4.1.2.2. from a country, *zone* or *compartment* declared free from WSD, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.2.4. or 4.1.2.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from WSD.

The certificate ~~shall~~ should be in accordance with the Model Certificate ~~No. 4 given in Part 6. of this *Aquatic Code*~~ in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.2.3.

Article 4.1.2.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared free from white spot disease

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.2.2 from a country, *zone* or *compartment* not declared free from WSD, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

   a) the consignment is delivered directly into and held in *quarantine* facilities; and

   b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

   c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of WSSV.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

   a) identify stock of interest (cultured or wild) in its current location;

   b) evaluate stock's health/disease history;

   c) take and test samples for WSSV, pests and general health/disease status;

   d) import and quarantine in a secure facility a founder (F-0) population;

   e) produce F-1 generation from the F-0 stock in *quarantine*;

   f) culture F-1 stock and at critical times in its development (life cycle) sample and test for WSSV and perform general examinations for pests and general health/disease status;

   g) if WSSV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as WSD free or specific pathogen free (SPF) for WSSV;

   h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.2.3.

Article 4.1.2.9.

Importation of live animals for ~~processing and/or~~ human consumption from a country, zone or compartment not declared free from white spot disease

When importing, for ~~processing and/or~~ human consumption, *aquatic animals* of the species referred to in Article 4.1.2.2. from a country, *zone* or *compartment* not declared free from WSD, the *Competent Authority* of the *importing country* should require that ~~assess the risk and apply risk mitigation measures such as~~:

1. the consignment is delivered directly to and held in isolation ~~*quarantine* facilities for a short period before for a short period before~~ until ~~processing and/or~~ consumption; and

2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of WSSV.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.2.3.

Article 4.1.2.10.

Importation of products from a country, zone or compartment declared free from white spot disease

When importing *aquatic animal products* of the species referred to in Article 4.1.2.2. from a country, *zone* or *compartment* free from WSD, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.2.4. or 4.1.2.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from WSD.

The certificate ~~shall~~ should be in accordance with the Model Certificate ~~No. [X]~~ in Appendix 6.5.1. ~~given in Part 6. of this *Aquatic Code*.~~

This Article does not apply to *commodities* listed in point 1) of Article 4.1.2.3.

Article 4.1.2.11.

Importation of products from a country, zone or compartment not declared free from white spot disease

When importing *aquatic animal products* of the species referred to in Article 4.1.2.2. from a country, *zone* or *compartment* not declared free from WSD, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.2.3.

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Appendix XXIII

CHAPTER 4.1.1.

TAURA SYNDROME

Article 4.1.1.1.

For the purposes of the *Aquatic Code*, Taura syndrome (TS) means infection with Taura syndrome virus (TSV). *Taura syndrome virus* is classified as a species in the family *Dicistroviridae*. Common synonyms are listed in Chapter 4.1.1. of the *Aquatic Manual*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.1.2.

Scope

The recommendations in this Chapter apply to: Pacific white shrimp or whiteleg shrimp (*Litopenaeus vannamei*), blue shrimp (*L. stylirostris*), northern white shrimp (*L. setiferus*), southern white shrimp (*L. schmitti*), greasyback prawn (*Metapenaeus ensis*) and giant tiger prawn (*Penaeus monodon*). These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Article 4.1.1.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential TSV carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any TS related conditions, regardless of the TS status of the *exporting country*, *zone* or *compartment*.

   a) For the species in Article 4.1.1.2. for any purpose:

      i) commercially-sterile canned products;

      ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

      iii) chemically extracted chitin;

      iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

      v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

      vi) biological samples preserved for diagnostic applications in such a manner as to inactivate TSV (e.g. formalin or alcohol preserved samples).

   b) The following products destined for human consumption from species in Article 4.1.1.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

      i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

      ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen.

   For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.1.2., other than those listed in point 1 of Article 4.1.1.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.1.7. to 4.1.1.11., relevant to the TS status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.1.2. but which could be reasonably expected to be a potential TSV carrier from an *exporting country*, *zone* or *compartment* not declared free of TS, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of TSV and the potential consequences associated with importation of the *commodity*, prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.1.4.

Taura syndrome free country

A country may make a *self-declaration of freedom* from TS if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from TS if all the areas covered by the shared water are declared TS free countries or zones (see Article 4.1.1.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from TS when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.1.2. are present but there has never been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from TS when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from TS when:

   a) *basic biosecurity* conditions have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of TSV.

OR

4. A country that has previously made a *self-declaration of freedom* from TS but in which the disease is subsequently detected may not make a *self-declaration of freedom* from TS again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of TSV.

   In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.1.5.

Article 4.1.1.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from TSV but in which the disease is detected may not be declared free from TSV again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Taura syndrome free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from TS may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared a TS free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from TS when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.1.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from TS when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from TS when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of TSV.

OR

4. A *zone* previously declared free from TS but in which the disease is detected may not be declared free from TS again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was

established; and

b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of TSV.

Article 4.1.1.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from TS following the provisions of points 1) or 2) of Articles 4.1.1.4. or 4.1.1.5., as relevant, may maintain its status as TS free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from TS following the provisions of point 3) of Articles 4.1.1.4. or 4.1.1.5., as relevant, may discontinue *targeted surveillance* and maintain its status as TS free provided that conditions that are conducive to clinical expression of TS, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of TS, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.1.7.

Importation of live animals from a country, zone or compartment declared free from Taura syndrome

When importing live *aquatic animals* of the species referred to in Article 4.1.1.2. from a country, *zone* or *compartment* declared free from TS, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.1.4. or 4.1.1.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from TS.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.1.3.

Article 4.1.1.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared

free from Taura syndrome

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.1.2. from a country, *zone* or *compartment* not declared free from TS, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

    a) the consignment is delivered directly into and held in *quarantine* facilities; and

    b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

    c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of TSV.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

    a) identify stock of interest (cultured or wild) in its current location;

    b) evaluate stock's health/disease history;

    c) take and test samples for TSV, pests and general health/disease status;

    d) import and quarantine in a secure facility a founder (F-0) population;

    e) produce F-1 generation from the F-0 stock in *quarantine*;

    f) culture F-1 stock and at critical times in its development (life cycle) sample and test for TSV and perform general examinations for pests and general health/disease status;

    g) if TSV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as TS free or specific pathogen free (SPF) for TSV;

    h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.1.3.

Article 4.1.1.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from Taura syndrome

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.1.2. from a country, *zone* or *compartment* not declared free from TS, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and
2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of TSV.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.1.3.

Article 4.1.1.10.

Importation of products from a country, zone or compartment declared free from Taura syndrome

When importing *aquatic animal products* of the species referred to in Article 4.1.1.2. from a country, *zone* or *compartment* free from TS, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.1.4. or 4.1.1.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from TS.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.1.3.

Article 4.1.1.11.

Importation of products from a country, zone or compartment not declared free from Taura syndrome

When importing *aquatic animal products* of the species referred to in Article 4.1.1.2. from a country, *zone* or *compartment* not declared free from TS, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.1.3.

CHAPTER 4.1.3.

YELLOWHEAD DISEASE

Article 4.1.3.1.

For the purposes of the *Aquatic Code*, yellowhead disease (YHD) means infection with yellow head virus (YHV). YHV and the related *Gill-associated virus* are classified as a species in the genus *Okavirus*, family *Roniviridae*, order *Nidovirales*. Common synonyms are listed in Chapter 4.1.3. of the *Aquatic Manual*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.3.2.

Scope

The recommendations in this Chapter apply to: giant tiger prawn (*Penaeus monodon*), brown tiger prawn (*P. esculentus*) and Kuruma prawn (*Marsupenaeus japonicus*). These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Article 4.1.3.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential YHD carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any YHD related conditions, regardless of the YHD status of the *exporting country*, *zone* or *compartment*.

a) For the species in Article 4.1.3.2. for any purpose:

i) commercially-sterile canned products;

ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

iii) chemically extracted chitin;

iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

vi) biological samples preserved for diagnostic applications in such a manner as to inactivate YHV (e.g. formalin or alcohol preserved samples).

b) The following products destined for human consumption from species in Article 4.1.3.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen.

For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.3.2., other than those listed in point 1 of Article 4.1.3.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.3.7. to 4.1.3.11., relevant to the YHD status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.3.2. but which could be reasonably expected to be a potential YHV carrier from an *exporting country*, *zone* or *compartment* not declared free of YHD, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of YHV and the potential consequences associated with importation of the *commodity*, prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.3.4.

Yellowhead disease free country

A country may make a *self-declaration of freedom* from YHD if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from YHD if all the areas covered by the shared water are declared YHD free countries or zones (see Article 4.1.3.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from YHD when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.3.2. are present but there has never been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from YHD when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from YHD when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of YHV.

OR

4. A country that has previously made a *self-declaration of freedom* from YHD but in which the disease is subsequently detected may not make a *self-declaration of freedom* from YHD again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of YHV.

   In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.3.5.

Article 4.1.3.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from YHV but in which the disease is detected may not be declared free from YHV again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Yellowhead disease free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from YHD may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared a YHD free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from YHD when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.3.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from YHD when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from YHD when:

    a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

    b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of YHV.

OR

4. A *zone* previously declared free from YHD but in which the disease is detected may not be declared free from YHD again until the following conditions have been met:

    a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

    b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of YHV.

Article 4.1.3.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from YHD following the provisions of points 1) or 2) of Articles 4.1.3.4. or 4.1.3.5., as relevant, may maintain its status as YHD free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from YHD following the provisions of point 3) of Articles 4.1.3.4. or 4.1.3.5., as relevant, may discontinue *targeted surveillance* and maintain its status as YHD free provided that conditions that are conducive to clinical expression of YHD, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of YHD, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.3.7.

Importation of live animals from a country, zone or compartment declared free from yellowhead disease

When importing live *aquatic animals* of the species referred to in Article 4.1.3.2. from a country, *zone* or *compartment* declared free from YHD, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.3.4. or 4.1.3.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from YHD.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.3.3.

Article 4.1.3.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared free from yellowhead disease

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.3.2. from a country, *zone* or *compartment* not declared free from YHD, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

   a) the consignment is delivered directly into and held in *quarantine* facilities; and

   b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of YHV.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

   a) identify stock of interest (cultured or wild) in its current location;

   b) evaluate stock's health/disease history;

   c) take and test samples for YHV, pests and general health/disease status;

   d) import and quarantine in a secure facility a founder (F-0) population;

   e) produce F-1 generation from the F-0 stock in *quarantine*;

   f) culture F-1 stock and at critical times in its development (life cycle) sample and test for YHV and perform general examinations for pests and general health/disease status;

   g) if YHV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as YHD free or specific pathogen free (SPF) for YHV;

   h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.3.3.

Article 4.1.3.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from yellowhead disease

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.3.2. from a country, *zone* or *compartment* not declared free from YHD, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and
2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of YHV.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.3.3.

Article 4.1.3.10.

Importation of products from a country, zone or compartment declared free from yellowhead disease

When importing *aquatic animal products* of the species referred to in Article 4.1.3.2. from a country, *zone* or *compartment* free from YHD, the *Competent Authority* of the *importing country* should require an *international*

aquatic animal health certificate issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.3.4. or 4.1.3.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from YHD.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.3.3.

Article 4.1.3.11.

Importation of products from a country, zone or compartment not declared free from yellowhead disease

When importing *aquatic animal products* of the species referred to in Article 4.1.3.2. from a country, *zone* or *compartment* not declared free from YHD, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.3.3.

Appendix XXV

CHAPTER 4.1.4.

TETRAHEDRAL BACULOVIROSIS

Article 4.1.4.1.

For the purposes of the *Aquatic Code*, tetrahedral baculovirosis means infection with *Baculovirus penaei* (BPV). This virus is closely related to *Penaeus monodon baculovirus* (Chapter 4.1.5.) which has been classified as a tentative species in the genus *Nucleopolyhedrovirus*. Common synonyms are listed in Chapter 4.1.4. of the *Aquatic Manual*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.4.2.

Scope

The recommendations in this Chapter apply to the following genera: *Litopenaeus, Farfantepenaeus, Fenneropenaeus*, *Melicertus*, *Penaeus*, *Trachypenaeus* and *Protrachypene*. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Article 4.1.4.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential BPV carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any tetrahedral baculovirosis related conditions, regardless of the tetrahedral baculovirosis status of the *exporting country*, *zone* or *compartment*.

a) For the species in Article 4.1.4.2. for any purpose:

i) commercially-sterile canned products;

ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

iii) chemically extracted chitin;

iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

vi) biological samples preserved for diagnostic applications in such a manner as to inactivate BPV (e.g. formalin or alcohol preserved samples).

b) The following products destined for human consumption from species in Article 4.1.4.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen;

iii) headed and de-veined shrimp tails.

For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.4.2., other than those listed in point 1 of Article 4.1.4.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.4.7. to 4.1.4.11., relevant to the tetrahedral baculovirosis status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.4.2. but which could be reasonably expected to be a potential BPV carrier from an *exporting country*, *zone* or *compartment* not declared free of tetrahedral baculovirosis, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of BPV and the potential consequences associated with importation of the *commodity* prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.4.4.

Tetrahedral baculovirosis free country

A country may make a *self-declaration of freedom* from tetrahedral baculovirosis if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from tetrahedral baculovirosis if all the areas covered by the shared water are declared tetrahedral baculovirosis free countries or zones (see Article 4.1.4.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from tetrahedral baculovirosis when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.4.2. are present but there has never been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from tetrahedral baculovirosis when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from tetrahedral baculovirosis when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of BPV.

OR

4. A country that has previously made a *self-declaration of freedom* from tetrahedral baculovirosis but in which the disease is subsequently detected may not make a *self-declaration of freedom* from tetrahedral baculovirosis again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of BPV.

   In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.4.5.

Article 4.1.4.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to

include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from BPV but in which the disease is detected may not be declared free from BPV again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Tetrahedral baculovirosis free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from tetrahedral baculovirosis may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared a tetrahedral baculovirosis free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from tetrahedral baculovirosis when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.4.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from tetrahedral baculovirosis when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from tetrahedral baculovirosis when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of BPV.

OR

4. A *zone* previously declared free from tetrahedral baculovirosis but in which the disease is detected may not be declared free from tetrahedral baculovirosis again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of BPV.

Article 4.1.4.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from tetrahedral baculovirosis following the provisions of points 1) or 2) of Articles 4.1.4.4. or 4.1.4.5., as relevant, may maintain its status as tetrahedral baculovirosis free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from tetrahedral baculovirosis following the provisions of point 3) of Articles 4.1.4.4. or 4.1.4.5., as relevant, may discontinue *targeted surveillance* and maintain its status as tetrahedral baculovirosis free provided that conditions that are conducive to clinical expression of tetrahedral baculovirosis, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of tetrahedral baculovirosis, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.4.7.

Importation of live animals from a country, zone or compartment declared free from tetrahedral baculovirosis

When importing live *aquatic animals* of the species referred to in Article 4.1.4.2. from a country, *zone* or *compartment* declared free from tetrahedral baculovirosis, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.4.4. or 4.1.4.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from tetrahedral baculovirosis.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.4.3.

