



# **QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)**

**January-March 2009**

Published by the

**Network of Aquaculture Centres  
in Asia-Pacific**

Suraswadi Building, Department of Fisheries  
Kasetsart University Campus, Ladyao, Jatujak  
Bangkok 10900, Thailand

**Food and Agriculture  
Organization of the United Nations**

Viale delle Terme di Caracalla  
Rome 00100  
Italy

July 2009

Network of Aquaculture Centres in Asia-Pacific and Food and Agriculture Organization of the United Nations. July 2009. *Quarterly Aquatic Animal Disease Report (Asia and Pacific Region)*, 2009/1, January-March 2009. NACA: Bangkok, Thailand.

# Contents

---

Foreword	v
<b>Reports Received by the NACA Secretariat</b>	
Australia	2
Hong Kong	6
India	8
Indonesia	10
IR Iran	13
Lao PDR	15
Malaysia	17
Myanmar	20
Nepal	22
Philippines	24
Republic of Korea	27
Singapore	29
Sri Lanka	31
Thailand	33
Vietnam	36
List of Diseases under the Asia-Pacific Quarterly Aquatic Animal Disease Report	38
Recent related publications	39
List of National Coordinators	41
New Instructions on how to fill in the <i>Quarterly Aquatic Animal Disease Report</i>	44



## Foreword

---

### Emerging Amphibian Diseases in the Region

This is the first time that diseases of amphibians have been included in the OIE Aquatic Code. Two diseases of amphibians have been added – Infection with **ranavirus** and Infection with *Batrachochytrium dendrobatidis*. In view of this it is important to get some insights into emerging amphibian diseases in the region, so that countries can be prepared to build capacity and implement surveillance programs for amphibian diseases. The following section taken from the 7<sup>th</sup> Asia Regional aquatic animal health advisory group meeting from the presentation of Dr Somkiat Kanchanakhan, though specific to Thailand, provides some information about amphibian diseases.

Intensive frog culture farms have developed in Thailand since the early 1990's. Many diseases caused by bacterial infection have been reported. However, till recently, there has been no report of viral diseases in frog in Thailand or in other countries of Southeast Asia. Previously, viruses have been reported from diseased frogs and healthy frogs from many parts of the world (e.g. United Kingdom, United State, Canada, Croatia, and Venezuela). Three different families of frog viruses have been isolated, they are *Iridoviridae*, *Herpesviridae* and *Adenoviridae*. Most frog viruses are usually found to be associated with tumor diseases and the iridovirus is more often isolated. Iridoviruses have a wide host range including insects, mollusks, amphibians, reptiles and mammals.

A new frog disease occurred in frog culture farms located in Central Thailand since early 1998. The disease affected 20-100% of the frog population in affected farms. Diseased adult frogs exhibited ulcerative lesions on the dorsal part of the body and legs with moderate mortality (20-50%). Some frogs examined had red lip, ulcerated mouth and rostrum. Histopathological changes included cutaneous ulceration and systemic inflammation with exuberant hematopoiesis. No bacteria could be isolated from kidneys, spleen and livers of frogs with the early stage of the disease. The diseased tadpoles and small frogs appeared weak and had high mortality (50-100%) with systemic inflammation. A total of 70 virus isolates were isolated from 107 diseased samples collected from 8 Provinces using the *Epithelioma papulosum cyprini* (EPC) cell line at 25°C. All viruses caused a similar round lytic plaque cytopathic effect. One virus isolate AV9803 was later characterized and identified as a viral member of the family *Iridoviridae*. DNA analysis showed that the frog iridovirus was similar to ranavirus type strain FV3. This virus strain was temporally designated "*Rana trigrina ranavirus* (RTRV)" (previously named "tiger frog iridovirus").

Ranavirus also appear to be causing disease problems in fish. A high mortality disease of cultured marble goby, *Oxyeleotris marmoratus* occurred in Nakornpathom province, Central Thailand in March 2000. The diseased fish exhibited minor ulcer lesions on the body and around mouth area. No external parasites and blood parasites were observed. No bacteria could be isolated from internal organs, liver, kidney and spleen. Three diseased fish were used for virological investigation. Viruses could be isolated from these 3 fish specimens using EPC cell line. The new virus isolate was classified as a virus member of the Family *Iridoviridae*. This virus was named as *Oxyeleotris marmoratus ranavirus* or OMRV. Genomic DNA restriction

profiles of ranaviruses from frog and marblegoby were similar after cleaved by BamHI and XbaI. DNA sequence of ranaviruses isolated from diseased goldfish, *Carrasius aratus*, marble goby (*Oxyeleotis marmoratus*) and culture frog (*Rana tigrina*) in Thailand have been compared. The findings indicate that the ranaviruses found in diseased gold fish, marble goby and culture frog in Thailand are most likely the same *Ranavirus* of the Iridoviridae.

In summary; Ranaviruses have been reported in frog, goldfish and marble goby in Thailand (1998-2000). Ranavirus have also been found in diseased dwarf gourami in Southeast Asia and reported in diseased frog in Guangdong and Hainan and soft-shelled turtle in Shenzhen, China. The findings of ranaviruses in frog farms in Thailand seems to correlate with the high numbers of frog culture farms. Since 2002, the numbers of farms culturing frogs has reduced due to the diseases and low profit. New cases of frog diseases associated with ranaviruses have been getting less and less since year 2003 in Thailand. Finding of ranaviruses in Thailand (1998-2000) coincided with the recognition that the wild frog population is declining in Thailand especially in the National Zoo in Bangkok.

Considering the strong possibility of introduction of viruses (e.g. ranavirus) through trade in ornamental frogs, it is very important that countries involved in import/export of ornamental frogs, should consider strengthening their disease surveillance, and health certification work on amphibians. In view of the possibility of transfer of pathogens especially viruses between fish (marbel goby), amphibians (frog) and reptiles (soft turtle), it is necessary that studies be undertaken to establish the pathways of such transfers (if any) amongst unrelated species inhabiting the aquatic environment. Now that two amphibian diseases have been listed by the OIE in the 2008 Aquatic Code, countries involved in frog culture and trade must now seek to develop capacity for amphibian diseases and implement surveillance programs

# **Reports Received by the NACA Secretariat**

Country: **AUSTRALIA**Period: **January-March 2009**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	-(2008)	-(2008)	-(2008)		1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-(2008)	-(2008)	+	II	2
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	+	+	-(2009)	III	3
10. Enteric septicaemia of catfish	-(2008)	-(2008)	-(2008)		4
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	?	?	+		5
3. Abalone viral mortality	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease	0000	0000	0000		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	-(2008)	-(2008)	-(2008)		6
5. Infectious hypodermal and haematopoietic necrosis	-(2008)	-(2008)	-(2008)		7
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		8
9. Necrotising hepatopancreatitis	***	***	***		
10. Hepatopancreatic parvo virus disease	***	***	***		
11. Mourilyan disease	***	***	***		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	***	***	***		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	?	?	?		9
2. Infection with <i>Batrachochytrium dendrobatidis</i>	+	+	+	III	10



<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1. Abalone viral ganglioneuritis	+	+	+	II	11
2.					
<b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b> <b>LISTED BY THE OIE</b> <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis ( <i>Gyrodactylus salaris</i> ). <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i> ; <i>Marteilia refringens</i> ; <i>Perkinsus marinus</i> ; <i>Xenohaliotis californiensis</i> . <b>Crustaceans:</b> Crayfish plague ( <i>Aphanomyces astaci</i> ). <b>NOT LISTED BY THE OIE</b> <b>Finfish:</b> Channel catfish virus disease					
<b>a/ Please use the following symbols:</b>					
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones		
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available		
?	Suspected by reporting officer but presence not confirmed	0000	Never reported		
		-	Not reported (but disease is known to occur)		
		(year)	Year of last occurrence		
<b>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</b>					