Article 4.1.4.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared free from tetrahedral baculovirosis

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.4.2. from a country, *zone* or *compartment* not declared free from tetrahedral baculovirosis, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

   a) the consignment is delivered directly into and held in *quarantine* facilities; and

   b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

   c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of BPV.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

   a) identify stock of interest (cultured or wild) in its current location;

   b) evaluate stock's health/disease history;

   c) take and test samples for BPV, pests and general health/disease status;

   d) import and quarantine in a secure facility a founder (F-0) population;

   e) produce F-1 generation from the F-0 stock in *quarantine*;

   f) culture F-1 stock and at critical times in its development (life cycle) sample and test for BPV and perform general examinations for pests and general health/disease status;

   g) if BPV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as tetrahedral baculovirosis free or specific pathogen free (SPF) for BPV;

   h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.4.3.

Article 4.1.4.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from tetrahedral baculovirosis

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.4.2. from a country, *zone* or *compartment* not declared free from tetrahedral baculovirosis, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and
2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of BPV.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.4.3.

Article 4.1.4.10.

Importation of products from a country, zone or compartment declared free from tetrahedral baculovirosis

When importing *aquatic animal products* of the species referred to in Article 4.1.4.2. from a country, *zone* or *compartment* free from tetrahedral baculovirosis, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.4.4. or 4.1.4.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from tetrahedral baculovirosis.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.4.3.

Article 4.1.4.11.

Importation of products from a country, zone or compartment not declared free from tetrahedral baculovirosis

When importing *aquatic animal products* of the species referred to in Article 4.1.4.2. from a country, *zone* or *compartment* not declared free from tetrahedral baculovirosis, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.4.3.

Appendix XXVI

CHAPTER 4.1.5.

SPHERICAL BACULOVIROSIS

Article 4.1.5.1.

For the purposes of the *Aquatic Code*, spherical baculovirosis means infection with *Penaeus monodon* baculovirus (MBV). *Penaeus monodon baculovirus* is classified as a tentative species in the genus *Nucleopolyherdovirus*. Common synonyms are listed in Chapter 4.1.5. of the *Aquatic Manual*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.5.2.

Scope

The recommendations in this Chapter apply to the following genera: *Penaeus*, *Metapenaeus*, *Fenneropenaeus* and *Melicertus*. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Article 4.1.5.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential MBV carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any spherical baculovirosis related conditions, regardless of the spherical baculovirosis status of the *exporting country*, *zone* or *compartment*.

a) For the species in Article 4.1.5.2. for any purpose:

i) commercially-sterile canned products;

ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

iii) chemically extracted chitin;

iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

vi) biological samples preserved for diagnostic applications in such a manner as to inactivate MBV (e.g. formalin or alcohol preserved samples).

b) The following products destined for human consumption from species in Article 4.1.5.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen;

iii) headed and de-veined shrimp tails.

For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.5.2., other than those listed in point 1 of Article 4.1.5.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.5.7. to 4.1.5.11., relevant to the spherical baculovirosis status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.5.2. but which could be reasonably expected to be a potential MBV carrier from an *exporting country*, *zone* or *compartment* not declared free of spherical baculovirosis, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of MBV and the potential consequences associated with importation of the *commodity*, prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.5.4.

Spherical baculovirosis free country

A country may make a *self-declaration of freedom* from spherical baculovirosis if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from spherical baculovirosis if all the areas covered by the shared water are declared spherical baculovirosis free countries or zones (see Article 4.1.5.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from spherical baculovirosis when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.5.2. are present but there has never been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from spherical baculovirosis when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from spherical baculovirosis when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of MBV.

OR

4. A country that has previously made a *self-declaration of freedom* from spherical baculovirosis but in which the disease is subsequently detected may not make a *self-declaration of freedom* from spherical baculovirosis again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of MBV.

   In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.5.5.

Article 4.1.5.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from MBV but in which the disease is detected may not be declared free from MBV again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Spherical baculovirosis free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from spherical baculovirosis may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared a spherical baculovirosis free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from spherical baculovirosis when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.5.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from spherical baculovirosis when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from spherical baculovirosis when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of MBV.

OR

4. A *zone* previously declared free from spherical baculovirosis but in which the disease is detected may not be declared free from spherical baculovirosis again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in

place for at least the past 2 years without detection of MBV.

Article 4.1.5.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from spherical baculovirosis following the provisions of points 1) or 2) of Articles 4.1.5.4. or 4.1.5.5., as relevant, may maintain its status as spherical baculovirosis free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from spherical baculovirosis following the provisions of point 3) of Articles 4.1.5.4. or 4.1.5.5., as relevant, may discontinue *targeted surveillance* and maintain its status as spherical baculovirosis free provided that conditions that are conducive to clinical expression of spherical baculovirosis, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of spherical baculovirosis, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.5.7.

Importation of live animals from a country, zone or compartment declared free from spherical baculovirosis

When importing live *aquatic animals* of the species referred to in Article 4.1.5.2. from a country, *zone* or *compartment* declared free from spherical baculovirosis, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.5.4. or 4.1.5.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from spherical baculovirosis.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.5.3.

Article 4.1.5.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared free from spherical baculovirosis

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.5.2. from a country, *zone* or *compartment* not declared free from spherical baculovirosis, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

   a) the consignment is delivered directly into and held in *quarantine* facilities; and

b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of MBV.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

a) identify stock of interest (cultured or wild) in its current location;

b) evaluate stock's health/disease history;

c) take and test samples for MBV, pests and general health/disease status;

d) import and quarantine in a secure facility a founder (F-0) population;

e) produce F-1 generation from the F-0 stock in *quarantine*;

f) culture F-1 stock and at critical times in its development (life cycle) sample and test for MBV and perform general examinations for pests and general health/disease status;

g) if MBV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as spherical baculovirosis free or specific pathogen free (SPF) for MBV;

h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.5.3.

Article 4.1.5.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from spherical baculovirosis

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.5.2. from a country, *zone* or *compartment* not declared free from spherical baculovirosis, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and

2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of MBV.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.5.3.

Article 4.1.5.10.

Importation of products from a country, zone or compartment declared free from spherical baculovirosis

When importing *aquatic animal products* of the species referred to in Article 4.1.5.2. from a country, *zone* or

compartment free from spherical baculovirosis, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.5.4. or 4.1.5.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from spherical baculovirosis.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.5.3.

Article 4.1.5.11.

Importation of products from a country, zone or compartment not declared free from spherical baculovirosis

When importing *aquatic animal products* of the species referred to in Article 4.1.5.2. from a country, *zone* or *compartment* not declared free from spherical baculovirosis, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.5.3.

CHAPTER 4.1.6.

INFECTIOUS HYPODERMAL AND HAEMATOPOIETIC NECROSIS

Article 4.1.6.1.

For the purposes of the *Aquatic Code*, infectious hypodermal and haematopoietic necrosis (IHHN) means infection with infectious hypodermal and haematopoietic necrosis virus (IHHNV). IHHNV is classified as the species *Penaeus stylirostris densovirus* in the genus *Brevidensovirus* in the family *Parvoviridae*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.6.2.

Scope

The recommendations in this Chapter apply to: *Penaeus monodon, Litopenaeus vannamei* and *L. stylirostris*. These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Article 4.1.6.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential IHHN carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any IHHN related conditions, regardless of the IHHN status of the *exporting country*, *zone* or *compartment*.

a) For the species in Article 4.1.6.2. for any purpose:

i) commercially-sterile canned products;

ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

iii) chemically extracted chitin;

iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

vi) biological samples preserved for diagnostic applications in such a manner as to inactivate IHHNV (e.g. formalin or alcohol preserved samples).

b) The following products destined for human consumption from species in Article 4.1.6.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen.

For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.6.2., other than those listed in point 1 of Article 4.1.6.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.6.7. to 4.1.6.11., relevant to the IHHN status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.6.2. but which could be reasonably expected to be a potential IHHNV carrier from an *exporting country*, *zone* or *compartment* not declared free of IHHN, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of IHHNV and the potential consequences associated with importation of the *commodity*, prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.6.4.

Infectious hypodermal and haematopoietic necrosis free country

A country may make a *self-declaration of freedom* from IHHN if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from IHHN if all the areas covered by the shared water are declared IHHN free countries or zones (see Article 4.1.6.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from IHHN when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.6.2. are present but there has never been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from IHHN when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from IHHN when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of IHHNV.

OR

4. A country that had previously made a *self-declaration of freedom* from IHHN but in which the disease is subsequently detected may not make a *self-declaration of freedom* from IHHN again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of IHHNV.

   In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.6.5.

Article 4.1.6.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from IHHN but in which the disease is detected may not be declared free from IHHN again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Infectious hypodermal and haematopoietic necrosis free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from IHHN may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared an IHHN free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from IHHN when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.6.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from IHHN when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from IHHN when:

    a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

    b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of IHHNV.

OR

4. A *zone* previously declared free from IHHN but in which the disease is detected may not be declared free from IHHN again until the following conditions have been met:

    a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of IHHNV.

Article 4.1.6.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from IHHN following the provisions of points 1) or 2) of Articles 4.1.6.4. or 4.1.6.5., as relevant, may maintain its status as IHHN free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from IHHN following the provisions of point 3) of Articles 4.1.6.4. or 4.1.6.5., as relevant, may discontinue *targeted surveillance* and maintain its status as IHHN free provided that conditions that are conducive to clinical expression of IHHN, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of IHHN, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.6.7.

Importation of live animals from a country, zone or compartment declared free from infectious hypodermal and haematopoietic necrosis

When importing live *aquatic animals* of the species referred to in Article 4.1.6.2. from a country, *zone* or *compartment* declared free from IHHN, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.6.4. or 4.1.6.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from IHHN.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.6.3.

Article 4.1.6.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared

free from infectious hypodermal and haematopoietic necrosis

1. When importing, for *aquaculture*, *aquatic animals* of the species listed in Article 4.1.6.2. from a country, *zone* or *compartment* not declared free from IHHN, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

    a) the consignment is delivered directly into and held in *quarantine* facilities; and

    b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

    c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of IHHNV.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

    a) identify stock of interest (cultured or wild) in its current location;

    b) evaluate stock's health/disease history;

    c) take and test samples for IHHNV, pests and general health/disease status;

    d) import and quarantine in a secure facility a founder (F-0) population;

    e) produce F-1 generation from the F-0 stock in *quarantine*;

    f) culture F-1 stock and at critical times in its development (life cycle) sample and test for IHHNV and perform general examinations for pests and general health/disease status;

    g) if IHHNV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as IHHN free or specific pathogen free (SPF) for IHHNV;

    h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.6.3.

Article 4.1.6.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from infectious hypodermal and haematopoietic necrosis

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.6.2. from a country, *zone* or *compartment* not declared free from IHHN, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and
2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of IHHNV.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.6.3.

Article 4.1.6.10.

Importation of products from a country, zone or compartment declared free from IHHN

When importing *aquatic animal products* of the species referred to in Article 4.1.6.2. from a country, *zone* or *compartment* free from IHHN, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.6.4. or 4.1.6.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from IHHN.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.6.3.

Article 4.1.6.11.

Importation of products from a country, zone or compartment not declared free from IHHN

When importing *aquatic animal products* of the species referred to in Article 4.1.6.2. from a country, *zone* or *compartment* not declared free from IHHN, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.6.3.

Appendix XXVIII

CHAPTER 4.1.7.

CRAYFISH PLAGUE

Article 4.1.7.1.

For the purposes of the *Aquatic Code*, crayfish plague means infection with *Aphanomyces astaci* Schikora. This organism is a member of a group commonly known as the water moulds (the Oomycetida). Common synonyms are listed in Chapter 4.1.7. of the *Aquatic Manual*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.7.2.

Scope

The recommendations in this Chapter apply to all species of crayfish in all three crayfish families (*Cambaridae*, *Astacidae*, and *Parastacidae*). These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Crayfish plague is most severe in European crayfish species including the noble crayfish (*Astacus astacus*), the white claw crayfish (*Austropotamobius pallipes*), stone crayfish (*Austropotamobius torrentium*), and the Turkish crayfish (*Astacus leptodactylus*). In general the Astacidae (except *Pacifastacus*) are highly susceptible, while the Cambaridae are resistant to disease, but are potential carriers.

Article 4.1.7.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

With regard to point 1 a litra vii), the Community will draw the attention of the OIE AAC to the study of Oidtmann et al (2002) (Diseases of Aquatic Organisms; Vol 52, pages 159-167) where it was found that infective pathogens was still present in cadavers held 48 hours in -20 deg Celsius, while no viable pathogens were found after 72 hours at -20 deg Celsius. The Community recommends that the OIE examines that paper, re-formulates its recommendations.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential A. astaci carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure**

that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any crayfish plague related conditions, regardless of the crayfish plague status of the *exporting country*, *zone* or *compartment*.

   a) For the species in Article 4.1.7.2. for any purpose:

      i) commercially-sterile canned products;

      ii) boiled products (e.g. cooked whole shrimp or tails, lobsters, crabs);

      iii) chemically extracted chitin;

      iv) crustacean meals or by-products made non-infectious by heating (>60°C for >5 minutes) or drying by-product (e.g. flame dried or sun dried);

      v) crustacean products made non-infectious during processing as dry feeds (e.g. pelleted or extruded feeds);

      vi) biological samples preserved for diagnostic applications in such a manner as to inactivate *A. astaci* (e.g. formalin or alcohol preserved samples);

      vii) frozen products that have been subjected to -10°C or lower temperatures for at least 24 hours.

   b) The following products destined for human consumption from species in Article 4.1.7.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

      i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

      ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen.

   For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.7.2., other than those listed in point 1 of Article 4.1.7.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.7.7. to 4.1.7.11., relevant to the crayfish plague status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.7.2. but which could be reasonably expected to be a potential *A. astaci* carrier from an *exporting country*, *zone* or *compartment* not declared free of crayfish plague, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of *A. astaci* and the potential consequences associated with importation of the *commodity*, prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.7.4.

Community comment

The Community will draw the attention of the OIE to the fact that the Manual does not describe any methods validated for the purpose of screening populations for the presence of A. astaci. Hence, this – and the following Articles – are impossible to comply with.

Crayfish plague free country

A country may make a *self-declaration of freedom* from crayfish plague if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *water catchment* or with one or more other countries, it can only make a *self-declaration of freedom* from crayfish plague if all the areas covered by the shared water are declared crayfish plague free countries or zones (see Article 4.1.7.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from crayfish plague when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.7.2. are present but there has never been any observed occurrence of the disease for at least the past 25 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from crayfish plague when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 25 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from crayfish plague when:

    a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

    b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 5 years without detection of *A. astaci*.

OR

4. A country that has previously made a *self-declaration of freedom* from crayfish plague but in which the disease is subsequently detected may not make a *self-declaration of freedom* from crayfish plague again until the following conditions have been met:

    a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

    b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

    c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in

place for at least the past 5 years without detection of *A. astaci*.

In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.7.5.

Article 4.1.7.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from crayfish plaque but in which the disease is detected may not be declared free from crayfish plaque again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Crayfish plague free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from crayfish plague may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared a crayfish plague free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from crayfish plague when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.7.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from crayfish plague when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from crayfish plague when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of *A. astaci*.

OR

4. A *zone* previously declared free from crayfish plague but in which the disease is detected may not be declared free from crayfish plague again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of *A. astaci*.