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	<p>Epizootic haematopoietic necrosis was not reported this period despite passive surveillance, but is known to occur annually in the Australian Capital Territory (recent testing has confirmed presence in 4<sup>th</sup> quarter 2008). Not reported this period despite passive surveillance, but known to have occurred previously in Victoria (last year reported 2004), New South Wales (last year reported 2003) and South Australia (last year reported 1992). Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in the Northern Territory, Queensland or Western Australia.</p>
2	<p><b>Epizootic Ulcerative Syndrome</b></p> <ol style="list-style-type: none"> <li><b>Reported in New South Wales</b> in March 2009. Passive surveillance;</li> <li><b>In</b> –farmed Murray cod (<i>Maccullochella peelii peelii</i>) fingerlings;</li> <li><b>Clinical signs</b>- deep ulcerative lesions and mortality;</li> <li><b>Pathogen</b>- <i>Aphanomyces invadans</i>;</li> <li><b>Mortality rate</b>- 60%;</li> <li><b>Economic loss</b>- 6000/10000;</li> <li><b>Geographic extent</b>-single batch of newly purchased fingerlings in a single commercial grow-out facility;</li> <li><b>Containment measures</b>- not applicable, endemic;</li> <li><b>Laboratory confirmation</b>- diagnosed by presence of hyphae under light microscopy and histology consistent with mycotic granulomas typical of EUS;</li> <li><b>Publications</b>- unpublished.</li> </ol> <p>Epizootic ulcerative syndrome was not reported during this period despite targeted surveillance, but is known to have occurred previously in South Australia (last year reported 2008). Not reported during this period despite passive surveillance, but is known to have occurred previously in Queensland (last year reported 2008), Northern Territory (last year reported 2006), Western Australia where it is considered to be endemic (last year reported 2005) and Victoria (last year reported 2002). Passive surveillance and never reported in Tasmania. No information available in the Australian Capital Territory.</p>

<p>3</p>	<p><b>Viral Encephalopathy and Retinopathy</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in Queensland</b> in a) January and b) February 2009. Targeted surveillance;</li> <li>2. <b>In</b> – a) 76 day old flowery cod (<i>Epinephelus fuscoguttatus</i>), b) adult triggerfish (<i>Balistoides sp.</i>);</li> <li>3. <b>Clinical signs</b>- a) dark body colour and lethargy, b) mortality;</li> <li>4. <b>Pathogen</b>- Betanodavirus;</li> <li>5. <b>Mortality rate</b>- a) 0.001%, b) single fish;</li> <li>6. <b>Economic loss</b>- a) not reported, b) not applicable;</li> <li>7. <b>Geographic extent</b>- a) 8 tanks in a single facility, b) single aquarium;</li> <li>8. <b>Containment measures</b>- none, endemic;</li> <li>9. <b>Laboratory confirmation</b>- diagnosed by histopathology and IHCT;</li> <li>10. <b>Publications</b>- unpublished.</li> </ol> <p>Not reported this period despite targeted surveillance from South Australia (last year reported 2004). Not reported this quarter despite passive surveillance from Northern Territory and New South Wales (last year reported 2008), Western Australia (last year reported 2005) and Tasmania (last year reported 2000). Never reported from Victoria despite passive surveillance. No information available in the Australian Capital Territory.</p>
<p>4</p>	<p>Enteric septicaemia of catfish was not reported this quarter despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2008) and in Tasmania in zebrafish (<i>Brachydanio rerio</i>) in PC2 containment (last year reported 2001). Never reported in New South Wales, Northern Territory, South Australia and Victoria despite passive surveillance. No information available in the Australian Capital Territory and Western Australia (susceptible species not present).</p>
<p>5</p>	<p><b>Infection with <i>Perkinsus olseni</i></b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in South Australia</b> in March 2009. Targeted surveillance;</li> <li>2. <b>In</b> - wild (but not cultured) blacklip abalone (<i>Haliotis rubra</i>) and greenlip abalone (<i>Haliotis laevigata</i>);</li> <li>3. <b>Clinical signs</b>- not reported;</li> <li>4. <b>Pathogen</b>- <i>Perkinsus olseni</i>;</li> <li>5. <b>Mortality rate</b>- minor;</li> <li>6. <b>Economic loss</b>- not reported;</li> <li>7. <b>Geographic extent</b>- small area near Neptune Island;</li> <li>8. <b>Containment measures</b>- none;</li> <li>9. <b>Laboratory confirmation</b>- diagnosed by histopathology and PCR;</li> <li>10. <b>Publications</b>- unpublished.</li> </ol> <p>Infection with <i>Perkinsus olseni</i> was not reported this quarter from Western Australia despite targeted surveillance (last year reported 2003). While <i>Perkinsus</i> has been isolated previously by culture off the gills of a clinically normal abalone in 2003, clinical infection from <i>Perkinsus</i> has never been reported from Western Australia. Not reported this period despite passive surveillance from New South Wales (last year reported 2005). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Victoria. No information available in the Australian Capital Territory (no marine water responsibility).</p>
<p>6</p>	<p>Spherical baculovirus was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2008), New South Wales and Western Australia (last year reported 2002). Never reported despite passive surveillance in the Northern Territory, South Australia and Victoria. No information available in the Australian Capital Territory (no marine water responsibility) and Tasmania (susceptible species not present).</p>
<p>7</p>	<p>Infectious Hypodermal and Haematopoietic Necrosis virus was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2008) and Northern Territory (last year reported 2003). Passive surveillance and never reported in New South Wales, South Australia, Victoria and Western Australia. No information available in Australian Capital Territory (no marine responsibility) and Tasmania (susceptible species not present).</p>

8	White tail disease was not reported this period from Queensland despite passive surveillance (last year reported 2008). Results of testing of samples collected in the 4 <sup>th</sup> quarter 2008 indicate that WTD is endemic in the Carpentaria region of north Queensland. Passive surveillance and never reported from New South Wales and South Australia. No information available in the Australian Capital Territory (no marine water responsibility), Northern Territory, Tasmania (susceptible species not present), Victoria and Western Australia.
9	Infection with ranavirus is suspected in some parts of Australia but presence not confirmed this period.
10	<p><b>Infection with <i>Bachtracochytrium dendrobatidis</i></b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in Tasmania</b> in January, February and March 2009. Targeted surveillance;</li> <li>2. <b>In</b> – wide range of amphibian species;</li> <li>3. <b>Clinical signs</b>- none reported;</li> <li>4. <b>Pathogen</b>- <i>Bachtracochytrium dendrobatidis</i>;</li> <li>5. <b>Mortality rate</b>- unknown;</li> <li>6. <b>Economic loss</b>- n/a;</li> <li>7. <b>Geographic extent</b>- under investigation;</li> <li>8. <b>Containment measures</b>- none;</li> <li>9. <b>Laboratory confirmation</b>- n/a;</li> <li>10. <b>Publications</b>- unpublished.</li> </ol> <p>Infection with <i>Bachtracochytrium dendrobatidis</i> was not reported this period despite targeted surveillance but is known to have occurred previously in Western Australia. Suspected in other parts of Australia but presence not confirmed this period.</p>
11	Abalone viral ganglioneuritis was reported this period in wild (but not farmed) abalone in the south west of Victoria. Not reported this period despite targeted surveillance but is known to have occurred previously in Tasmania (last year reported 2008). Passive surveillance and never reported in Queensland, New South Wales, South Australia and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility) and Northern Territory.