Article 4.1.7.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from crayfish plague following the provisions of points 1) or 2) of Articles 4.1.7.4. or 4.1.7.5., as relevant, may maintain its status as crayfish plague free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from crayfish plague following the provisions of point 3) of Articles 4.1.7.4. or 4.1.7.5., as relevant, may discontinue *targeted surveillance* and maintain its status as crayfish plague free provided that conditions that are conducive to clinical expression of crayfish plague, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of crayfish plague, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.7.7.

Importation of live animals from a country, zone or compartment declared free from crayfish plague

When importing live *aquatic animals* of the species referred to in Article 4.1.7.2. from a country, *zone* or *compartment* declared free from crayfish plague, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.7.4. or 4.1.7.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from crayfish plague.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.7.3.

Article 4.1.7.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared free from crayfish plague

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.7.2. from a country, *zone* or *compartment* not declared free from crayfish plague, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

   a) the consignment is delivered directly into and held in *quarantine* facilities; and

   b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

   c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of *A. astaci*.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

   a) identify stock of interest (cultured or wild) in its current location;

   b) evaluate stock's health/disease history;

   c) take and test samples for *A. astaci*, pests and general health/disease status;

   d) import and quarantine in a secure facility a founder (F-0) population;

   e) produce F-1 generation from the F-0 stock in *quarantine*;

   f) culture F-1 stock and at critical times in its development (life cycle) sample and test for *A. astaci* and perform general examinations for pests and general health/disease status;

   g) if *A. astaci* is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as crayfish plague free or specific pathogen free (SPF) for *A. astaci*;

   h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.7.3.

Article 4.1.7.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from crayfish plague

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.7.2. from a country, *zone* or *compartment* not declared free from crayfish plague, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and
2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of *A. astaci*.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.7.3.

Article 4.1.7.10.

Importation of products from a country, zone or compartment declared free from crayfish plague

When importing *aquatic animal products* of the species referred to in Article 4.1.7.2. from a country, *zone* or *compartment* free from crayfish plague, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.7.4. or 4.1.7.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from crayfish plague.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.7.3.

Article 4.1.7.11.

Importation of products from a country, zone or compartment not declared free from crayfish plague

When importing *aquatic animal products* of the species referred to in Article 4.1.7.2. from a country, *zone* or *compartment* not declared free from crayfish plague, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.7.3.

CHAPTER 4.1.9.

INFECTIOUS MYONECROSIS

Article 4.1.9.1.

For the purposes of the *Aquatic Code*, infectious myonecrosis (IMN) means infection with infectious myonecrosis virus (IMNV). This virus is similar to members of the family *Totiviridae*.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.9.2.

Scope

The recommendations in this Chapter apply to: Pacific white shrimp (*Litopenaeus vannamei*). These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Article 4.1.9.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential IMN carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any IMN related conditions, regardless of the IMN status of the *exporting country*, *zone* or *compartment*.

   a) For the species in Article 4.1.9.2. for any purpose:

i) commercially-sterile canned products;

ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

iii) chemically extracted chitin;

iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

vi) biological samples preserved for diagnostic applications in such a manner as to inactivate IMNV (e.g. formalin or alcohol preserved samples).

b) The following products destined for human consumption from species in Article 4.1.9.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen.

For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.9.2., other than those listed in point 1 of Article 4.1.9.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.9.7. to 4.1.9.11., relevant to the IMN status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.9.2. but which could be reasonably expected to be a potential IMNV carrier from an *exporting country*, *zone* or *compartment* not declared free of IMN, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of IMNV and the potential consequences associated with importation of the *commodity*, prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.9.4.

Infectious myonecrosis free country

A country may make a *self-declaration of freedom* from IMN if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from IMN if all the areas covered by the shared water are declared IMN free countries or zones (see Article 4.1.9.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from IMN when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.9.2. are present but there has never been any

observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from IMN when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from IMN when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of IMNV.

OR

4. A country that has previously made a *self-declaration of freedom* from IMN but in which the disease is subsequently detected may not make a *self-declaration of freedom* from IMN again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of IMNV.

   In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.9.5.

Article 4.1.9.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from IMN but in which the disease is detected may not be declared free from IMN again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Infectious myonecrosis free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from IMN may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared an IMN free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from IMN when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.9.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from IMN when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from IMN when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of IMNV.

OR

4. A *zone* previously declared free from IMN but in which the disease is detected may not be declared free from IMN again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of IMNV.

Article 4.1.9.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from IMN following the provisions of points 1) or 2) of Articles 4.1.9.4. or 4.1.9.5., as relevant, may maintain its status as IMN free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from IMN following the provisions of point 3) of Articles 4.1.9.4. or 4.1.9.5., as relevant, may discontinue *targeted surveillance* and maintain its status as IMN free provided that conditions that are conducive to clinical expression of IMN, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of IMN, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.9.7.

Importation of live animals from a country, zone or compartment declared free from infectious myonecrosis

When importing live *aquatic animals* of the species referred to in Article 4.1.9.2. from a country, *zone* or *compartment* declared free from IMN, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.9.4. or 4.1.9.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from IMN.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.9.3.

Article 4.1.9.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared free from infectious myonecrosis

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.9.2. from a country, *zone* or *compartment* not declared free from IMN, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

   a) the consignment is delivered directly into and held in *quarantine* facilities; and

   b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

   c) all effluent and waste material from the processing are treated in a manner that ensures inactivation of IMNV.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

   a) identify stock of interest (cultured or wild) in its current location;

   b) evaluate stock's health/disease history;

   c) take and test samples for IMNV, pests and general health/disease status;

   d) import and quarantine in a secure facility a founder (F-0) population;

   e) produce F-1 generation from the F-0 stock in *quarantine*;

   f) culture F-1 stock and at critical times in its development (life cycle) sample and test for IMNV and perform general examinations for pests and general health/disease status;

   g) if IMNV is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as IMN free or specific pathogen free (SPF) for IMNV;

   h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.9.3.

Article 4.1.9.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from infectious myonecrosis

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.9.2. from a country, *zone* or *compartment* not declared free from IMN, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and
2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of IMNV.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.9.3.

Article 4.1.9.10.

Importation of products from a country, zone or compartment declared free from infectious myonecrosis

When importing *aquatic animal products* of the species referred to in Article 4.1.9.2. from a country, *zone* or *compartment* free from IMN, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.9.4. or 4.1.9.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from IMN.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.9.3.

Article 4.1.9.11.

Importation of products from a country, zone or compartment not declared free from infectious myonecrosis

When importing *aquatic animal products* of the species referred to in Article 4.1.9.2. from a country, *zone* or *compartment* not declared free from IMN, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.9.3.

Appendix XXX

CHAPTER 4.1.10.

NECROTISING HEPATOPANCREATITIS

Article 4.1.10.1.

For the purposes of the *Aquatic Code*, necrotising hepatopancreatitis (NHP) means infection with necrotising hepatopancreatitis bacteria (NHP-B). This bacterium is a member of the order α-Proteobacteria.

Methods for surveillance and diagnosis are provided in the *Aquatic Manual*.

Article 4.1.10.2.

Scope

The recommendations in this Chapter apply to: Pacific white shrimp (*Litopenaeus vannamei*), blue shrimp (*L. stylirostris*), northern white shrimp (*L. setiferus*) and northern brown shrimp (*Farafante penaeus*). These recommendations also apply to any other *susceptible species* referred to in the *Aquatic Manual* when traded internationally.

Article 4.1.10.3.

Community comment

The Community agrees with point 1 of this article, but cannot understand the rationale for considering the commodity under vi) as "safe commodity" in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the commodity in vi) of this point is included in the corresponding fish- and mollusc chapters as a "safe commodity" at the next update of the OIE Aquatic Code.

The Community would also draw the attention of the OIE AAC to the following phrase of the second line of point 3 of this Article: "but which could be reasonably expected to be a potential NHP carrier". **The Community agrees with this addition, but cannot understand the rationale for this wording in the crustacean chapters and not in the fish- and mollusc chapters respectively. Hence the Community asks the OIE AAC to ensure that the same wording is included in the corresponding fish- and mollusc chapters at the next update of the OIE Aquatic Code.**

Commodities

1. When authorising importation or transit of the following *commodities*, *Competent Authorities* of the *importing country* should not require any NHP related conditions, regardless of the NHP status of the *exporting country*, *zone* or *compartment*.

a) For the species in Article 4.1.10.2. for any purpose:

i) commercially-sterile canned products;

ii) boiled products (e.g. boiled whole shrimp or tails, lobsters, crabs);

iii) chemically extracted chitin;

iv) crustacean meals or by-products made non-infectious by heating or drying (e.g. flame dried or sun dried);

v) crustacean products made non-infectious through processing as dry feeds (e.g. pelleted or extruded feeds);

vi) biological samples preserved for diagnostic applications in such a manner as to inactivate NHP-B (e.g. formalin or alcohol preserved samples);

vii) frozen products.

b) The following products destined for human consumption from species in Article 4.1.10.2 which have been prepared in such a way as to minimise the risk of diversion for alternative uses:

i) chemically preserved products (e.g. salted, pickled, marinated, pastes, etc.);

ii) products that have been heat treated or dried (e.g. ready prepared meals) in a manner to ensure the inactivation of the pathogen.

iii) headed and de-veined shrimp tails.

For the *commodities* listed in point 1)b), Member Countries should consider introducing internal measures to prevent the *commodity* being used for any purpose other than for human consumption.

2. When authorising importation or transit of the *commodities* of a species referred to in Article 4.1.10.2., other than those listed in point 1 of Article 4.1.10.3., *Competent Authorities* of the *importing country* should require the conditions prescribed in Articles 4.1.10.7. to 4.1.10.11., relevant to the NHP status of the *exporting country*, *zone* or *compartment*.

3. When considering the importation or transit of any other *commodity* of a species not referred to in Article 4.1.10.2. but which could be reasonably expected to be a potential NHP-B carrier from an *exporting country*, *zone* or *compartment* not declared free of NHP, *Competent Authorities* of the *importing country* should conduct an analysis of the risk of introduction, establishment and spread of NHP-B and the potential consequences associated with importation of the *commodity*, prior to a decision. The *exporting country* should be informed of the outcome of this assessment.

Article 4.1.10.4.

Necrotising hepatopancreatitis free country

A country may make a *self-declaration of freedom* from NHP if it meets the conditions in points 1), 2), 3) or 4) below.

If a country shares a *zone* with one or more other countries, it can only make a *self-declaration of freedom* from NHP if all the areas covered by the shared water are declared NHP free countries or zones (see Article 4.1.10.5.).

1. A country where none of the *susceptible species* is present may make a *self-declaration of freedom* from NHP when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

2. A country where the species referred to in Article 4.1.10.2. are present but there has never been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from NHP when *basic biosecurity conditions* have been met continuously in the country for at least the past 2 years.

OR

3. A country where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may make a *self-declaration of freedom* from NHP when:

   a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

   b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place for at least the last 2 years without detection of NHP-B.

OR

4. A country that has previously made a *self-declaration of freedom* from NHP but in which the disease is subsequently detected may not make a *self-declaration of freedom* from NHP again until the following conditions have been met:

   a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

   b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

   c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of NHP-B.

   In the meantime, part of the non-affected area may be declared a free *zone* provided that they meet the conditions in point 3) of Article 4.1.10.5.

Article 4.1.10.5.

Community comment

The Community would argue that for *certain* compartments, disease free status could be regained if aquatic animal population is removed and disposed off, the establishment is properly disinfected and where appropriate fallowed, and restocked with aquatic animals from a certified disease free source. The Community asks the OIE AAC to include that option as an alternative as a possible point 5. A proposal for a possible point 5 would be:

5. A *compartment* previously declared free from NHP but in which the disease is detected may not be declared free from NHP again until the following conditions have been met

a) the requirements in point 4, or

b) if the compartment is supplied by water from a spring, borehole or other safe water supply independent of the surrounding waters and is equipped with a barrier preventing migration of aquatic animals of susceptible species into the compartment or its water supply;

i) infected populations have been safely destroyed or removed from the *infected compartment* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed

ii) the compartment is repopulated with aquatic animals from a certified disease free population

Necrotising hepatopancreatitis free zone or free compartment

A *zone* or *compartment* within the *territory* of one or more countries not declared free from NHP may be declared free by the *Competent Authority(ies)* of the country(ies) concerned, if the *zone* or *compartment* meets the conditions referred to in points 1), 2), 3) or 4) below.

If a *zone* or *compartment* extends over more than one country, it can only be declared a NHP free *zone* or *compartment* if all the relevant *Competent Authorities* confirm that the conditions have been met.

1. A *zone* or *compartment* where none of the *susceptible species* is present may be declared free from NHP when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

2. A *zone* or *compartment* where the species referred to in Article 4.1.10.2. are present but in which there has not been any observed occurrence of the disease for at least the past 10 years despite conditions that are conducive to its clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from NHP when *basic biosecurity conditions* have been met continuously in the *zone* or *compartment* for at least the past 2 years.

OR

3. A *zone* or *compartment* where the last observed occurrence of the disease was within the past 10 years or where the infection status prior to *targeted surveillance* was unknown, for example because of the absence of conditions conducive to clinical expression, as described in Chapter X.X.X. of the *Aquatic Manual*, may be declared free from NHP when:

    a) *basic biosecurity conditions* have been met continuously for at least the past 2 years; and

    b) *targeted surveillance* as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual* has been in place, through the *zone* or *compartment*, for at least the past 2 years without detection of NHP-B.

OR

4. A *zone* previously declared free from NHP but in which the disease is detected may not be declared free from NHP again until the following conditions have been met:

    a) on detection of the disease, the affected area was declared an *infected zone* and a *buffer zone* was established; and

    b) infected populations have been safely destroyed or removed from the *infected zone* by means that minimise the risk of further spread of the disease, and the appropriate *disinfection* procedures (see *Aquatic Manual*) have been completed; and

c) *targeted surveillance*, as described in Chapters 1.1.4. and X.X.X. of the *Aquatic Manual*, has been in place for at least the past 2 years without detection of NHP-B.

Article 4.1.10.6.

Maintenance of free status

A country, *zone* or *compartment* that is declared free from NHP following the provisions of points 1) or 2) of Articles 4.1.10.4. or 4.1.10.5., as relevant, may maintain its status as NHP free provided that *basic biosecurity conditions* are continuously maintained.

A country, *zone* or *compartment* that is declared free from NHP following the provisions of point 3) of Articles 4.1.10.4. or 4.1.10.5., as relevant, may discontinue *targeted surveillance* and maintain its status as NHP free provided that conditions that are conducive to clinical expression of NHP, as described in Chapter X.X.X. of the *Aquatic Manual*, exist and *basic biosecurity conditions* are continuously maintained.

However, for declared free *zones* or *compartments* in infected countries and in all cases where conditions are not conducive to clinical expression of NHP, *targeted surveillance* needs to be continued at a level determined by the *Competent Authority* on the basis of the likelihood of infection.

Article 4.1.10.7.

Importation of live animals from a country, zone or compartment declared free from necrotising hepatopancreatitis

When importing live *aquatic animals* of the species referred to in Article 4.1.10.2. from a country, *zone* or *compartment* declared free from NHP, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.10.4. or 4.1.10.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from NHP.