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **HONG KONG**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	-	-	-	III	
7. Koi herpesvirus disease	-	-	-	III	
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	-	-	III	
10. Enteric septicaemia of catfish	0000	0000	0000		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	-	III	
3. Yellowhead disease	0000	0000	0000		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	0000	0000	0000		
9. Necrotising hepatopancreatitis	0000	0000	0000		
10. Hepatopancreatic parvo virus disease	0000	0000	0000		
11. Mourilyan disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	0000	0000	0000		
13. Milky lobster disease	0000	0000	0000		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td style="padding-right: 20px;">+</td> <td style="padding-right: 20px;">Disease reported or known to be present</td> <td style="padding-right: 20px;">+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	
2	
3	
4	

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **INDIA**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-	-	-		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10. Enteric septicaemia of catfish	0000	0000	0000		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+()	+()	+()	1	1
3. Yellowhead disease	***	***	***		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	***	***	***		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	-	-	-		
9. Necrotising hepatopancreatitis	0000	0000	0000		
10. Hepatopancreatic parvo virus disease	0000	0000	0000		
11. Mourilyan disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	0000	0000	0000		
13. Milky lobster disease	0000	0000	0000		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td>+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Limited occurrence was reported from some culture ponds in the area of Nellore district in Andhra Pradesh. The affected species is <i>Penaeus monodon</i> .
2	
3	
4	

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: INDONESIAPeriod: January-March 2009

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	-	-	+	III	1
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000	III	2
9. Viral encephalopathy and retinopathy	0000	+	0000	III	3
10. Enteric septicaemia of catfish	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	***	***	***		
2. Infection with <i>Perkinsus olseni</i>	***	***	***		
3. Abalone viral mortality	***	***	***		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	+	+	+	III	4
2. White spot disease	+	+	+	III	5
3. Yellowhead disease	***	***	***		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	***	***	***		
5. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	6
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	***	***	***		
7. Infectious myonecrosis	+	+	+	III	7
8. White tail disease (MrNV)	***	***	***		
9. Necrotising hepatopancreatitis					
10. Hepatopancreatic parvo virus disease					
11. Mourilyan disease					
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	***	***	***		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus					
2. Infection with <i>Batrachochytrium dendrobatidis</i>					



ANY OTHER DISEASES OF IMPORTANCE					
1.					
<b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b> <b>LISTED BY THE OIE</b> <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis ( <i>Gyrodactylus salaris</i> ). <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i> ; <i>Marteilia refringens</i> ; <i>Perkinsus marinus</i> ; <i>Xenohaliotis californiensis</i> . <b>Crustaceans:</b> Crayfish plague ( <i>Aphanomyces astaci</i> ). <b>NOT LISTED BY THE OIE</b> <b>Finfish:</b> Channel catfish virus disease					
a/ Please use the following symbols:					
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones		
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available		
?	Suspected by reporting officer but presence not confirmed	0000	Never reported		
		-	Not reported (but disease is known to occur)		
		(year)	Year of last occurrence		
b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases					

### 1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	Comment
1	1) Disease occurs at cage and pond culture; Fish infected are fry (7 – 8 cm) and consumption size. 2) Species affected : <i>Cyprinus carpio</i> 3) Clinical sign : irritation , hemorrhage, gill damage 4) Pathogen : Koi herpesvirus 5) Mortality rate : low to high 6) Economic loss : - 7) Names of infected areas : West Java (Sumedang District, Cirata Dam, East Jakarta District ); South Kalimantan (Banjar District); Jambi (Kerinci Lake); West Kalimantan (Pontianak District) 8) Preventive/control measures : Adding immunostimulan (vitamin C , Cromium yeast) on fish food 9) Samples have been analyzed at National Laboratory by PCR 10) Not Published
2	1) Disease occur at marine cage and fish infected is consumption size; 2) Species affected : Polkadot grouper ( <i>Cromileptes altivelis</i> ), and Snubnose pompano ( <i>Trachinotus blochii Lacepede</i> ) 3) Clinical sign : abnormally swim at surface, fin damage; 4) Pathogen : Grouper iridoviral disease; 5) Mortality rate : low (5%) 6) Economic loss : - 7) Names of infected areas : Lampung ( Hurun Bay ) 8) Preventive/control measures: 9) Samples have been analyzed at National Laboratory 10) Not Published
3	1) Disease occur sat marine cage culture and fish infected is fry size 2) Species affected : Polkadot grouper ( <i>Cromileptes altivelis</i> ); 3) Clinical sign : abnormally swim at surface, fin damage 4) Pathogen : Viral Nervous Necrosis Virus, All samples have been alanlyzed by PCR 5) Mortality rate : low to high (20% - 70%) 6) Economic loss : - 7) Names of infected areas : Lampung Province (Puhawang Island, Tanjung Putus, Ringgung and Hurun Bay) and East Java Province (District of Situbondo, Banyuwangi), Bali Porovince (District of Buleleng) 8) Preventive/Control measures: using of healthy seed, water quality management 9) Samples have been analyzed at National Laboratory 10) Not Published

4	<ol style="list-style-type: none"> <li>1) Disease occur at pondculture (brakishwater pond) with intensive and semi intensive technology;</li> <li>2) Species affected :White shrimp (<i>Liptopenaeus vanamei</i>)</li> <li>3) Clinical signs: necrosis at uropoda, melanization at cuticula, low appetite</li> <li>4) Pathogen : Taura Syndrome Virus</li> <li>5) Economic loss : -</li> <li>6) Mortality rate : low (&lt; 30%)</li> <li>7) Name of infected area : Situbondo district (East Java Province);</li> <li>8) Preventive/control measures: using the healthy seed (screening by PCR), avoid the seed from stressor; aplication of Good Aquaculture Practices</li> <li>9) Samples have been analyzed at National Laboratory</li> <li>10) Not published</li> </ol>
5	<ol style="list-style-type: none"> <li>1) Disease occur at pondculture (brakishwater pond) with intensive and semi intensive technology</li> <li>2) Species affected: White shrimp (<i>Liptopenaeus vannamei</i>)</li> <li>3) Clinical sign: white spot on carapace, shrimp becoming weak and swimming on the surface, low appetite</li> <li>4) Pathogen : White Spot Syndrome Virus</li> <li>5) Mortality rate : high (&gt; 70%)</li> <li>6) Economis loss : high</li> <li>7) Infected area: East Java Province covered District of Banyuwangi, Pasuruan, Gresik, Lamongan and Tuban (</li> <li>8) Preventive/Control measurement : using the healthy seed or SPF (screening by PCR), avoid the seed from stressor; aplication of Good Aquaculture Practices</li> <li>9) Samples have been analyzed at National Laboratory</li> <li>10) Not published</li> </ol>
6	<ol style="list-style-type: none"> <li>1) The positive samples were found in Post Larvae of <i>Liptopenaeus vannamei</i></li> <li>2) Species affected : White shrimp (<i>Liptopenaeus vannamei</i>)</li> <li>3) Clinical sign : Low and abnormal growth (very small size/dwarf)</li> <li>4) Pathogen : Infectious Hypodermal and Haematophatic Necrosis Virus</li> <li>5) Mortality rate : low (&lt;30%)</li> <li>6) Economic loss : not too much, because shrimp can persist until harvest</li> <li>7) Preventive / control measurement : using the healthy seed or SPF (screening by PCR), avoid the seed from stressor; aplication of Good Aquaculture Practices</li> <li>8) Name of infected area : Banyuwangi District (East Java Provine )</li> <li>9) Samples have been analyzed at National Laboratory</li> <li>10) Not published</li> </ol>
7	<ol style="list-style-type: none"> <li>1) The sample were taken by Center of Brakishwater Aquaculture Development Situbondo</li> <li>2) Species affected : White shrimp (<i>Liptopenaeus vanamei</i>)</li> <li>3) Clinical sign : low appetite, necrosa at muscle (abdomen and tail) show whitish at firstly symptopm, for some cases the color become redish;</li> <li>4) Pathogen : Infectious Myonecrosis Virus</li> <li>5) Mortality rate : high (&gt;70%)</li> <li>6) Economic loss : high</li> <li>7) Prevetive/ Controlmeasures taken : water treatment with probiotics , early harvest .</li> <li>8) Infected area : Bali Province (District of Jembrana), East Java Province covered District of Situbondo, Banyuwangi, Blitar, and Malang</li> <li>9) Samples have been analyzed at National Laboratory</li> <li>10) Not published</li> </ol>