The certificate should be in accordance with the Model Certificate in Appendix 6.4.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.10.3.

Article 4.1.10.8.

Community comment

The Community would argue that point 2 and 3 of this Article is beyond the scope of this part of the Code. See introductory remark.

Importation of live animals for aquaculture from a country, zone or compartment not declared free from necrotising hepatopancreatitis

1. When importing, for *aquaculture*, *aquatic animals* of the species referred to in Article 4.1.10.2. from a country, *zone* or *compartment* not declared free from NHP, the *Competent Authority* of the *importing country* should assess the risk and apply risk mitigation measures such as:

   a) the consignment is delivered directly into and held in *quarantine* facilities; and

   b) the imported *aquatic animals* and their first generation progeny are continuously isolated from the local environment; and

   c) all effluent and waste material from the processing are treated in a manner that ensures

inactivation of NHP-B.

2. If the intention of the introduction is the establishment of new genetic lines, international standards, such as the Guidelines of the International Council for the Exploration of the Seas (ICES), should be followed.

3. For the purposes of the *Aquatic Code*, the ICES Guidelines may be summarised to the following main points:

   a) identify stock of interest (cultured or wild) in its current location;

   b) evaluate stock's health/disease history;

   c) take and test samples for NHP-B, pests and general health/disease status;

   d) import and quarantine in a secure facility a founder (F-0) population;

   e) produce F-1 generation from the F-0 stock in *quarantine*;

   f) culture F-1 stock and at critical times in its development (life cycle) sample and test for NHP-B and perform general examinations for pests and general health/disease status;

   g) if NHP-B is not detected, pests are not present, and the general health/disease status of the stock is considered to meet *basic biosecurity conditions* of the *importing country*, *zone*, or *compartment*, the F-1 stock may be defined as NHP free or specific pathogen free (SPF) for NHP-B;

   h) release SPF F-1 stock from *quarantine* for *aquaculture* or stocking purposes in the country, *zone* or *compartment*.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.10.3.

Article 4.1.10.9.

Importation of live animals for human consumption from a country, zone or compartment not declared free from necrotising hepatopancreatitis

When importing, for human consumption, *aquatic animals* of the species referred to in Article 4.1.10.2. from a country, *zone* or *compartment* not declared free from NHP, the *Competent Authority* of the *importing country* should require:

1. the consignment is delivered directly to and held in isolation until consumption; and
2. all effluent, dead animals and waste material from the processing are treated in a manner that ensures inactivation of NHP-B.

Member Countries should consider introducing internal measures to prevent such *commodities* being used for any purpose other than for human consumption.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.10.3.

Article 4.1.10.10.

Importation of products from a country, zone or compartment declared free from necrotising hepatopancreatitis

When importing *aquatic animal products* of the species referred to in Article 4.1.10.2. from a country, *zone* or

compartment free from NHP, the *Competent Authority* of the *importing country* should require an *international aquatic animal health certificate* issued by the *Competent Authority* of the *exporting country* or a *certifying official* approved by the *importing country*, certifying that, on the basis of the procedures described in Articles 4.1.10.4. or 4.1.10.5. (as applicable), the place of production of the consignment is a country, *zone* or *compartment* declared free from NHP.

The certificate should be in accordance with the Model Certificate in Appendix 6.5.1.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.10.3.

Article 4.1.10.11.

Importation of products from a country, zone or compartment not declared free from necrotising hepatopancreatitis

When importing *aquatic animal products* of the species referred to in Article 4.1.10.2. from a country, *zone* or *compartment* not declared free from NHP, the *Competent Authority* of the *importing country* should assess the risk and apply appropriate risk mitigation measures.

This Article does not apply to *commodities* listed in point 1) of Article 4.1.10.3.

CHAPTER 1.1.1.

ANIMAL WELFARE DEFINITIONS

Community comment

The Community considers that many of these definitions will be applicable in other parts of the Aquatic Code and so could be included in the general list of "Definitions" rather than being separated under the specific heading of "Animal Welfare Definitions".

For the purposes of the *Aquatic Code*, the following definitions apply:

- **Anaesthesia** means a state whereby an *aquatic animal* is insensitive to sensory inputs.
- **Aquatic animal carcass** means the body/trunk of an *aquatic animal* subsequent to killing or death that requires safe disposal.
- **Aquatic animal offal/waste** means the whole or parts of an *aquatic animal* and *aquatic animal products* not approved for human consumption including sludge and sieve material collected during slaughtering.

Community comment

The issue of handler competence and certification has been a point of some discussion in the animal welfare guidelines prepared under the OIE Terrestrial Code. That issue should also be considered here to ensure a consistent approach across the OIE Aquatic and Terrestrial Codes.

- **Aquatic animal technician** means a person with knowledge regarding the behaviour and needs of live *aquatic animals* which, with appropriate experience and a professional and positive response to the welfare requirements of *aquatic animals*, results in effective management and good welfare. Their competence should be demonstrated through independent assessment and certification.
- **Aquatic animals for killing** means *aquatic animals* that are killed on site or transported to a suitable location for killing, for disease control purposes.
- **Boat** means a *vessel* constructed or adapted for the transport or temporary holding on water of live *aquatic animals* and their products, and includes well-boats, barges, and boats with tanks on deck.
- **Crustaceans** means crabs, crayfish, lobsters, prawns and shrimps.
- **Death** means irreversible loss of brain activity in fish, and demonstrable loss of sensation in crustaceans.

- **Fish** means live freshwater, estuarine or seawater finfish of any kind.
- **Harvest** means the removal of *fish* from their environment for human consumption.
- **Humane killing** means either immediate death, or death preceded either by immediate unconsciousness or by unconsciousness induced without pain, fear or adverse behaviour.
- **Killing** means any procedure which causes the death of an *aquatic animal*.
- **Mass destruction** means an emergency destruction and disposal of a population of *aquatic animals* for disposal.
- **Slaughtering** means the killing and/or processing of *fish*, with or without sedation/bleeding, for human consumption.

Community comment

From an editorial point of view the word "in" should be inserted before "a tank".

- **Stocking density** means, in the case of *aquatic animals*, the number or body weight of *aquatic animals* per unit area or per unit volume of water on a *vehicle* or a tank.
- **Stunning** means any mechanical, electrical, chemical or other procedure which causes the loss of consciousness which lasts until death.
- **Transport equipment** means the compartment in which live *aquatic animals* and transporting water are kept during transport (buckets, cylinders, tanks, wells, etc.), and associated equipment such as water circulation devices, pumps, water treatment equipment, water filtration devices and systems for loading and unloading live fish, valves, tubes and pipelines.

Community comment

The definitions of "transport unit" and "vehicle/vessel" should be carefully considered since these encompass a multiplicity of possible means of transport 'train, truck, aeroplane, helicopter, boat).

- **Transport unit** means the combination of the transport equipment and the *vehicle/vessel*.
- **Travel means** the movement of a *vehicle/vessel* or container carrying live *aquatic animals* from one location to another.
- **Vehicle/vessel** means any train, truck, automobile, airplane, helicopter or *boat* that is used for the transport of live *aquatic animals*.
- **Visual evoked response (VER)** means test that evaluates the conduction of electrical impulses from the optic nerve to the occipital cortex of the brain.
- **Water quality parameters** means its physical, chemical and biological characteristics.

APPENDIX X.X.1.

INTRODUCTION TO OIE GUIDELINES FOR THE WELFARE OF AQUATIC ANIMALS

Article X.X.1.1.

Guiding principles for aquatic animal welfare

1. That there is a critical relationship between *aquatic animal* health and *aquatic animal* welfare.

2. That the internationally recognised 'five freedoms' as they apply to *aquatic animals* (freedom to express normal patterns, freedom from pain, injury and disease; freedom from fear and distress; freedom from physical and thermal discomfort; freedom from hunger, thirst and malnutrition) provide valuable guidance in *aquatic animal* welfare.

3. That the internationally recognised 'three Rs' (reduction in numbers of *aquatic animals*, refinement of experimental methods and replacement of *aquatic animals* with non-animal techniques) provide valuable guidance for the use of *aquatic animals* in science.

4. That the scientific assessment of *aquatic animal* welfare involves diverse elements which need to be considered together, and that selecting and weighing these elements often involves value-based assumptions which should be made as explicit as possible.

5. That the use of *aquatic animals* in *aquaculture*, harvest or capture fisheries, research and for recreation (e.g. ornamentals in aquaria), makes a major contribution to the well-being of people.

6. That the use of *aquatic animals* carries with it an ethical duty to ensure the welfare of such animals to the greatest extent practical.

7. That the improvements in *aquatic animal* welfare can often improve productivity and food safety and hence lead to economic benefits.

8. That equivalent outcome (performance criteria), rather than identical systems (design criteria), be the basis for comparison of *aquatic animal* welfare standards and guidelines.

Article X.X.1.2.

Scientific basis for guidelines

Community comment

Point 1 gives a general definition of welfare which is not just applicable to aquatic animals. Therefore the word "aquatic" should be deleted as otherwise it could be mis-interpreted that this definition applies only to aquatic animals.

1. Welfare is a broad term that describes how well *aquatic animals* are coping with their environment, management and handling conditions with regard to their optimal health and well being, and minimising negative environmental, physiological and other stressors.

2. The scientific assessment of *aquatic animal* welfare has progressed in recent years and is the basis for these guidelines. Many areas of *aquatic animal* welfare may require further research to understand in full the ability of *aquatic animals* to feel pain and be sentient.

3. Measures of *aquatic animal* welfare may involve assessing health and injuries; growth, behaviour, and other performance factors; capture, feeding, handling, management, transport, slaughter and other conditions not normally encountered in nature. Environmental and other stressors may also affect *aquatic animal* production and performance negatively, many of which can be measured and observed in wild, captured and farmed *aquatic animals*.

4. Such measures can lead to criteria and indicators that help to evaluate how different methods of managing *aquatic animals* influence their welfare.

Appendix XXXIII

GUIDELINES FOR THE TRANSPORT OF FISH BY BOAT

Community comment

The scope of these draft guidelines should be carefully considered. By the sentence "The guidelines may also apply to other *fish* species" **it is unclear whether this implies only farmed fish. It should be considered that brood stock are sometimes captured from the wild and transported for use in capture-based aquaculture. It is also not clear whether the guidelines would apply to wild caught ornamental fish, elvers, eels etc. The transport of fish by air-helicopter should also be considered.**

In finalising these guidelines the new Council of Europe recommendation on the welfare of farmed fish and also the EFSA scientific opinions on fish transport and stunning-killing should be taken into account

http://www.coe.int/t/e/legal_affairs/legal_co-operation/biological_safety,_use_of_animals/farming/Rec%20fish%20E.asp#TopOfPage

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/424_en.html

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/495_en.html

Preamble: These guidelines apply to the following farmed species of fish: salmonids and cyprinids. The guidelines may also apply to other *fish* species.

Article 1

The length of time *fish* spend on a transport should be as short as possible.

Article 2

Responsibilities

Community comment

As with the transport guidelines of the Terrestrial Code, to ensure the proper application of these guidelines the responsibilities of all those persons involved in the transport chain need to be very clearly explained (who is responsible for what).

The welfare of *fish* during their transport is the joint responsibility of all people involved. These guidelines apply to the transport of *fish* by *boat* within a country and between countries. The roles of each of those responsible are defined below:

1. Owners and managers of *fish* are responsible for the general health of the *fish* and their fitness at the start of the journey and to ensure the overall welfare of *fish* during the transport regardless whether these duties are subcontracted to other parties.

2. *Aquatic animal technicians* handling *fish* prior to loading as well as during loading and unloading have a personal responsibility for their welfare.

3. Transport companies, *boat* owners and captains, in cooperation with the *Competent Authorities*, are responsible for planning the journey to ensure that the transport can be carried out properly according to *fish* welfare standards; these include:

   a) responsibility for choosing an appropriate and functioning *boat* and ensuring that competent staff are available for loading and unloading;

   b) responsibility for developing and keeping up to date contingency plans to address emergencies and minimise stress during transport;

   c) responsibility for correct loading of the *boat* with the *fish*, for regular inspections of the *fish* during the journey and for appropriate responses to problems arising.

4. Captains should be properly trained in transport regulations, and the correct *boat* and equipment usage to ensure that *fish* welfare standards are applied. The captain should also be aware of the latest *aquatic animal* health situation in the zones through which the journey will be made to allow correct journey planning and adjustments as necessary. The captain is responsible for all documentation relevant to the journey, including a journey log.

5. Managers of facilities at the start and at the end of the journey are responsible for:

   a) providing suitable facilities and equipment for loading and unloading to ensure that *fish* welfare standards are applied;

   b) providing *aquatic animal technicians* to load and unload the *fish* in a manner that causes minimum stress and injury;

   c) minimising the opportunities for disease transmission while the *fish* are in the facilities;

   d) providing facilities and agents for washing and disinfecting *vehicles* after unloading;

Community comment

The words “be enable” should be replaced by “to enable”.

   e) providing facilities and veterinarians, fish health biologists or other competent persons be enable *killing* of the *fish* humanely if required.

6. The responsibilities of the *Competent Authorities* include:

   a) establishing minimum standards for *fish* welfare, including requirements for the inspection of *fish* before, during and after their travel, and appropriate certification and record keeping;

b) approving *vessels* for the transport of *fish*;

c) ensuring appropriate awareness and training;

d) setting licensing standards for captains, *aquatic animal technicians* and managers;

e) implementation of the standards, including through accreditation of / interaction with other organisations;

f) providing the latest animal health information and designated restriction zones;

g) monitoring and evaluating health and welfare performance.

7. Private veterinarians and fish health biologists involved in transporting *fish* and the associated handling procedures should have specialist training in such matters.

Article 3

Competence

Community comment

The issue of handler competence and certification has been a point of some discussion in the animal welfare guidelines prepared under the OIE Terrestrial Code. That issue should also be considered here to ensure a consistent approach across the OIE Aquatic and Terrestrial Codes.

1. All persons handling *fish*, or who are otherwise responsible for *fish* during journeys, should be competent according to their responsibilities listed in Articles 1 and 4. Competence may be gained through formal training and/or practical experience. Competence in areas other than *fish* welfare would need to be addressed separately.

2. Any necessary training should address:

a) fish behaviour, physiology, general signs of disease and indicators of poor fish welfare;

b) transport regulations;

c) operation and maintenance of equipment relevant to fish health and welfare;

d) water quality;

e) methods of fish handling during transport and associated activities such as loading and unloading;

f) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies;

g) species-specific aspects of fish handling and care, whenever necessary;

h) appropriate record keeping.

Community comment

The issue of food deprivation/starvation before transport should be considered in these guidelines.