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **IR IRAN**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	-	-	-		
3. Spring viraemia of carp	-	-	-		
4. Viral haemorrhagic septicaemia	-	-	-		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10. Enteric septicaemia of catfish	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	***	***	***		
2. Infection with <i>Perkinsus olseni</i>	***	***	***		
3. Abalone viral mortality	***	***	***		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	-		
3. Yellowhead disease	0000	0000	0000		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
9. Necrotising hepatopancreatitis	***	***	***		
10. Hepatopancreatic parvo virus disease	***	***	***		
11. Mourilyan disease	***	***	***		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	***	***	***		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	***	***	***		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	***	***	***		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td style="padding-right: 20px;">+</td> <td style="padding-right: 20px;">Disease reported or known to be present</td> <td style="padding-right: 20px;">+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	
2	
3	
4	

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: LAO PDRPeriod: January-March 2009

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
	January	February	March		
<b>DISEASES PREVALENT IN THE REGION</b>					
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	***	***	***		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10. Enteric septicaemia of catfish	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>					
2. Infection with <i>Perkinsus olseni</i>					
3. Abalone viral mortality					
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>					
5. Acute viral necrosis (in scallops)					
6. Akoya oyster disease					
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome					
2. White spot disease					
3. Yellowhead disease					
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)					
5. Infectious hypodermal and haematopoietic necrosis					
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )					
7. Infectious myonecrosis					
8. White tail disease (MrNV)					
9. Necrotising hepatopancreatitis					
10. Hepatopancreatic parvo virus disease					
11. Mourilyan disease					
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome					
13. Milky lobster disease					
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	***	***	***		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	***	***	***		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td>+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	
2	
3	
4	

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **MALAYSIA**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome					
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	(2008)	(2008)	(2008)	I,III	1
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	+	+	+	I,II,III	2
9. Viral encephalopathy and retinopathy	+	-	-	I,II,III	3
10. Enteric septicaemia of catfish	0000	0000	0000		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	-	-	-	I,III	4
2. White spot disease	+	-	-	I,III	5
3. Yellowhead disease	-	-	-	I,III	6
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	+	-	-	I,III	7
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	-	-	-		
9. Necrotising hepatopancreatitis	0000	0000	0000		
10. Hepatopancreatic parvo virus disease	0000	0000	0000		
11. Mourilyan disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	?	?	?		
13. Milky lobster disease	0000	0000	0000		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000		

ANY OTHER DISEASES OF IMPORTANCE																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td>+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	<p><b>Koi herpesvirus disease</b>                      Active surveillance of KHV in Perak ended in December 2008. Passive surveillance on KHV during period Jan-March 2009 revealed no positive cases found.</p>
2	<p><b>Grouper iridoviral diseases</b>                      1. The disease was detected in the newly introduced tiger grouper (<i>Epinephelus fuscoguttatus</i>), size between 6.52-9.0 kg. The fish were procured from Kota Kinabalu, Sabah on September, 2009 for broodstock purposes. The clinical signs observed were bloated and hemorrhages of swim bladder, pale and hardened liver. Morality begins on 14 December 2008 and slowly increased to 100%. Economic loss estimated was more than RM 50,000 for 40 pieces of brood stock. The infected areas were only at MAFPREC hatchery. Samples were sent to NaFish laboratory in Penang for confirmation. All the infected fish were disposed by burying.</p> <p>2. Reported in Langkawi, Kedah</p> <ul style="list-style-type: none"> <li>• Species affected: <i>E.fuscoguttatus</i> and <i>E.lanceolatus</i></li> <li>• Disease Characteristic: dark body coloration, body ulceration, red eye, bloated stomach</li> <li>• Pathogen: VNN</li> <li>• Mortality rate: <i>E.fuscoguttatus</i> (0.4%) and <i>E.lanceolatus</i> (1.3%)</li> <li>• Death toll: <i>E.fuscoguttatus</i> (RM86,400) and <i>E.lanceolatus</i> (RM45,000)</li> <li>• Size of infected area: unknown</li> <li>• Preventive/control measures taken: farmer were advised to cull all the fish</li> <li>• Laboratory confirmation: PCR by National Fish Health Research Centre, Penang</li> <li>• Publications: Nil</li> </ul>



3	<p><b>Viral encephalopathy and retinopathy</b> Reported in Langkawi, Kedah</p> <ul style="list-style-type: none"> <li>• Species affected: E.fuscoguttatus and E.lanceolatus</li> <li>• Disease Characteristic: dark body coloration, body ulceration, red eye, bloated stomach</li> <li>• Pathogen: VNN</li> <li>• Mortality rate: E.fuscoguttatus (0.4%) and E.lanceolatus (1.3%)</li> <li>• Death toll: E.fuscoguttatus (RM86,400) and E.lanceolatus (RM45,000)</li> <li>• Size of infected area: unknown</li> <li>• Preventive/control measures taken: farmer were advised to cull all the fish</li> <li>• Laboratory confirmation: PCR by National Fish Health Research Centre, Penang</li> <li>• Publications: Nil</li> </ul>
4	<p><b>Taura Syndrome Virus</b></p> <p>1. No case has been reported despite active surveillance on the tiger shrimp, Penaeus monodon and local white shrimp, Penaeus merguensis broodstocks in the SPF program at Brackishwater Aquaculture Research Centre (BARC), Johor</p> <p>2. TSV were not reported in East Malaysia during this period despite passive and active surveillance on paenaied shrimp done by the Department of Fisheries, Malaysia</p>
5	<p><b>White spot syndrome virus</b></p> <p>1. No case has been reported despite active surveillance on the tiger shrimp, Penaeus monodon and local white shrimp, Penaeus merguensis broodstocks in the SPF program at Brackishwater Aquaculture Research Centre (BARC), Johor</p> <p>2, Reported in Penang</p> <ul style="list-style-type: none"> <li>• Species affected: broodstock of tiger prawn (P.monodon)</li> <li>• Disease Characteristic: red discoloration on the body, black patches and erosion on carapace, antennae and appendage</li> <li>• Pathogen: WSV</li> <li>• Mortality rate: 80%</li> <li>• Death toll: Unknown</li> <li>• Size of infected area: one tank</li> <li>• Preventive/control measures taken: farmer was advised not to use the remainder of tiger prawn as broodstock</li> <li>• Laboratory confirmation: PCR by IQ2000 detection kit, confirmed in January</li> <li>• Publications: Presented as oral paper during 1<sup>st</sup> Malaysian Association Veterinary Pathology, 16-17 May 2009, Kuching, Sarawak</li> </ul> <p>3. WSSV were not reported in East Malaysia during this period despite passive and active surveillance on paenaied shrimp done by the Department of Fisheries, Malaysia</p>
6	<p><b>Yellow head disease</b></p> <p>YHV was not reported during this period in East Malaysia despite passive and active surveillance done by the Department of Fisheries, Malaysia</p>
7	<p><b>IHHNV</b></p> <p>1. No case has been reported despite active surveillance on the tiger shrimp, Penaeus monodon and local white shrimp, Penaeus merguensis broodstocks in the SPF program at Brackishwater Aquaculture Research Centre (BARC), Johor</p> <p>2. IHHNV was not reported in East Malaysia during this period despite passive and active surveillance on paenaied shrimp done by the Department of Fisheries, Malaysia</p> <p>3. IHHNV was detected in wildstock of giant freshwater prawn M.rosenbergii during active surveillance in Perak. Laboratory confirmation was done using recommended PCR primers by OIE. Further sampling and examination will be carried out further to confirm the true status</p>

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **MYANMAR**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome					
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	***	***	***		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10. Enteric septicaemia of catfish	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>					
2. Infection with <i>Perkinsus olseni</i>					
3. Abalone viral mortality					
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>					
5. Acute viral necrosis (in scallops)					
6. Akoya oyster disease					
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	+()	-	-	III	1
2. White spot disease	+()	-	-	III	2
3. Yellowhead disease	-	-	-	III	
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	***	***	***		
5. Infectious hypodermal and haematopoietic necrosis	+()	+()	-	III	3
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	***	***	***		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
9. Necrotising hepatopancreatitis	***	***	***		
10. Hepatopancreatic parvo virus disease	***	***	***		
11. Mourilyan disease	***	***	***		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	***	***	***		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus					
2. Infection with <i>Batrachochytrium dendrobatidis</i>					

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td>+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	A total of 33 samples of P.monodon have been tested at PCR Lab of Department of Fisheries (DOF) of which 3 samples (9.09%) were recorded as TSV positive
2	A total of 33 samples of P.monodon have been tested at PCR Lab of Department of Fisheries (DOF) of which 6 samples (18.18%) were recorded as WSSV positive
3	A total of 33 samples of P.monodon have been tested at PCR Lab of Department of Fisheries (DOF) of which 6 samples (18.18%) were recorded as IHNV positive

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **NEPAL**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
	January	February	March		
<b>DISEASES PREVALENT IN THE REGION</b>					
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome	-	-	-		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	***	***	***		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10. Enteric septicaemia of catfish	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease	0000	0000	0000		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	0000	0000	0000		
9. Necrotising hepatopancreatitis	0000	0000	0000		
10. Hepatopancreatic parvo virus disease	0000	0000	0000		
11. Mourilyan disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	0000	0000	0000		
13. Milky lobster disease	0000	0000	0000		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000		

ANY OTHER DISEASES OF IMPORTANCE																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td>+()</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+()	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+()	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	
2	
3	
4	

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **PHILIPPINES**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-	-	-		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	0000	0000	0000	III	1
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-	-	+	III	2
9. Viral encephalopathy and retinopathy	-	-	-	III	3
10. Enteric septicaemia of catfish	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000		
3. Abalone viral mortality	***	***	***		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000	III	4
2. White spot disease	+	-	-	III	5
3. Yellowhead disease	-	-	-	III	6
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	-	-	-		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000	III	7
8. White tail disease (MrNV)	***	***	***		
9. Necrotising hepatopancreatitis	0000	0000	0000		
10. Hepatopancreatic parvo virus disease	-	-	-		
11. Mourilyan disease	***	***	***		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	***	***	***		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>	***	***	***		
1. Infection with Ranavirus	***	***	***		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	***	***	***		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																							
1.																							
2.																							
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																							
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td>+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>				+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																				
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																				
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																				
		-	Not reported (but disease is known to occur)																				
		(year)	Year of last occurrence																				
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																							

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Gill samples from thirteen (13) koi carp ( <i>Cyprinus carpio</i> ) collected from koi shops in Quezon City and koi farms in Pandi, Bulacan and Lipa, Batangas were analyzed using PCR test and showed negative results for KHV. Examinations/tests were conducted by the BFAR Fish Health Laboratory.
2	Fourteen (14) grouper ( <i>Epinephelus spp.</i> ) gathered from Merida, Leyte and the municipalities of Basey, Tarangnan and Guian in Samar were analyzed by PCR test. Out of the fourteen (14) samples, one (1) grouper sample from Tarangnan, Samar showed a positive result for Grouper Iridovirus. Examinations/tests were conducted by the BFAR Fish Health Laboratory.
3	All twenty-six (26) samples (7 milkfish, 5 siganids and 14 grouper) collected from Merida, Leyte and the municipalities of Basey, Tarangnan and Guian in Samar showed negative results for VER using PCR test. Examinations/tests were conducted by the BFAR Fish Health Laboratory.
4	Twenty-three (23) samples of <i>P. vannamei</i> of different stages (nauplii, fry, juvenile, post larval and adult) from Dagupan City (Pangasinan), Antipolo City, Zambales, Quezon Province and Tacloban City were examined by PCR test and showed negative results for TSV. Examination/tests were conducted by the BFAR Fish Health Laboratory.
5	Out of forty-six (46) samples of <i>P. vannamei</i> of different stages (nauplii, juvenile, post larval and adult); and <i>P. monodon</i> (juvenile, fry, post larval and adult) collected from Dagupan City (Pangasinan), Butuan City, Antipolo City, Quezon Province, Zambales, Leyte, Mindoro and Batangas, one (1) sample showed a positive result for White spot disease through PCR test. Examinations/tests were conducted by the BFAR Fish Health Laboratory.
6	Seventeen (17) samples of <i>P. vannamei</i> of different stages (nauplii, post larval, juvenile and adult) collected from Dagupan City (Pangasinan), Antipolo City, Zambales and Quezon Province were analyzed and all showed negative results for Yellowhead disease using PCR test. Examinations/tests were conducted by the BFAR Fish Health Laboratory.

7	There were eighteen (18) samples of <i>P.vannamei</i> of different stages (nauplii, juvenile, post larval and adult) taken from Dagupan City (Pangasinan), Antipolo City, Zambales and Quezon Province and all showed negative results for Infectious myonecrosis through PCR test. Examinations/tests were conducted by the BFAR Fish Health Laboratory.
---	---

**2. New aquatic animal health regulations introduced within past six months (with effective date):**



Country: **REPUBLIC OF KOREA**Period: **January-March 2009**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	(2008)	+	+	III	1
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease					
7. Koi herpesvirus disease					
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	?	?	?		
10. Enteric septicaemia of catfish	0000	0000	0000		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	(2008)	(2008)	(2008)		
3. Yellowhead disease	0000	0000	0000		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	0000	0000	0000		
9. Necrotising hepatopancreatitis	0000	0000	0000		
10. Hepatopancreatic parvo virus disease	0000	0000	0000		
11. Mourilyan disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	0000	0000	0000		
13. Milky lobster disease	0000	0000	0000		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td style="padding-right: 20px;">+</td> <td style="padding-right: 20px;">Disease reported or known to be present</td> <td style="padding-right: 20px;">+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Viral haemorrhagic septicaemia was detected in flounder ( <i>Paralichthys Olivaecus</i> ) in Goseong
2	
3	
4	

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **SINGAPORE**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	(2007)	(2007)	(2007)		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-	-	-		
9. Viral encephalopathy and retinopathy	-	-	-		
10. Enteric septicaemia of catfish	0000	0000	0000		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	***	***	***		
2. Infection with <i>Perkinsus olseni</i>	***	***	***		
3. Abalone viral mortality	***	***	***		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	***	***	***		
2. White spot disease	-	-	-		
3. Yellowhead disease	***	***	***		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	***	***	***		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	***	***	***		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
9. Necrotising hepatopancreatitis	***	***	***		
10. Hepatopancreatic parvo virus disease	***	***	***		
11. Mourilyan disease	***	***	***		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	***	***	***		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	***	***	***		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	***	***	***		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1. Mullet systemic iridoviral disease	(2008)	(2008)	(2008)																						
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td style="padding-right: 20px;">+</td> <td style="padding-right: 20px;">Disease reported or known to be present</td> <td style="padding-right: 20px;">+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	
2	
3	
4	