Planning the journey

1. General considerations

a) Adequate planning is a key factor affecting the welfare of *fish* during a journey. Before the journey starts, plans should be made in relation to:

i) type of *boat* required;

ii) route, taking into account distance, expected weather and sea conditions;

iii) nature and duration of the journey;

iv) care of the *fish* during the journey;

v) emergency response procedures.

b) Extreme weather conditions are hazards for *fish* undergoing transport and require appropriate *boat* design to minimise risks. In some extreme conditions, *fish* should not be transported at all.

c) As *fish* transport is often a significant factor in the spread of infectious diseases, journey planning should take the following into account:

Community comment

Following anti-microbial treatment the issue of allowing a recovery time before transport should be considered.

i) anti-microbials should not be used prophylactically; if used therapeutically, treatment should only be carried out upon instruction by a veterinarian or fish health biologist;

ii) before transport is carried out, the necessary biosecurity level should be assessed (e.g. washing and disinfection practices, safe places for changing water, treatment of transport water).

2. Contingency plans

There should be a contingency plan that identifies the important adverse events that may be encountered during the journey, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

3. Boat design and maintenance

a) *Boats* used for transport of *fish* should be designed, constructed and fitted as appropriate to the species, size and weight of the *fish* to be transported. Special attention should be paid to the avoidance of injury to *fish* through the use of secure smooth fittings free from sharp protrusions.

b) In order to minimise the likelihood of the spread of pathogenic agents during a journey, *boats* should be designed to allow the secure handling of dead *fish*, and thorough cleaning and disinfection prior to and after the journey.

c) *Boats* should be maintained in good mechanical and structural condition.

d) *Boats* should have adequate circulation of water and equipment for oxygenation to meet variations in the conditions during the journey.

e) The *fish* should be able to be inspected en route to ensure that *fish* welfare standards are fulfilled.

f) Containers carried on *boats* should be adequately secured.

g) The maximum number of *fish* to be transported in a container should be determined before the *vehicle* is loaded and the biomass should be able to be measured during the loading process.

h) Documentation carried with the *boat* should include:

i) maintenance programme;

ii) journey logbook;

iii) check-list for completed cleaning and disinfection;

iv) licence from the *Competent Authority*;

v) drawings (plan) of the container and pipe system of the transport unit.

i) The transport unit should be of a type approved by the *Competent Authority* which should give consideration to the above factors.

4. Water and equipment on boat and/or container

a) Equipment to keep water circulation, water quality (e.g. oxygen, pH, temperature), and monitoring of water quality should be available.

b) Adequate water circulation and extra oxygenation which can be adjusted to meet variations in temperature during the transport to fulfil the needs of the *fish* species being transported should be available.

c) The water used should not come from locations under restriction by the *Competent Authority*. The water should be oxygen saturated.

5. Documentation

a) *Fish* should not be loaded until the required documentation is complete.

b) The documentation accompanying the consignment (the journey log) should include:

i) journey travel plan including a contingency plan for emergencies and actions to be taken during the transport;

ii) date, time, and place of loading;

iii) *fish* species transported;

iv) information on biomass load, route, water quality and exchanges, and morbidity/mortality;

v) expected time, date and place of arrival and unloading;

vii) information to allow traceback to the premises of origin;

viii) *stocking density* estimate for containers/compartments in the consignment.

Community comment

The keeping of records for "a considerable time" it too vague and imprecise. A period of 3 years could be a suitable period to retain records which could be important records from an epidemiological and animal health perspective.

c) The transport log should be made available to the dispatcher and the receiver of the consignment as well as to *Competent Authority* upon request. Transport logs from previous journeys should be kept for a considerable time after completion.

d) When health certification is required to accompany consignments of *fish*, it should include:

i) appropriate information on the origin of the *fish*;

ii) health status including test, treatment and vaccination status.

6. Preparation of fish for the journey

a) *Fish* found unfit for transport by inspection by the *aquatic animal technician*, captain or fish health biologist/veterinarian should not be loaded onto a *boat*.

b) A group of *fish* that is unfit to travel includes:

i) a group undergoing a disease event which would be exacerbated by handling or transport;

Community comment

The words "or pathogenic agents" should be deleted since many pathogenic agents such as IPM virus are naturally present in the environment of fish and so exposure cannot be excluded or prevented. Some examples of possible "stressors" should be given, for example exposure to extreme temperatures, chemical agents etc.

ii) a group with recent exposure to stressors or pathogenic agents.

7. Species-specific recommendations

Transport procedures should be able to take account of variations in the behaviour and needs of the *fish* species. Handling procedures that are successful with one species are often ineffective or dangerous with another.

Recommendations for specific species are described in detail in Appendices XXX. Some species may need to be physiologically prepared prior to entering a new environment; this may include food deprivation or osmo-regulatory capacity.

8. Nature and duration of the journey

The pre-journey preparation, the duration and route of a journey should be determined by:

a) the purpose of the journey e.g. biosecurity issues, transport of juvenile *fish*, fish for slaughter and killing for disease control purposes;

b) the ability of the *fish* to cope with the stress of *transport*;

c) the previous handling and transport experience of the *fish*;

d) intrinsic factors such as *stocking density*, species and life-stage being transported, metabolic rate of the *fish*;

e) the quality of water and the availability of water exchange facilities;

f) other extrinsic factors such as environmental conditions (e.g. air and water temperature), *vessel* and equipment design, road and weather conditions as well as *boat* transport quality.

Article 5

Loading the fish

1. Since loading has been shown to be the procedure most likely to be the cause of poor welfare in transported *fish*, the issues which should be addressed to avoid unnecessary stress and injury to the *fish* include:

   a) crowding;

   b) improperly constructed or operated nets;

   c) improperly constructed or operated pumps, pipes and fittings;

Community comment

The words "and air temperature" should be added to the next bullet point since air temperatures below 0°C can be an important risk factor at both loading and unloading.

   d) water quality.

2. The density of *fish* in a container or compartment should not exceed the maximum load (kg/m^2 and/or kg/m^3) for a given species and a given situation. Recommendations for specific species are described in detail in Appendix XXX. During loading, techniques should be used to measure and record the biomass.

3. Loading should be carried out by *aquatic animal technicians* with knowledge and experience of the behavioural and characteristics of the *fish* species being loaded.

Article 6

Travel

1. General considerations

   a) The captain should ensure that the load is checked immediately before departure to ensure that the *fish* have been properly loaded. Each load should be checked again early in the trip.

Community comment

The words "where possible" should be added to the start of the second sentence in the next bullet point since in many transport systems dead fish cannot be easily removed unless they float to the surface (e.g. in well boats). It should be made clear that the keeping of these dead fish in biosecure conditions is intended to reduce possible

exposure of other surviving fish to the pathogenic agents or contamination in question etc.

b) Periodic inspections should take place during the trip to maintain acceptable welfare conditions. *Fish* found moribund or dead should be removed from contact with other *fish* and kept under biosecure conditions.

Community comment

The wording "as appropriate as possible" is unclear.

c) The captain should ensure that water quality is monitored as appropriate as possible and the necessary adjustments made to avoid extreme conditions regarding water temperature, oxygen levels, CO_2 levels, pH changes and ammonia nitrogen.

d) The captain should try to minimise the effect of adverse environmental conditions which may affect the welfare of the *fish*.

2. Emergency procedures

a) In the event of a *fish* health emergency on board, the captain should contact the relevant *Competent Authority* to determine the correct procedure to follow.

Community comment

The word "is" should be added before the words "in compliance.

b) If the killing of *fish* is necessary during the journey, the captain should ensure that the killing is carried out in accordance with the guidelines for the humane killing of *fish* for disease control purposes, and their disposal in compliance with relevant animal health and environmental legislation.

c) *Aquatic animal technicians* at the place of unloading should be notified of increased mortality during the journey to enable appropriate arrangements to be made in accordance with the contingency plan.

Article 7

Unloading the fish

1. The principles of good *fish* handling during loading apply equally during unloading.

Community comment

At unloading account should be taken of the air temperature since air temperatures below 0°C can be an important risk factor at both loading and unloading.

2. Some species of *fish* should be acclimatised if there is a likelihood of the *fish* being unloaded into water of a significantly different temperature.

3. *Fish* should be unloaded from the *vehicle* into appropriate compartments as soon as possible after arrival at the destination, but sufficient time should be allowed for unloading to ensure that the unloading proceeds smoothly and does not cause harm to the *fish*.

4. Unloading should be supervised by *aquatic animal technicians* with knowledge and experience of the behavioural and physical characteristics of the species being unloaded, and of the equipment being used.

Community comment

The words "sorted out and disposed" should be replaced by the words "separated and disposed of".

5. Moribund or injured *fish* or *fish* otherwise disabled during a journey should be sorted out and disposed in accordance with the guidelines for the *humane killing* of *fish* for disease control purposes.

Article 8

Post-journey activities

1. General considerations

   a) As the health of the *fish* may be compromised as a result of transport and/or change of environment, the *aquatic animal technician* receiving the *fish* should closely observe them during the post-journey period, and keep appropriate records.

Community comment

The words "of disease" should be added after the words "clinical signs". The words "aquatic animal technicians" should be replaced by "a veterinarian or other fish health specialist" since these have the expertise to diagnose and treat fish diseases.

   b) *Fish* which show clinical signs following the journey should be examined by *aquatic animal technicians* and as appropriate treated, isolated or killed in accordance with the Guidelines for the humane killing of *fish* for disease control purposes.

   c) Significant problems arising during a journey should be evaluated and corrective actions taken if necessary.

2. Cleaning and disinfection

Community comment

In the next sentence the word "involved" should be replaced by "involves" if this refers to cleaning before a new delivery or pick-up.

If the next journey involved a new pickup or delivery point, or a different type of load, *boats*, containers and other equipment used to transport *fish* should be cleaned and disinfected before re-use, in accordance with Appendix 5.2.1. of the *Aquatic Code*.

Article 9

Actions in the event of an inability to unload a consignment

1. The welfare of the *fish* should be the first consideration in the event of an inability to unload a consignment.

2. In the case of an international journey, the OIE dispute settlement mechanism should be followed to identify a mutually agreed solution which will address animal health and any other welfare issues in a timely manner.

Appendix XXXIV

GUIDELINES FOR THE LAND TRANSPORT OF FISH

Community comment

The scope of these draft guidelines should be carefully considered. By the sentence "The guidelines may also apply to other *fish* species" **it is unclear whether this implies only farmed fish. It should be considered that brood stock are sometimes captured from the wild and transported for use in capture-based aquaculture. It is also not clear whather the guidelines would apply to wild caught ornamental fish, elvers, eels etc. The transport of fish by air-helicopter should also be considered.**

In finalising these guidelines the new Council of Europe recommendation on the welfare of farmed fish and also the EFSA scientific opinions on fish transport and stunning-killing should be taken into account

http://www.coe.int/t/e/legal_affairs/legal_co-operation/biological_safety,_use_of_animals/farming/Rec%20fish%20E.asp#TopOfPage

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/424_en.html

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/495_en.html

Preamble: These guidelines apply to the following farmed species of fish: salmonids and cyprinids. The guidelines may also apply to other *fish* species.

Article 1

The length of time *fish* spend on a transport should be as short as possible.

Article 2

Responsibilities

Community comment

As with the transport guidelines of the Terrestrial Code, to ensure the proper application of these guidelines the responsibilities of all those persons involved in the transport chain need to be very clearly explained (who is responsible for what).

The welfare of *fish* during their transport is paramount and the joint responsibility of all people involved. These guidelines apply to the transport of *fish* within a country and between countries. The roles of each of those responsible are defined below:

1. Owners and managers of *fish* are responsible for the general health of the *fish* and their fitness at the start of the journey and to ensure the overall welfare of *fish* during the transport regardless whether these duties are subcontracted to other parties.

2. *Aquatic animal technicians* handling *fish* prior to loading as well as during loading and unloading have a personal responsibility for their welfare.

3. Transport companies, *vehicle* owners and drivers, in cooperation with the *Competent Authorities*, are responsible for planning the journey to ensure that the transport can be carried out properly according to *aquatic animal* welfare standards; these include:

    a) responsibility for choosing an appropriate and functioning *vehicle* and ensuring that competent staff are available for loading and unloading;

    b) responsibility for developing and keeping up to date contingency plans to address emergencies and minimise stress during transport;

    c) responsibility for correct loading of the *vehicle* with the *fish*, for regular inspections of the *fish* during the journey and for appropriate responses to problems arising.

4. Drivers should be properly trained in transport regulations, and the correct *vehicle* and equipment usage to ensure that *aquatic animal* welfare standards are applied. The driver is responsible for all documentation relevant to the journey.

5. Managers of facilities at the start and at the end of the journey are responsible for:

    a) providing suitable equipment for loading and unloading to ensure that *fish* welfare standards are applied;

    b) providing *aquatic animal technicians* to load and unload the *fish* in a manner that causes minimum stress and injury;

    c) minimising the opportunities for disease transmission while the *fish* are in the facilities;

    d) providing facilities and agents for washing and disinfecting *vehicles* after unloading;

    e) providing facilities and veterinarians, fish health biologists or other *aquatic animal technicians* be enable killing of the *fish* humanely if required.

6. The responsibilities of the *Competent Authorities* include:

    a) establishing minimum standards for *fish* welfare, including requirements for the inspection of *fish* before, during and after their travel, and appropriate certification and record keeping;

    b) approving *vehicles* for the transport of *fish*;

    c) ensuring appropriate awareness and training;

    d) setting licensing standards for drivers, *aquatic animal technicians* and managers;

e) implementation of the standards, including through accreditation of / interaction with other organisations;

f) providing the latest animal health information and designated restriction zones;

g) monitoring and evaluating health and welfare performance.

7. Private veterinarians and fish health biologists involved in transporting *fish* and the associated handling procedures should have specialist training in such matters.

Article 3

Competence

Community comment

The issue of handler competence and certification has been a point of some discussion in the animal welfare guidelines prepared under the OIE Terrestrial Code. That issue should also be considered here to ensure a consistent approach across the OIE Aquatic and Terrestrial Codes.

1. All persons handling *fish*, or who are otherwise responsible for *fish* during journeys, should be competent according to their responsibilities listed in Articles 1 and 4. Competence may be gained through formal training and/or practical experience. Competence in areas other than *fish* welfare would need to be addressed separately.

2. Any necessary training should address:

a) fish behaviour, physiology, general signs of disease and indicators of poor fish welfare;

b) transport regulations;

c) operation and maintenance of equipment relevant to fish health and welfare;

d) water quality;

e) methods of fish handling during transport and associated activities such as loading and unloading;

f) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies;

g) species-specific aspects of fish handling and care, whenever necessary;

h) appropriate record keeping.

Article 4

Planning the journey

1. General considerations

a) Adequate planning is a key factor affecting the welfare of *fish* during a journey.

b) Before initiation of travel, plans should be made in relation to:

i) type of *vehicle* required;

ii) route, taking into account distance, type and quality of road, topography, traffic conditions and availability of water exchange stations for *fish*;

iii) nature and duration of journey;

iv) care of the *fish* during the journey;

v) emergency response procedures.

c) Extreme weather conditions are hazards for *fish* undergoing transport and require appropriate *vehicle* design to minimise risks. In some extreme conditions of heat or cold, *fish* should not be transported at all.

d) As *fish* transport is often a significant factor in the spread of infectious diseases, journey planning should take the following into account:

Community comment

Following anti-microbial treatment the issue of allowing a recovery time before transport should be considered.

i) anti-microbials should not be used prophylactically; if used therapeutically, treatment should only be carried out upon instruction by a veterinarian or fish health biologist;

ii) before transport, the necessary biosecurity level should be assessed (e.g. washing and disinfection practices, safe places for changing water and treatment of transport water).