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **SRI LANKA**

 Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	?	?	?		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-	-	-		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	?	?	?		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10. Enteric septicaemia of catfish	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	***	***	***		
2. Infection with <i>Perkinsus olseni</i>	***	***	***		
3. Abalone viral mortality	***	***	***		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilia chelonae</i>	***	***	***	***	
5. Acute viral necrosis (in scallops)	***	***	***	***	
6. Akoya oyster disease	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	III	1
3. Yellowhead disease	***	***	***		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	+	+	+	I and III	2
5. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	3
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	***	***	***		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
9. Necrotising hepatopancreatitis	***	***	***		
10. Hepatopancreatic parvo virus disease	***	***	***		
11. Mourilyan disease	***	***	***		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	***	***	***		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	***	***	***		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	***	***	***		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1.					
2.					
<b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b> <b>LISTED BY THE OIE</b> <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis ( <i>Gyrodactylus salaris</i> ). <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i> ; <i>Marteilia refringens</i> ; <i>Perkinsus marinus</i> ; <i>Xenohaliotis californiensis</i> . <b>Crustaceans:</b> Crayfish plague ( <i>Aphanomyces astaci</i> ). <b>NOT LISTED BY THE OIE</b> <b>Finfish:</b> Channel catfish virus disease					
a/ Please use the following symbols:					
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones		
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available		
?	Suspected by reporting officer but presence not confirmed	0000	Never reported		
		-	Not reported (but disease is known to occur)		
		(year)	Year of last occurrence		
b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases					

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	A total of 203 <i>P. monodon</i> brooder samples examined using PCR test at the laboratory of shrimp farm extension and monitoring unit under active surveillance. 6 samples were positive for WSSV (3%). A outbreaks were reported from 5 farms in 8 grow-out ponds in Wattakkalliya and Jayabima areas (north western province), a total of 3.2ha were affected. A total of 46 postlarvae of <i>P. monodon</i> were tested using PCR, and none were infected with WSSV.
2	A total of 359 samples were examined using malachite green staining method and 224 (62%) postlarvae were positive for MBV during this period. Separate twelve (12) samples were tested using PCR and none were positive.
3	Twenty (20) <i>P. monodon</i> postlarvae samples obtained from shrimp hatcheries located in the North western province were examined for IHNV using PCR, 2 samples were positive (10%).

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **THAILAND**Period: **January-March 2009**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
	January	February	March		
<b>DISEASES PREVALENT IN THE REGION</b>					
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome	+	-	-	II	1
6. Red seabream iridoviral disease	0000	0000	0000	III	
7. Koi herpesvirus disease	+	-	-	III	2
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	-	-	III	
10. Enteric septicaemia of catfish	0000	0000	0000	II	
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000	II	
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000	II	
3. Abalone viral mortality	***	***	***		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	+	+	+	III	3
2. White spot disease	+	+	+	III	4
3. Yellowhead disease	+	+	+	III	5
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	***	***	***		
5. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	6
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	***	***	***		
7. Infectious myonecrosis	0000	0000	0000	I	
8. White tail disease (MrNV)	-	-	+	III	7
9. Necrotising hepatopancreatitis	***	***	***		
10. Hepatopancreatic parvo virus disease	***	***	***		
11. Mourilyan disease	***	***	***		
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	***	***	***		
13. Milky lobster disease	0000	0000	0000	I	
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	-	-	-	III	
2. Infection with <i>Batrachochytrium dendrobatidis</i>	***	***	***		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																											
1.																											
2.																											
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																											
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td style="padding-right: 20px;">+</td> <td style="padding-right: 20px;">Disease reported or known to be present</td> <td style="padding-right: 20px;">+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>								+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																								
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																								
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																								
		-	Not reported (but disease is known to occur)																								
		(year)	Year of last occurrence																								
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																											

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	One EUS outbreak occurred in striped snakehead fish, <i>Channa striata</i> , in Sisakat Province, North-East of Thailand. The fish was raised in rice paddy field. The disease occurred after the rice had been harvested and the fish had moved or transferred into a small pond that located next to the rice field. Mortality was high. Adult size or marketable size was affected. All fish were removed and destroyed. The pond was disinfected using agriculture lime and sun-dry.
2	One koi shipment, 168 kois (fancy carp), found to be infected by KHV in a quarantine house of an importing company in Bangkok. All kois were destroyed. The KHV was diagnosed in the Inland Aquatic Animal Health Research Institute (AAHRI), Department of Fisheries. The disease was limited only in the quarantine house. The quarantine house was disinfected and cleaned.
3	A total of 883 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 21 specimens or 2.38% recorded as RT-PCR positive or carrying TSV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
4	A total of 883 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 19 specimens or 2.15% recorded as PCR positive or carrying WSSV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
5	A total of 883 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 9 specimens or 1.02% recorded as RT-PCR positive or carrying YHV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.



6	A total of 736 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 27 specimens or 3.67% recorded as PCR positive or carrying IHNV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
7	31 healthy giant prawn specimens from wild stock and hatchery brooders were sampled under the MrNV surveillance program using RT-PCR technique. 4 specimens or 12.9% recorded as PCR positive or carrying MrNV gene. 19 giant prawn post larvae specimens from hatcheries were sampled and 2 specimens or 10.5% recorded as PCR positive. However all specimens appeared normal. Concepts in bio-security for disease prevention had been advised to hatchery owners or

**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: VIETNAM

Period: January-March 2009

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	January	February	March		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	?	?	?		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10. Enteric septicaemia of catfish	+	+	+	I,II	1
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000		
2. Infection with <i>Perkinsus olseni</i>	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
4. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	I,II,III	2
3. Yellowhead disease	***	***	***		
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)					
9. Necrotising hepatopancreatitis					
10. Hepatopancreatic parvo virus disease					
11. Mourilyan disease					
<b>Non OIE-listed diseases</b>					
12. <i>Monodon</i> slow growth syndrome	+	+	+	I, III	3
13. Milky lobster disease	+	+	+	I	4
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000		

<b>ANY OTHER DISEASES OF IMPORTANCE</b>																									
1.																									
2.																									
<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>).  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>.  <b>Crustaceans:</b> Crayfish plague (<i>Aphanomyces astaci</i>).  <b>NOT LISTED BY THE OIE</b>  <b>Finfish:</b> Channel catfish virus disease</p>																									
<p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td style="padding-right: 20px;">+</td> <td style="padding-right: 20px;">Disease reported or known to be present</td> <td style="padding-right: 20px;">+( )</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td>+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td>***</td> <td>No information available</td> </tr> <tr> <td>?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td>0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>						+	Disease reported or known to be present	+( )	Occurrence limited to certain zones	+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available	?	Suspected by reporting officer but presence not confirmed	0000	Never reported			-	Not reported (but disease is known to occur)			(year)	Year of last occurrence
+	Disease reported or known to be present	+( )	Occurrence limited to certain zones																						
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available																						
?	Suspected by reporting officer but presence not confirmed	0000	Never reported																						
		-	Not reported (but disease is known to occur)																						
		(year)	Year of last occurrence																						
<p>b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases</p>																									

**1. Epidemiological comments:**

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.	
1	Pathogen: <i>Edwardsiella ictaluri</i> . Infection found in intensive catfish ( <i>Pangasius micronema</i> , <i>P.hypophthalmus</i> ) farms. This disease occurred in Tien Giang, Dong Thap, Long An provinces
2	Pathogen: White spot syndrome virus (WSSV). Disease found in black tiger shrimp ( <i>Penaeus monodon</i> ) and white leg shrimp ( <i>P.vannamei</i> ). The disease occurred in Bac Lieu, Binh Thuan, Long An, Ca Mau, Dond Nai, Quang Bing provinces
3	Pathogen: Baculovirus. Infection found in black tiger shrimp ( <i>Penaeus monodon</i> ). Disease characteristic: body color dark, loss of appetite, stunted growth The disease was reported in Quang Binh province
4	Pathogen-Rickettsia-like bacteria. Infection found in Lobsters <i>Panilurus ornatus</i> , <i>P.homarus</i> cultured in floating cages on the sea in the grow out stage. Disease characteristic: Lobsters have black gills, uncovered head and milky colored abdomen traces. The disease occurred in Binh Thuan province

## List of Diseases in the Asia-Pacific

### Quarterly Aquatic Animal Disease Report (Beginning 2009)

1. DISEASES PREVALENT IN THE REGION	
<b>1.1 FINFISH DISEASES</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Epizootic haematopoietic necrosis	1. Grouper iridoviral disease
2. Infectious haematopoietic necrosis	2. Viral encephalopathy and retinopathy
3. Spring viraemia of carp	3. Enteric septicaemia of catfish
4. Viral haemorrhagic septicaemia	
5. Epizootic ulcerative syndrome	
6. Red seabream iridoviral disease	
7. Infection with koi herpesvirus	
<b>1.2 MOLLUSC DISEASES</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Infection with <i>Bonamia exitiosa</i>	1. Infection with <i>Marteilioides chungmuensis</i>
2. Infection with <i>Perkinsus olseni</i>	2. Akoya oyster disease
3. Abalone viral mortality	3. Acute viral necrosis (in scallops)
<b>1.3 CRUSTACEAN DISEASES</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Taura syndrome	1. Monodon slow growth syndrome
2. White spot disease	2. Milky lobster syndrome
3. Yellowhead disease	
4. Spherical baculovirus ( <i>Penaeus monodon</i> -type baculovirus)	
5. Infectious hypodermal and haematopoietic necrosis	
6. Tetrahedral baculovirus ( <i>Baculovirus penaei</i> )	
7. Infectious myonecrosis	
8. White tail disease (MrNV)	
9. Necrotising hepatopancreatitis	
10. Hepatopancreatic parvo virus disease	
11. Mourilyan virus disease	
<b>1.4 AMPHIBIAN DISEASES</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Infection with Ranavirus	
2. Infection with <i>Bachtrachytrium dendrobatidis</i>	
2. DISEASES PRESUMED EXOTIC TO THE REGION	
<b>2.1 Finfish</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Infectious salmon anaemia	1. Channel catfish virus disease
2. Gyrodactylosis ( <i>Gyrodactylus salaris</i> )	
<b>2.2 Molluscs</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Infection with <i>Bonamia ostreae</i>	
2. Infection with <i>Marteilia refringens</i>	
3. Infection with <i>Perkinsus marinus</i>	
4. Infection with <i>Xenohalotis californiensis</i>	
<b>2.3 Crustaceans</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Crayfish plague ( <i>Aphanomyces astaci</i> )	

## Recent Aquatic Animal Health Related Publications

**OIE Aquatic Animal Health Code, 11<sup>th</sup> Edition, 2008 and OIE Manual of Diagnostic Tests for Aquatic Animals, 5<sup>th</sup> Edition, 2006** [http://www.oie.int/eng/publicat/en\\_aqua.htm](http://www.oie.int/eng/publicat/en_aqua.htm). The aim of the aquatic animal health code is to assure the sanitary safety of international trade in aquatic animals and their products. This is achieved through the detailing of health measures to be used by the competent authorities of importing and exporting countries to avoid the transfer of agents pathogenic for animals or humans, while avoiding unjustified sanitary barriers. The health measures in the aquatic animal health code (in the form of standards, guidelines and recommendations) have been formally adopted by the OIE international committee, the general assembly of all delegates of OIE Member Countries. The Aquatic Animal Health Code is available on [http://www.oie.int/eng/normes/fcode/A\\_00003.htm](http://www.oie.int/eng/normes/fcode/A_00003.htm). The book may be ordered from [pub.sales@oie.int](mailto:pub.sales@oie.int)

Bondad-Reantaso, M.G., Arthur, J.R. and Subasinghe, R.P. (eds.). 2008. **Understanding and applying risk analysis in aquaculture**. *FAO Fisheries and Aquaculture Technical Paper. No. 519*. Rome, FAO. 2008. 304p. Risk analysis is an objective, systematic, standardized and defensible method of assessing the likelihood of negative consequences occurring due to a proposed action or activity and the likely magnitude of those consequences, or, simply put, it is “science-based decision-making”

FAO. Report of **FAO Workshop on Information Requirements for Maintaining Aquatic Animal Biosecurity**. Cebu City, Philippines, 15–17 February 2007. *FAO Fisheries and Aquaculture Report. No. 877*. Rome, FAO. 2008. 27p.

FAO Regional Commission for Fisheries. **Report of the Regional Technical Workshop on Aquatic Animal Health**. Jeddah. Kingdom of Saudi Arabia, 6-10 April 2008. *FAO Fisheries and Aquaculture Report. No. 831*. Rome, FAO. 2008. 120 pp.

FAO. 2009. **Report of the International Emergency Disease Investigation Task Force on a Serious Finfish Disease in Southern Africa, 18-26 May 2007**. Rome, FAO. 2009.

Arthur, J.R., Bondad-Reantaso, M.G. and Subasinghe, R.P. 2008. **Procedures for the quarantine of live aquatic animals: a manual**. *FAO Fisheries Technical Paper No. 502*. Rome, FAO. 2008. 74p.

Bondad-Reantaso, M.G., Mohan, C.V., Crumlish, M. and Subasinghe, R.P. (eds.) 2008. **Proceedings of the Sixth Symposium on Diseases in Asian Aquaculture (DAA VI)**. 25-28 October 2005, Colombo, Sri Lanka. Fish Health Section. 505 pp.

Bernoth, E.-M. (Coordinator). 2008. **Changing Trends in Managing Aquatic Animal Disease Emergencies**. OIE Scientific and Technical Review, Volume 27(1), April 2008. 281p.

Bondad-Reantaso, M.G., McGladdery, S.E. and Berthe, F.C.J. 2007. **Pearl oyster health management: a manual**. *FAO Fisheries Technical Paper. No. 503*. Rome, FAO. 2007. 120p.

Kirjusina, M. and Vismanis, K. 2007. **Checklist of the parasites of fishes of Latvia**. *FAO Fisheries Technical Paper. 369/3*. Rome, FAO. 113p.

Dodet, B., the OIE Scientific and Technical Department (eds.). **The OIE Global Conference on Aquatic Animal Health**. *Dev Biol (Basel)*, Basel, Karger, Volume 29. 193p.

**Aquatic Animal Diseases Significant to Asia-Pacific: Identification Field Guide**: NACA and the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) have recently produced this field guide to support aquatic animal health surveillance, early response and reporting in the region. The field guide drew extensively from the experiences and previous and ongoing research activities in health management in Australia and other countries in Asia and thus joins the growing body of practical knowledge published for Asia-Pacific aquaculture and fisheries. The regional field guide covers all diseases listed in the Quarterly Aquatic Animal Disease (QAAD) reporting system, which includes all OIE listed diseases plus diseases of regional concern. The

field guide is available for free download at <http://www.enaca.org/modules/news/article.php?storyid=1003>

FAO. 2007. Aquaculture development 2. **Health management for the responsible movement of live aquatic animals**. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 2. Rome, FAO. 2007. 31p. Further information: [Rohana.Subasinghe@fao.org](mailto:Rohana.Subasinghe@fao.org)

**Color Atlas of Fish Histopathology**, Volume 2 (2007) by Teruo Miyazaki. The only book on fish histopathology. Highly recommended for private library, institutional libraries, laboratories for studies and education on fish disease. The volume contains 13 RNA viruses, 16 DNA viruses, 7 fungal diseases and 50 parasitic diseases. Downloadable at URL <http://briefcase.yahoo.co.jp/yappon1978>. Further details from [miyazaki@bio.mie-u.ac.jp](mailto:miyazaki@bio.mie-u.ac.jp)

Arthur, J.R. & Te, B.Q. 2006. **Checklist of the parasites of fishes of Viet Nam**. FAO Fisheries Technical Paper No. 369/2. Rome, FAO. 133 pp.

**Aquaculture Biosecurity: Prevention, Control and Eradication of Aquatic Animal Disease**. 2006. A. David Scarfe, Cheng-Sheng Lee and Patricia O'Bryen (editors). Blackwell Publishing. 182 pp.