2. Contingency plans

There should be a contingency plan that identifies the important adverse events that may be encountered during the journey, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

3. Vehicle and container design and maintenance

a) *Vehicles* used for the transport of *fish* should be designed, constructed and fitted as appropriate to the species, size and weight of the *fish* to be transported; special attention should be paid to the avoidance of injury to *fish* through the use of secure smooth fittings free from sharp protrusions.

b) In order to minimise the likelihood of the spread of pathogenic agents during a journey, *vehicles* and containers should be designed to allow the secure handling of dead *fish*, and thorough cleaning and disinfection prior to and after the journey.

c) *Vehicles* should be maintained in good mechanical and structural condition.

d) The *fish* should be able to be inspected en route to ensure that *fish* welfare standards are fulfilled.

e) Containers carried on *vehicles* should be adequately secured.

f) The maximum number of *fish* to be transported in a container should be determined before the *vehicle* is loaded and the biomass should be able to be measured during the loading process.

g) Documentation carried with the *vehicle* should include:

i) maintenance programme;

ii) transport logbook;

iii) check-list for completed cleaning and disinfection;

iv) licence from the *Competent Authority*;

v) drawings (plan) of the container and pipe system of the transport unit.

h) The transport unit should be of a type approved by the *Competent Authority* which should give consideration to the above factors.

4. Water and equipment on vehicle and container

a) Equipment to keep water circulation, water quality (e.g. oxygen, pH, temperature), and monitoring of water quality should be available.

b) Adequate water circulation and extra oxygenation which can be adjusted to meet variations in temperature during the transport to fulfil the needs of the *fish* species being transported, should be available.

c) Water filling and exchange should only take place at the place of loading or at a source that is approved by the *Competent Authority*. The transport water should be added to the container prior to loading the *fish* and the water should be oxygen saturated.

5. Documentation

a) *Fish* should not be loaded until the required documentation is complete.

b) The documentation accompanying the consignment (the journey log) should include:

i) journey travel plan including a contingency plan for emergencies and actions to be taken during the transport;

ii) date, time, and place of *loading*;

iii) *fish* species transported;

iv) information on biomass load, route, water quality and exchanges, and morbidity/mortality;

v) expected time, date and place of arrival and *unloading*;

vi) veterinary certification, when required;

vii) information to allow traceback to the premises of origin;

viii) *stocking density* estimate for containers/compartments in the consignment.

Community comment

The keeping of records for "a considerable time" it too vague and imprecise. A period of 3 years could be a suitable period to retain records which could be important records from an epidemiological and animal health perspective.

c) The transport log should be made available to the dispatcher and the receiver of the consignment as well as to *Competent Authority* upon request. Transport logs from previous journeys should be kept for a considerable time after completion.

d) When health certification is required to accompany consignments of *fish*, it should include:

i) appropriate information on the origin of the *fish*;

ii) health status including test, treatment and vaccination status.

6. Preparation of fish for the journey

Community comment

The issue of food deprivation/starvation before transport should be considered in these guidelines.

Community comment

The words "or pathogenic agents" should be deleted from point b (ii) since many pathogenic agents such as IPM virus are naturally present in the environment of fish and so exposure cannot be excluded or prevented. Some examples of possible "stressors" should be given, for example exposure to extreme temperatures, chemical agents etc.

a) *Fish* found unfit for transport by inspection by farm staff, driver or fish health biologist/veterinarian should not be loaded onto a *vehicle*.

b) A group of *fish* that is unfit to travel includes:

i) a group undergoing a disease event which would be exacerbated by handling or transport;

ii) a group with recent exposure to stressors or pathogenic agents.

7. Species-specific recommendations

Transport procedures should be able to take account of variations in the behaviour and needs of the *fish* species. Handling procedures that are successful with one species are often ineffective or dangerous with another.

Recommendations for specific species are described in detail in Appendices XXX. Some species may need to be physiologically prepared prior to entering a new environment; this may include food deprivation or osmo-regulatory capacity.

8. Nature and duration of the journey

The pre-journey preparation as well as the duration and route of a journey should be determined by:

a) the purpose of the journey e.g. biosecurity issues;

b) the ability of the *fish* to cope with the stress of *transport*;

c) the previous handling and transport experience of the *fish*;

d) intrinsic factors such as *stocking density*, species and life-stage being transported as well as metabolic rate of the *fish*;

e) the quality of water and the availability of water exchange facilities;

f) other extrinsic factors such as environmental conditions (e.g. air and water temperature), *vehicle* and equipment design, road and weather conditions as well as driving quality.

Article 5

Loading the fish

1. Since loading has been shown to be the procedure most likely to be the cause of poor welfare in transported *fish*, the issues which should be addressed to avoid unnecessary stress and injury to the *fish* include:

   a) crowding;

   b) improperly constructed or operated nets;

   c) improperly constructed or operated pumps, pipes and fittings;

Community comment

At loading account should be taken of the air temperature since air temperatures below 0°C can be an important risk factor at both loading and unloading.

   d) water quality.

Community comment

It should be considered whether "density" should be replaced by "stocking density".

2. The density of *fish* in a container or compartment should not exceed the maximum load (kg/m^2 and/or kg/m^3) for a given species and a given situation. Recommendations for specific species are described in detail in Appendix XXX. During loading, techniques should be used to measure and record the biomass.

3. Loading should be carried out by *aquatic animal technicians* with knowledge and experience of the behavioural and physical characteristics of the *fish* species being loaded.

Article 6

Travel

1. General considerations

a) The driver should check the load immediately before departure to ensure that the *fish* have been properly loaded. Each load should be checked again early in the trip.

Community comment

The words "where possible" should be added to the start of the second sentence in the next bullet point since in many transport systems dead fish cannot be easily removed unless they float to the surface. It should be made clear that the keeping of these dead fish in biosecure conditions is intended to reduce possible exposure of other surviving fish to the pathogenic agents or contamination in question etc.

b) Periodic inspections should take place during the trip to maintain acceptable welfare conditions. *Fish* found moribund or dead should be removed from contact with other *fish* and kept under biosecure conditions.

c) The driver should monitor water quality and make the necessary adjustments to avoid extreme conditions regarding water temperature, oxygen levels, CO_2 levels, pH changes and ammonia nitrogen.

d) The driver should utilise smooth, defensive driving techniques, without sudden turns or stops to minimise uncontrolled movements of the *fish*.

2. Emergency procedures

a) In the event of a *fish* health emergency on board, the driver should contact the relevant *Competent Authority* to determine the correct procedure to follow.

b) If the killing of *fish* is necessary during the journey, the *aquatic animal technician* should ensure that the killing is carried out in accordance with the guidelines for the *humane killing* of *fish* for disease control purposes, and their disposal in compliance with relevant animal health and environmental legislation.

c) *Aquatic animal technicians* at the place of unloading should be notified of increased mortality during the journey to enable appropriate arrangements to be made in accordance with the contingency plan.

Article 7

Unloading the fish

1. The principles of good *fish* handling during loading apply equally during unloading.

Community comment

At unloading account should be taken of the air temperature since air temperatures below 0°C can be an important risk factor at both loading and unloading.

2. Some species of *fish* should be acclimatised if there is a likelihood of the *fish* being unloaded into water of a significantly different temperature.

3. *Fish* should be unloaded from the *vehicle* into appropriate compartments as soon as possible after arrival at the destination, but sufficient time should be allowed for unloading to ensure that the unloading proceeds smoothly and does not cause harm to the *fish*.

4. Unloading should be supervised by an *aquatic animal technician* with knowledge and experience of the behavioural and physical characteristics of the species being unloaded, and of the equipment being used.

Community comment

The words "sorted out and disposed" should be replaced by the words "separated and disposed of".

5. Moribund or injured *fish* or *fish* otherwise disabled during a journey should be sorted out and disposed in accordance with the guidelines for the *humane killing* of *fish* for disease control purposes.

Article 8

Post-journey activities

1. General considerations

a) As the health of the *fish* may be compromised as a result of transport and/or change of environment, the *aquatic animal technician* receiving the *fish* should closely observe them during the post-journey period, and keep appropriate records.

Community comment

The words "of disease" should be added after the words "clinical signs". The words "qualified personnel" should be replaced by "a veterinarian or other fish health specialist" since these have the expertise to diagnose and treat fish diseases.

There should be consistency in the style and format used to refer to other OIE Guidelines: somethings these are referred to using the notation "Guidelines", "guidelines", or "OIE guidelines". A standardised style of cross-referencing is required.

b) *Fish* which show clinical signs following the journey should be examined by qualified personnel and as appropriate treated, isolated or killed in accordance with the Guidelines for the humane killing of fish for disease control purposes.

c) Significant problems arising during a journey should be evaluated and corrective actions taken if necessary.

2. Cleaning and disinfection

If the next journey will involve a new pickup or delivery point (or different type of load), *vehicles*, containers and other equipment used to transport *fish* should be cleaned and disinfected before re-use, in accordance with Appendix 5.2.1. of the *Aquatic Code*.

Article 9

Actions in the event of an inability to unload a consignment

1. The welfare of the *fish* should be the first consideration in the event of an inability to unload a consignment.

2. In the case of an international journey, the OIE dispute settlement mechanism should be followed to identify a mutually agreed solution which will address animal health and any other welfare issues in a timely manner.

Appendix XXXV

GUIDELINES FOR THE SLAUGHTER OF FARMED FISH FOR HUMAN CONSUMPTION

Community comment

The scope of these draft guidelines should be carefully considered. In finalising these guidelines the new Council of Europe recommendation on the welfare of farmed fish and also the EFSA scientific opinions on fish transport and stunning-killing should be taken into account

http://www.coe.int/t/e/legal_affairs/legal_co-operation/biological_safety,_use_of_animals/farming/Rec%20fish%20E.asp#TopOfPage

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/424_en.html

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/495_en.html

Article 1

Community comment

These guidelines only describe methods currently in practical use and guidance on how to carry out these slaughter methods in as welfare-friendly a manner as possible. However in certain situations some methods may be less suitable on welfare grounds than others and new and improved techniques may also emerge. Therefore it is very important to update these guidelines in the future to take account of new stunning-killing methods which are currently under development (e.g. electrical stunning outside the confines of a tank).

1. General principles for slaughter

These guidelines address the need to ensure the welfare of *fish* during pre-slaughter and slaughter processes, until they are dead.

These guidelines apply to those *fish* species that are commonly slaughtered in *fish* slaughterhouses. Other *aquatic animals*, wherever they have been reared, should be managed to ensure that their transport and slaughter/*killing* is carried out without causing undue stress to such animals; the principles underpinning these guidelines also apply to those animals.

2. Personnel

Persons engaged in the unloading, moving, handling, *stunning* and slaughter of *fish* play an important role in their welfare. Personnel handling *fish* for slaughter should be experienced and competent in the transport and handling of *fish*, and understand their behaviour patterns as well as the underlying principles necessary to carry out their tasks. They should also be familiar with these guidelines and the applicable legislation.

The management of the *fish* slaughterhouse and the *Competent Authority* should together ensure that these persons carry out their tasks in accordance with the principles of *aquatic animal* welfare.

Article 2

Transport of fish for slaughter

Fish for slaughter for human consumption should be transported to *fish* slaughterhouses in accordance with Chapter X.X.X on the Guidelines on the transport of *fish*.

Community comment

Where applicable it might be important to consider a period of starvation before slaughter, as measured in "degree days". The possible mixing of fish between consignments should also be clarified as well as the implications for animal health, welfare and biosecurity.

Article 3

Design of facilities for holding fish prior to slaughter

Community comment

The next sentence is unclear and should be clarified, especially the intended meaning of the phrase "the maximum number of *fish* in relation to the throughput of the slaughterhouse"**.**

1. The holding facilities should be designed and constructed to hold the maximum number of *fish* in relation to the throughput of the slaughterhouse without compromising the welfare of the *fish*.

2. In order to permit operations to be conducted as smoothly and efficiently as possible without injury or undue stress to the *fish*, the facilities should be of a size that allows the *fish* to move freely in the required direction, using their behavioural characteristics.

3. The following guidelines may help to achieve this:

   a) Nets and holding tanks

      i) The design of containment or crowding nets should avoid corners or folds, pockets or traps.

ii) Containment nets should not cause injury and should be of appropriate mesh size and type.

iii) Nets and tanks should generally be circular or of sufficient size, and constructed of suitable materials to allow a continuous forward swimming direction with minimal risk of injury.

iv) Areas or zones of turbulence should be minimised or eliminated.

b) Water

Water quality should be appropriate regarding the density and species of *fish*.

c) Sensory stimulation

i) Lighting should encourage the movement of *fish* in the correct direction, by avoiding bright lights and reflective surfaces facing *fish*.

ii) Undue noise should be minimised.

d) Systems for moving *fish*, including pumps and pipes

i) For optimum welfare, *fish* should be pumped in a continuous flow from source to destination.

ii) Pumps should have a capacity to produce a flow sufficient to ensure movement of *fish* in correct direction; areas of turbulence should be avoided.

iii) There should be a contingency plan in place in case pumping ceases, to avoid exposing *fish* to low oxygen or other factors which could compromise their welfare.

iv) Materials used in construction should provide smooth contact surfaces and should not contain protrusions which may injure *fish*; all bends, entries and exits should be designed to allow smooth unobstructed flow of *fish* and water.

v) *Fish* should not drop onto hard surfaces at points of exit.

vi) Pipes should be of appropriate diameter and flow of sufficient strength to prevent *fish* being trapped.

vii) Brailing devices (used to haul *fish* into boats), if used, should contain an adequate volume of water in proportion to the number of *fish*, to maintain *fish* welfare.

Article 4

Unloading and moving *fish* in slaughterhouses

1. *Fish* should be transported for slaughter in a way that minimises adverse *fish* health and welfare outcomes and the transport should be carried out in accordance with the OIE Guidelines for the transport of *fish*.

. The following principles should apply to the unloading and moving of *fish* in the slaughterhouse:

a) The welfare of the *fish* and their environment should be assessed on arrival prior to unloading, and corrective action taken as appropriate.

b) Management procedures should be in place to ensure that suitable environmental conditions are maintained within the holding and moving systems.

c) Injured or sick *fish* should be separated and killed humanely.

d) Sedation, where approved for *fish* for human consumption, may be used to minimise the stress associated with the movement or crowding of *fish*.

e) The crowding period prior to slaughter should be as short as possible, and preferably the *fish* should be subject to crowding conditions once only.

f) Physical, mechanical or manual handling of *fish* should be minimised.

g) Where possible, *fish* should be allowed to swim directly into a percussive stunning device (without handling) to avoid handling stress.

Article 5

Summary of acceptable stunning methods for fish and their respective welfare issues

Stunning method	Fish welfare concerns / implications	Applicable species
Percussive stunning	Hand operated equipment may be hampered by uncontrolled movement of the fish. Unconsciousness may not be achieved due to a too weak blow to the head. Injuries may occur.	Salmonids Halibut
Spiking (Iki-Jime)	Inaccurate application may cause injuries. May be hampered by uncontrolled movement of the fish. Difficult to apply.	Salmonids Tuna
Electrical stunning	Difficult to control and apply correctly in the field. Optimal control parameters unknown. May be hazardous to operating personnel.	Salmonids
Free bullet	Shooting distance; calibre. Noise of guns may cause stress reaction. May be hazardous for operating personnel.	Tuna

Note: A key *fish* welfare requirement is the competence of the personnel carrying out the *stunning* methods.

Article 6

Stunning methods

1. General considerations

For details on *stunning* methods, see Appendix X.X.X. on the Guidelines for the *humane killing* of *fish* for disease control purposes.

The *Competent Authority* should regularly ensure the appropriateness and effectiveness of the *stunning* equipment and process, and that the operators are competent to humanely kill *fish*. The responsibility for operator competence lies with the management of the *fish* slaughterhouse.

If *fish* are removed from the water, *stunning* should take place as soon as possible (preferably within 5–10 seconds).

The equipment used for *stunning* should be maintained, adjusted and operated in accordance with the recommendations of the manufacturer. It should be tested on a regular basis to ensure that performance is adequate.

Bleeding should only be performed on *fish* which are effectively stunned.

Stunning should not take place if slaughter is likely to be delayed.

When killing novel *fish* species, it is important to obtain information on the exact location of the brain and *Medulla oblongata* in order to target the *stunning* correctly to the head.

Signs of correct *stunning* include:

a) immediate loss of respiratory movement (loss in opercular activity);

b) loss of *visual evoked response* (VER);

c) immediate loss of vestibulo-ocular reflex (VOR, eye rolling);

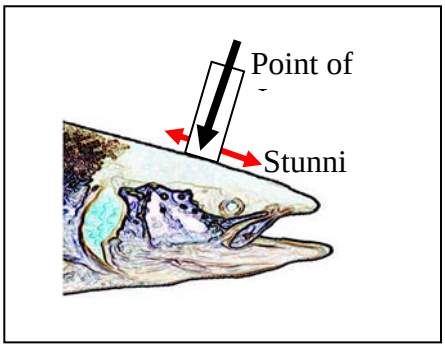
d) loss of tail reflex and muscular movements.

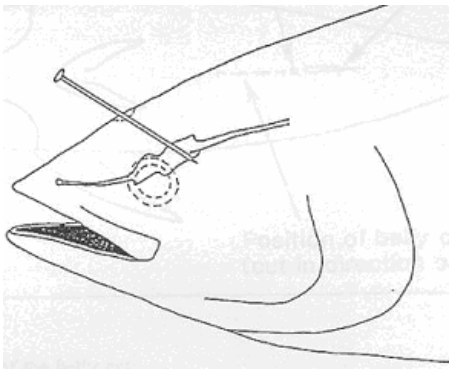
2. Mechanical stunning

Percussive *stunning* is achieved by a blow of sufficient strength to the head applied above or immediately adjacent to the brain in order to damage the brain.

Spiking, coring or Iki-jime are irreversible killing methods for *fish* based on physical damage to the brain by inserting a spike into the brain either manually or using specially developed equipment to destroy sensory and motor functions in large *fish*. The so-called captive needle stun is a modification of spiking.

Mechanical *stunning* is an irreversible method in more than 99% of the cases if correctly applied. If stunned *fish* show recovery of reflexes or motor function, the *fish* should be re-stunned.





Spiking of tuna

3. Electrical stunning

Electrical *stunning* involves the application of an electrical current of sufficient strength, frequency and duration to cause immediate unconsciousness.

An electrical *stunning* device should be used in accordance with the following principles:

a) The operators should be competent in applying the method properly.

b) The electrical *stunning* device should be constructed and used for the specific *fish* species and their environment.

c) It should be ensured that heads of the *fish* are confined beneath the surface of the water, and that there is a uniform distribution of electrical current in the stun tank or chamber.

d) The equipment used for *stunning* should be maintained and operated in accordance with the manufacturer's recommendations, and it should be tested on a regular basis to ensure that the power output is adequate.

e) An effective stun and kill should be verified by the absence of consciousness. For signs of correct *stunning*, see description under mechanical *stunning* above. Eels are reported to be somewhat resistant to electrical *stunning*.

f) Appropriate protective clothing (including rubber gloves and boots) should be worn.

g) The voltage in the stun must be of suitable conductivity.

Article 7

Community comment

It is unclear from the title whether these methods are considered acceptable or not. CO2 is listed here as being used for recoverable immobilisation and it is not mentioned in the table of acceptable stunning methods. The aversiveness of CO2 should be carefully considered, even when used only for immobilisation (sedation).

The applicable species column appears very broad (e.g. CO2 for "most fish species"). The layout of this table should be re-considered to improve clarity.

Summary of methods other than stunning used for the sedation, anaesthesia or immobilisation of fish

Method	Application /effect	Fish welfare concerns / implications	Key fish welfare requirements	Applicable species
Live chilling	Recoverable immobilisation prior to stunning / slaughter.	Fish have not lost sensation. Season and species dependent.	Competent personnel and suitable control equipment/process	Salmonids / cod/ wolffish / halibut
Aqui-S	Recoverable sedation/anaesthesia prior to stunning / slaughter.	Fish may recover sensation prior to slaughter.	Control of dose. Competent personnel	Most fish species
CO_2	Recoverable immobilisation prior to stunning / slaughter.	Aversive. Fish become exhausted and die due to hypoxia and suffocation. Fish may not lose sensation	Competent personnel	Most fish species
Combination of CO_2/O_2 - Live chilling	Recoverable immobilisation prior to stunning / slaughter	Aversive. Fish may not lose sensation. Season and species dependant.	Competent personnel	Salmonids
Electrical harpoon	Irrecoverable electrocution applied to the head prior to slaughter.	Good accuracy required to ensure fish killed	Competent personnel	Large tuna

For more details on methods, see the guidelines on killing of *fish* for disease control purposes.

Article 8

Unacceptable methods, procedures or practices on fish welfare grounds

Community comment

Some of these methods are listed in Article 7. The term "mass killing of fish" is open to varying interpretations. Consistency with Council of Europe and EFSA recommendations should be carefully evaluated.

The following methods are not considered acceptable for anaesthetising *fish* on welfare grounds:

1. CO_2 is not acceptable for the mass killing of *fish*, due to its aversive effects.

2. Live chilling/CO_2 is not acceptable for the mass killing of *fish*, due to its aversive effects.

3. Salt or ammonia baths are not acceptable due to their aversive effects on *fish*.

4. Asphyxiation is not acceptable as sensation is not lost during the slow induction.

5. Exsanguination is not acceptable for the killing of conscious *fish*.

6. Accidental pre-stun electrical shocks as inadequate current and voltage gives recovery of consciousness.

Appendix XXXVI

GUIDELINES FOR THE HUMANE KILLING OF FISH FOR DISEASE CONTROL PURPOSES

Article 1

Community comment

The scope of these draft guidelines should be carefully considered. In finalising these guidelines the new Council of Europe recommendation on the welfare of farmed fish and also the EFSA scientific opinions on fish transport and stunning-killing should be taken into account

http://www.coe.int/t/e/legal_affairs/legal_co-operation/biological_safety,_use_of_animals/farming/Rec%20fish%20E.asp#TopOfPage

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/424_en.html

http://www.efsa.eu.int/science/ahaw/ahaw_opinions/495_en.html

Community comment

The scope of these guidelines needs to be clarified, the title refers to "fish" and article 1 refers to "finfish". It should be clarified whether this is restricted to farmed fish.

These guidelines only describe methods currently in practical use and it is important to update these guidelines in the future to take account of new stunning-killing methods which are still under development (e.g. integrated stun-bleed systems used in well boats in connection with harvesting).

General principles of humane killing of finfish for disease control purposes

1. Disease control contingency plans should be in place at a national level and should contain details of management structure, disease control strategies and operational procedures; *fish* welfare considerations should be addressed within these disease control contingency plans.

2. Disease control strategies should also address the *fish* welfare issues that may result from animal movement controls.

3. The following principles apply after a decision to kill the *fish* has been made.

4. All personnel involved in the *humane killing* of *fish* should have necessary competencies for such work. Competence may be gained through formal training and/or practical experience under supervision.

5. As necessary, operational procedures should be adapted to the specific circumstances operating on the premises and should address *fish* welfare and biosecurity.

6. Following the decision to kill the *fish*, killing should be carried out as quickly as possible and normal farming procedures should be maintained until the killing is implemented.

7. The handling and movement of *fish* should be minimised and when done, it should be done in accordance with the guidelines described below.

8. When *fish* are killed for disease control purposes, the methods used should result in immediate death or immediate loss of consciousness lasting until death.

9. There should be continuous monitoring of the procedures to ensure they are consistently effective with regard to *fish* welfare and biosecurity.

10. When the operational procedures are concluded, there should be a written report describing the practices adopted and their effect on *fish* welfare and biosecurity.

11. To the extent possible to minimise public distress, killing of *fish* and carcass disposal should be carried out away from public view. For carcass handling, see Chapter X.X.X. (under preparation).

Article 2

Organisational structure

The operational activities should be led by a *Competent Authority* official who has the authority to appoint the *aquatic animal technician* or operational team for each farm, and ensure that they adhere to the required *fish* welfare and biosecurity standards. When appointing such personnel, he/she should ensure that the personnel involved have the required competencies.

The *Competent Authority* official should be responsible for all activities on affected premises and should be supported by coordinators for planning (including communications), operations and logistics to facilitate efficient operations.

The *Competent Authority* official should provide overall guidance to personnel and logistic support for operations on all affected premises to ensure consistency in adherence to the OIE aquatic animal welfare and biosecurity guidelines.

In considering the associated *fish* welfare issues, responsibility and competencies required by key personnel to be involved in such work are described in Article 4.

Article 3

Responsibilities and competencies of the operational team or aquatic animal technician

1. Team leader

   a) Responsibilities

      i) Plan overall operations on an affected premises;

      ii) determine and address requirements for *fish* welfare, operator safety and biosecurity;

iii) organise, brief and manage team of people to facilitate *humane killing* of the relevant *fish* on the premises in accordance with national regulations and these guidelines;

iv) determine logistics required;

v) monitor operations to ensure that *fish* welfare, operator safety and biosecurity requirements are met;

vi) report upwards on progress and problems;

vii) provide a written report at the conclusion of the killing, describing the practices adopted and their effect on aquatic animal welfare and biosecurity outcomes.

b) Competencies

i) Appreciation of *fish* welfare and the underpinning behavioural, anatomical and physiological processes involved in the killing process;

ii) skills to manage all activities on premises and deliver outcome on time;

iii) awareness of psychological effects on farmer, team members and general public;

iv) effective communication skills.

2. Veterinarian/fish health biologist

a) Responsibilities

i) Determine and implement the most appropriate killing method to ensure that the *fish* are killed without avoidable pain and distress;

ii) determine and implement the additional requirements for *fish* welfare, including the order of killing;

iii) ensure confirmation that all the *fish* have been killed at an appropriate time after the *stunning*/*killing* procedure;

iv) minimise the risk of disease spread within and from the premises through the supervision of biosecurity procedures;

v) continuously monitor *fish* welfare and biosecurity procedures;

vi) in cooperation with the team leader, prepare a written report at the conclusion of the killing, describing the practices adopted and their effect on *fish* welfare.

b) Competencies

i) Ability to assess *fish* welfare, especially the effectiveness of *stunning* and *killing* and to correct any deficiencies;

ii) ability to assess biosecurity risks.

3. Aquatic animal technician

a) Responsibilities

Assist when requested.

b) Competencies

i) Specific knowledge of *fish*, and their behaviour and environment;

ii) review on-site facilities in terms of their appropriateness for mass destruction;

iii) design and construct temporary *fish* handling facilities, when required;

iv) experience in *fish* handling procedures.

4. Personnel responsible for killing

a) Responsibilities

Ensure *humane killing* of *fish* through effective *stunning/killing*.

b) Competencies

i) When required by regulations, licensed to use necessary equipment;

ii) competent to use and maintain relevant equipment and methods for the *fish* species involved;

iii) competent to assess effective *stunning/killing*.

5. Carcass disposal personnel

a) Responsibilities

Ensure efficient carcass disposal to ensure killing operations are not hindered.

b) Competencies

Competent to use and maintain available equipment and apply techniques for the *fish* species involved.

Article 4

Operational guidelines

1. Planning humane killing of fish

A plan for the *humane killing* of *fish* on affected premises should be developed by the *Competent Authority*. The plan should include consideration of:

a) minimising handling and movement of *fish*;

b) killing the *fish* on the affected premises; however, there may be circumstances where the *fish* may need to be moved to another location for killing; when the killing is conducted at *fish* slaughterhouse, the guidelines in Appendix X.X.X. should be followed;

c) the species, number, age and size of *fish* to be killed;

d) methods of killing the *fish*, and the costs thereof;

e) the availability of chemicals/equipment needed for the killing of the *fish*;

f) the facilities available on the aquaculture premises for sampling of dead *fish* following the killing;

g) biosecurity issues;

h) any legal issues that may be involved, in example where restricted veterinary drugs or poisons may be used, or where the process may impact on the environment, and

i) the presence of other nearby aquaculture premises;

j) implementation time.

In designing a killing plan, it is essential that the method chosen be consistently reliable to ensure that all *fish* are humanely and quickly killed.

2. Killing of fish

a) Single individuals

Any moribund, injured or seriously sick *fish* with no chance of recovery should be killed humanely without delay.

Such *fish* should be killed instantly by a blow to the head or by a suitable anaesthetic. Only anaesthetics registered for use in *fish* should be used. No *fish* should die by asphyxiation.

b) Mass kill

Mass kill of *fish* for disposal due to disease control or other purposes should be conducted under the supervision of the *Competent Authority*. The method of choice will depend on whether the killing takes place in a closed-, semi-closed- or open system.

Signs of effective *stunning/killing* include:

i) absence of respiratory movement (loss in opercular activity);

ii) absence of *visual evoked response* (VER);

iii) absence of vestibulo-ocular reflex (VOR, eye rolling);

iv) absence of tail reflex and muscular movements.

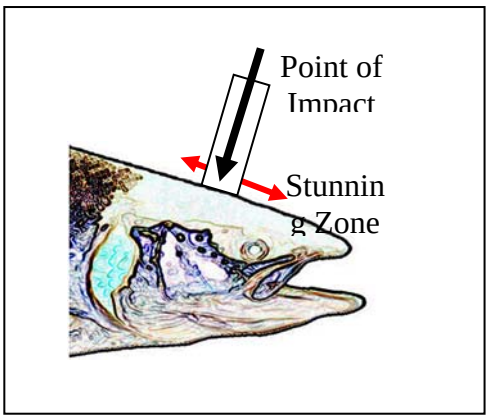
ARTICLE 5

MECHANICAL STUNNING METHODS FOR FINFISH

1. Percussive stunning

a) Introduction

Killing by a blow to the head may be an appropriate *humane killing* method for larger *fish*, when the number of *fish* is limited. Operating personnel using this method for *killing* should be competent to ensure the method is performed properly. Ideally, this method should be followed by decapitation, pithing or exsanguination. Percussive *stunning* is an irreversible method in more than 99% of the cases if correctly applied. The *fish* should be out of water for only 5–10 seconds before blow is applied.



b) Requirements for effective use

i) Operating personnel using manual or automated percussive *stunning* should be skilled in order to ensure the *humane killing* of *fish*.

ii) *Fish* should be quickly removed from the water, restrained and given a quick blow to the head, delivered either by a club or by mechanical *stunning* device.

iii) The blow should be of sufficient force and delivered above or adjacent to the brain in order to render immediate unconsciousness.

iv) The *fish* should be inspected to check the effectiveness of *stunning*, and restunned if necessary.

c) Advantages

When percussive *stunning* is applied correctly, loss of consciousness is immediate.

d) Disadvantages

When the method is used improperly, immediate unconsciousness is not achieved and injuries as well as poor welfare to the *fish* may occur. Manual percussive *stunning* is only practicable for the killing of a limited number of *fish*. Defined criteria for all types of *fish* are lacking.

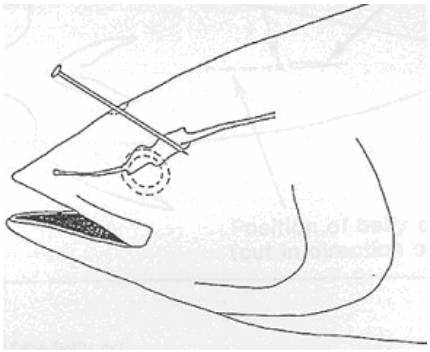
e) Conclusion

Percussive *stunning* is suitable for killing *fish* species such as salmonids and halibut and should ideally be followed by decapitation, pithing or exsanguination to ensure death.

2. Spiking, coring and Iki-jime

a) Introduction

Spiking, coring or Iki-jime are irreversible killing methods for *fish* based on physical damage to the brain by inserting a spike into the brain either manually or using specially developed equipment to destroy sensory and motor functions in large *fish*. The so-called captive needle stun is a modification of spiking.



The spike should be aimed on the skull in a position to penetrate the brain of the *fish* and the impact of the spike should produce immediate unconsciousness. Physical damage to the brain caused by penetration of the bolt may result in death; however, pithing or bleeding should be performed as soon as possible after the shot to ensure the death of the *fish*. The elapsed time between capture and spiking should be between 5–10 seconds and a minute.

b) Requirements for effective use

i) Operating personnel using manual or automated spiking equipment should be skilled in order to ensure the *humane killing* of *fish*.

ii) Only specifically designed devices should be used.

iii) *Fish* should be quickly removed from the water, restrained and the spike immediately inserted into the brain either manually or by an automated device.

iv) The spike should be inserted in such a way that the brain is completely destroyed.

c) Advantages

Immediate onset of unconsciousness occur when the spike is correctly and accurately applied and with immediate loss of movements and *visual evoked response* (VER).

d) Disadvantages

i) Difficult to apply in agitated *fish*.

ii) The handling of the *fish* during spiking may result in inaccurate application of the spike positioning and orientation may cause disabling and injuries to the *fish* and thus poor *fish* welfare will occur.

iii) Not applicable under field conditions unless the *fish* farm is equipped with sanitary slaughter equipment for the purpose.

e) Conclusion

The method is suitable for killing larger *fish* (including tuna) when used in *fish* slaughterhouses or in farms equipped with sanitary slaughter equipment.

3. Free bullet

a) Introduction

Shooting by using a free bullet may be used for killing large *fish* (tuna). The *fish* may either be crowded in the net and shot in the head, or caught and held in a fixed position in the surface of the net (gaffing) prior to being shot in the head. Commonly used firearms for shooting large *fish* include a 12-bore shotgun and a Magnum handgun (0.357).

b) Requirements for effective use

The *fish* should be positioned correctly and the shooting range should be as short as practicable.

c) Advantages

Shooting may be an effective and humane method for killing large *fish* as minimal handling and restraint are required.

d) Disadvantages

i) Gaffing causes pain.

ii) Gun noise may cause stress reactions.

iii) May be hazardous to operating personnel.

iv) Contamination of the working area due to release of body fluids may present a biosecurity risk.

e) Conclusions

The method is suitable for killing large *fish* under field conditions.

Article 6

Electrical stunning

1. INTRODUCTION

Electrical *stunning* involves the application of an electrical current of sufficient strength, frequency and duration to cause immediately unconsciousness. Provided sufficient current is applied, *fish* will not recover consciousness.

2. REQUIREMENTS FOR EFFECTIVE USE

a) Operating personnel of electrical *stunning* equipment should be competent in applying the method properly.

b) The electrical *stunning* device should be constructed and used for the specific *fish* species and their environment.

c) The equipment used for *stunning* should be maintained and operated in accordance with the manufacturer's recommendations, and it should be tested on a regular basis to ensure that the power output is adequate.

d) The equipment should only be used in accordance with the manufacturer's recommendations.

e) It should be ensured that heads of the *fish* are confined beneath the surface of the water, and that there is a uniform distribution of electrical current in the stun tank or chamber.

f) Uniform distribution of an appropriate electrical current in the water bath in which the *fish* are contained.

g) The time between crowding and *stunning* should be kept to a minimum.

Since *fish* for disposal do not need to be bled, the duration of the current in the bath should be of sufficient length to ensure that the *fish* are dead. An effective stun and kill should be verified. Signs of correct *stunning* include:

h) immediate loss of respiratory movement (loss in opercular activity);

i) loss of *visual evoked response* (VER);

j) immediate loss of vestibulo-ocular reflex (VOR, eye rolling);

k) loss of tail reflex and muscular movements.

3. ADVANTAGES

a) Electrical *stunning* is humane as the method may stun and kill immediately, and the *fish* do not have to be removed from the water.

b) A large number of *fish* may be stunned/killed simultaneously with minimum handling and restraint.

c) Non-invasive technique minimises biosecurity risk.

4. DISADVANTAGES

a) Requires industrial *fish* slaughterhouse premises or similar and is not applicable for mass kill of *fish* under field conditions.

b) The electrocution equipment should be applied and maintained correctly to produce an effective stun and kill.

c) Requires a reliable supply of electricity.

d) May be hazardous to operating personnel.

5. CONCLUSIONS

The method is suitable for killing *fish* under controlled conditions.

ARTICLE 7

Chemical and physical killing methods

1. Use of chemicals added to the water

Chemicals used for killing *fish* should kill the *fish* effectively, not merely have an anaesthetic effect. When using such chemicals, the operating personnel should ensure that the solution has the correct concentration, and that sea water is used for marine *fish* species and freshwater for freshwater species.

If a chemical solution is to be used several times, aeration or oxygenation of the solution should be carried out to avoid suffocation.

Fish should be kept in the chemical solution until they are dead. *Fish* that are merely anaesthetised should be killed by another method such as bleeding, decapitation or appropriate mechanical *stunning*.

Suitable chemicals include:

a) Benzocaine hydrochloride can produce a deep anaesthesia when added in an overdose to water. Since the solubility of benzocaine in water is low, it has to be administered from a stock solution of either ethanol (10%) or propylenglycol (5%). A final solution of 100 mg/liter is sufficient to kill *fish*.

b) Iso-eugenol (2-methoxy-4-propenylphenol) (Aqui S) is effective for killing *fish*. The effective dose for killing is 25 ml/1000 liter of water.

c) Metacaine (tricaine metansulfonat, MS 222) has a similar effect as benzocaine. The solubility in water is high. A final solution of 100 mg/liter is sufficient to kill *fish*, but a concentration of ≥ 250mg/liter for 10 minutes following cessation of opercular movements is recommended.

d) Metomidate hydrochloride is effective in anaesthetising fish in aquaria as well as catfish, salmonids, etc. Induction of anaesthesia is rapid (1–2 minutes) and without stress reactions such as elevated heart rate. In salmonids, the recommended dose is 2–6 mg/liter of water. Metomidate may give inadequate anaesthesia of larvae of some fish species such as goldfish and red drum.

Community comment

The possible welfare implications of using Rotenone (e.g. in terms of aversiveness) should be carefully evaluated.

e) Rotenone is effective for killing *fish* and may be used for mass killing of feral *fish* when they are still in natural water courses. The effective dose of active rotenone is 0.025 to 0.15 g/1000 liter depending on *fish* species to be killed. Rotenone is less effective at temperatures below 10ºC and in water with high sediment content. The effect of rotenone is reversible and *fish* may be revived if introduced into oxygenated water without rotenone.

2. Requirements for effective use

a) Sufficient quantities of the chemical need to be added to the water.

b) Should be followed by killing if *fish* are merely anaesthetised.

3. Advantages

a) Large numbers of *fish* may be stunned in one batch.

b) Handling is not required until *fish* are anaesthetised or euthanized.

c) Biosecurity.

4. Disadvantages

a) May need to be followed by killing if *fish* are anaesthetised only.

b) Care is essential in the preparation and provision of treated water, and in the disposal of treated water and contaminated carcasses.

5. Conclusion

The method is suitable for killing large numbers of *fish* in closed compartments.

Article 8

Unacceptable methods, procedures or practises on finfish welfare grounds

The following methods are not acceptable for killing *fish* on welfare grounds:

a) The use of CO_2 alone or in combination with chilled water/crushed ice is not acceptable for the mass table killing of *fish*, due to its aversive effects.

b) Salt or ammonia baths used on eels are not acceptable due to their aversive effects.

c) Asphyxiation is not acceptable as sensation is not lost during the slow induction.

d) Exsanguination is not acceptable for killing conscious *fish*.

ARTICLE 9

Other killing methods

1. Decapitation

a) Introduction

Decapitation, using a sharp device such as a guillotine or knife, may be used for killing *fish* but only following anaesthesia; the method results in death by cerebral ischaemia.

b) Requirements for effective use

The required equipment should be kept in good working order.

Community comment

The welfare implications of using decapitation as a killing method for eels should be carefully evaluated in terms of it being listed in the table of article 10 as specifically being "acceptable if preceded by anaesthesia", although prior anesthesia is not mentioned in this article.

c) Advantages

The technique is effective for the killing of eels when applied properly.

d) Disadvantages

Contamination of the working area due to bleeding and body fluids may present a biosecurity risk. The method is not applicable to other *fish* species than eel.

e) Conclusion

The method is acceptable only for killing eels.

2. Maceration

a) Introduction

Maceration by a mechanical device with rotating blades or projections causes immediate fragmentation and death in newly hatched *fish* and embryonated eggs, as well as fertilised/unfertilised eggs of *fish*. It is a suitable method for the processing of such material. The procedure results in immediate death and a large number of eggs/newly hatched fry can be killed quickly and humanely. For biosecurity reasons, macerated material from infected *fish* should be treated by one of the processing methods given in OIE Guidelines for handling and disposal of carcasses and waste of aquatic animals (in preparation).

Maceration requires specialised equipment which should be kept in good working order. The rate of introducing material into the device should be such that the equipment does not jam.

b) Conclusion

The method is suitable for killing large numbers of eggs/newly hatched fry of *fish*.

4. ARTICLE 10

Table summarising acceptable killing methods for *fish**

Species	Method	Animal welfare concerns / implications	Additional comments
Salmonids, cod (gadids) and flatfish	Anaesthetic overdose using benzocaine, metacaine, iso-eugenol.	Considered to have a low impact on welfare but mode of operation of chemicals in all species is not known.	Applicable to all sizes of *fish*
	Percussive stunning.	Should be properly applied to be humane and effective. Low impact on	Suitable for *fish* handled individually

		welfare.	
	Electrical stunning.	The equipment should be maintained and applied correctly to produce an effective stun and kill. Low impact on welfare. Suitable in salt water.	May be hazardous to personnel. Applicable to all sizes
Tuna	Spiking, coring, Iki-Jime.	When applied properly, the *fish* are killed instantly.	Applicable to all sizes
	Free bullet.	When applied properly, the *fish* are killed instantly.	Applicable to all sizes. Operator safety needs to be addressed.
Cyprinids	Anaesthetic overdose using benzocaine, metacaine, iso-eugenol.	Considered a low impact on welfare but mode of operation of chemicals in all species not known.	Applicable to all sizes
Eels	Decapitation.	Negative impact on welfare. Acceptable if preceded by anaesthesia	
	Electrical stunning.	Eels are resistant to electrical stunning and require high currents for at least 5 minutes to achieve insensibility. Negative impact on welfare.	May be hazardous to personnel.
	Percussive stunning.	Low impact on welfare.	Suitable for *fish* handled individually.

Species	**Method**	**Animal welfare concerns / implications**	**Additional comments**
Ornamentals	Anaesthetic overdose using benzocaine, metacaine, iso-eugenol.	Considered a low impact on welfare but mode of operation of chemicals in all species not known.	Applicable to all sizes.
Other species	Spiking, coring and Iki-jime (tuna).	When applied properly, the *fish* are killed instantly.	
	Percussive stunning.	Should be properly applied to be humane and effective. Low impact on welfare.	Suitable for *fish* handled individually
	Electrical stunning.	The equipment should be maintained and applied correctly to produce an effective stun and kill. Low impact on welfare.	May be hazardous to personnel. Applicable to all sizes.

	Anaesthetic overdose using benzocaine, metacaine, iso-eugenol.	Considered a low impact on welfare but mode of operation of chemicals in all species not known.	Applicable to all sizes
Newly hatched fry/eggs of any *fish* species	Maceration.	Low impact on welfare.	

* The order of description of the methods is not in an order of acceptability from a *fish* welfare point of view.

Note: The table does not represent an exclusive list of acceptable methods.

Article 11

Handling of fish killed for disposal

See Appendix X.X.X. (under preparation) on the Guidelines for the handling and disposal of carcasses and waste of aquatic animals.

COMMISSION WORK PLAN FOR 2006/2007
Aquatic Animal Health Code
• Ongoing review of the list of diseases   • Review emerging diseases
• Revise disease chapter for *Gyrodactylus salaris* with the assistance of *ad hoc* group and other experts
• Prepare text for disease chapters for gaining and regaining freedom for compartments

• Harmonise horizontal chapters with those in the *Terrestrial Code*
  • Zoning (and compartmentalisation)
  • Appendix on aquatic animal health surveillance
  • Model certificates
  • Handling and disposal of carcasses and wastes of aquatic animals

• Draft guidelines on animal health issues related to aquatic animal feed
• Aquatic animal welfare guidelines
• antimicrobial resistance in the field of aquatic animals
Manual of Diagnostic Tests for Aquatic Animals
• Develop general surveillance chapter and guidelines for surveillance for individual diseases with the assistance of *ad hoc* groups and other experts
• Revise Chapter on methods for disinfection of aquaculture establishments
4.1.1.1. Meetings
• OIE Global Conference on Aquatic Animal Health
• Make presentations on the activities of the Aquatic Animals Commission at the Conferences of the OIE Regional Commissions
• Assist in the implementation of recommendations adopted by the OIE Regional Commission for Asia, the Far East and Oceania in 2003, and endorsed by the OIE International Committee of the OIE in 2004
• 1st International Conference of OIE Reference Laboratories and Collaborating Centres
4.2. Other issues
• Consider the report from the *ad hoc* group on amphibian diseases and formulate recommendations on the inclusion of amphibians in the remit of OIE standards
• Update the Commission's web pages
• Consider new candidates for OIE Reference Laboratories for listed diseases
• Coordination of a publication on "Changing trends in managing aquatic animal disease emergencies" under the Rev. Sci. Tech. series