**Regional Workshop on Preparedness and Response to Aquatic Animal Health Emergencies in Asia**, Jakarta, Indonesia, 21-23 September 2004. Subasinghe, R.P. and JR Arthur (editors). FAO Fisheries Proceedings No. 4, Rome, FAO. 2005. 178p.

**Responsible use of antibiotics in aquaculture**. Hernandez Serrano, P. 2005. FAO Fisheries Technical Paper. No. 469. Rome, FAO. 2005. 97p.

**Pathogen and ecological risk analysis for the introduction of blue shrimp, *Litopenaeus stylirostris*, from Brunei Darussalam to Fiji**. Bondad-Reantaso, M.G., Lovell, E.R., Arthur, J.R., Hurwood, D. & Mather, P.B. 2005. Secretariat of the Pacific Community, New Caledonia. 80 pp.  
[http://www.spc.org.nc/aquaculture/site/publications/documents/Stylirostris\\_BruneiFiji.pdf](http://www.spc.org.nc/aquaculture/site/publications/documents/Stylirostris_BruneiFiji.pdf)

**Pathogen and ecological risk analysis for the introduction of giant river prawn, *Macrobrachium rosenbergii* from Fiji to the Cooks Islands**. Arthur, J.R., Hurwood, D., Lovell, E.R., Bondad-Reantaso, M.G., & Mather, P.B. 2005. Secretariat of the Pacific Community, New Caledonia.  
<http://www.biosecurity.govt.nz/files/pests-diseases/plants/risk/prawns-ra.pdf>

**A Colour Atlas of Diseases of Yellowtail (Seriola) Fish**: Written by Dr. Mark Sheppard, Canadian veterinarian, a new publication (in Japanese and originally in English) "A Colour Atlas of Diseases of Yellowtail (Seriola) Fish" is now available. A useful diagnostic field guide for fish farmers, fish health professionals, laboratory technicians and students, this book contains 30 pages of high resolution, detailed pathology photomicrographs of most commonly found diseases of yellowtail. More details can be found at [http://oberon.ark.com/~svs/index\\_files/svsindexfile5.html](http://oberon.ark.com/~svs/index_files/svsindexfile5.html)

**Histological Techniques for Marine Bivalve Molluscs and Crustaceans**: A new publication by DW Howard, EJ Lewis, BJ Keller and CS Smith of the Cooperative Oxford Laboratory, Center for Coastal Environmental Health and Biomolecular Research, National Centers for Coastal Ocean Science, National Ocean Service, NOAA. This is an invaluable guide to histological techniques of shellfish, principally molluscs and crustaceans which every aquatic animal health researcher should have. Those interested to receive copies, please write to the Librarian, Ms Susie Hines at [Susie.Hines@noaa.gov](mailto:Susie.Hines@noaa.gov)

#### **Surveillance and Zoning for Aquatic Animal Diseases.**

Subasinghe, R.P., McGladdery, S.E. and Hill, B.J. (eds.). FAO Fisheries Technical Paper. No. 451. Rome, FAO. 2004. 73p. This document contains the recommendations and conclusions of an Expert Consultation on Surveillance and Zoning for Aquatic Animal Diseases' jointly organized by FAO, the Federal Department of Fisheries and Oceans Canada (DFO-Canada) and OIE held in October 2002 at the FAO Headquarters in Rome, Italy. The objective of the consultation was to determine what surveillance options can best support scientifically valid zonation frameworks. Contact: [Rohana.Subasinghe@fao.org](mailto:Rohana.Subasinghe@fao.org)

## List of National Coordinators\*

Country	Name and Address
<b>Australia</b>	<p>Dr. Ingo Ernst            Aquatic Animal Health Unit            Office of the Chief Veterinary Officer            Department of Agriculture, Fisheries and Forestry            GPO Box 858, Canberra ACT 2601, Australia            Fax: 61-2-6272 3150; Tel: 61-2-6272 4328            Email: <a href="mailto:ingo.ernst@daff.gov.au">ingo.ernst@daff.gov.au</a></p> <p>Mr. Alistair Herfort            Aquatic Animal Health Unit ,            Office of the Chief Veterinary Officer            Department of Agriculture, Fisheries and Forestry            GPO Box 858, Canberra ACT 2601, Australia            Fax: +61 2 6272 3150; tel: +61 2 6272 4009            E-mail: <a href="mailto:Alistair.Herfort@affa.gov.au">Alistair.Herfort@affa.gov.au</a></p>
<b>Bangladesh</b>	<p>Dr. M. G.Hussain            Director General,            Bangladesh Fisheries Research Institute (BFRI)            Mymensingh 2201, Bangladesh            Fax: 880-2-55259, Tel: 880-2-54874            E-mail: <a href="mailto:dgbfri@bdonline.com">dgbfri@bdonline.com</a>, <a href="mailto:bfri@gmail.com">bfri@gmail.com</a></p> <p>Dr.A.N.Hasna Banu            Bangladesh Fisheries Research Institute(BFRI)            Mymensingh - 2201            Bangladesh            Fax: 880-2-55259, Tel: 880-2-54874            E-mail:<a href="mailto:dhossain69@gmail.com">dhossain69@gmail.com</a></p>
<b>Cambodia</b>	<p>Dr So Nam            Deputy Director            Inland Fisheries Research and Development Institute (IFReDI)            186, Norodom Blvd, Phnom Penh, Cambodia            Telephone +855 23 220 417            Fax. +855 23 220 417            E-mail: <a href="mailto:sonammekong2001@yahoo.com">sonammekong2001@yahoo.com</a></p>
<b>China</b>	<p>Mr Zhuzewen            Disease Prevention and Control Division            National Fisheries Technique Extension Center (NFTEC)            Ministry of Agriculture            Mai Zi Dian Street No 18            Chanyang District, Beijing 100026, China            Fax: 86-10-65074250; Tel: 86-010-64195073            E-mail:<a href="mailto:zewenzhu@sina.com">zewenzhu@sina.com</a></p>
<b>DPR Korea</b>	<p>Mr. Chong Yong Ho            Director of Fish Farming Technical Department, Bureau of Freshwater Culture            Sochangdong Central District, P.O.Box. 95 , Pyongyang,            DPR Korea            Fax- 850-2-814416; Tel- 3816001, 3816121</p>
<b>Hong Kong China</b>	<p>Dr Siu Ho Lim            Fisheries Officer (Mariculture Development)            Agriculture, Fisheries and Conservation Department            Aberdeen Fisheries Office, 100 A, Shek Pai Wan Road            Hong Kong            Tel: 852-2150 7081; Fax: 852-2152 0383</p>

\* The matrix provides a list of National Coordinators and focal points nominated by governments for the *Asia-Pacific Quarterly Aquatic Animal Disease Reports*.

	E-Mail: <a href="mailto:holim_siu@afcd.gov.hk">holim_siu@afcd.gov.hk</a>
<b>India</b>	Mr Intisar Anees Siddiqui Fisheries Research & Investigation Officer Department of Animal Husbandry, Dairying and Fisheries Ministry of Agriculture, Krishi Bhawan, New Delhi 110114 India Tel: 91-11-23389419/23097013 Fax: 91-11-23070370/23384030 E-mail: <a href="mailto:intisarsiddiqui@yahoo.co.in">intisarsiddiqui@yahoo.co.in</a>
<b>Indonesia</b>	Ir.Tri Hariyanto Director for Fish Health and Environment Ministry of Marine affairs and Fisheries Jl. Harsono RM No. 3, Ragunan Pasar Minggu Tromol Pos No.: 1794/JKS Jakarta – 12550 Indonesia Tel: 7804116-119; Fax: 62 21 78835853; 7803196 E-mail: <a href="mailto:dfhe@indosat.net.id">dfhe@indosat.net.id</a> , <a href="mailto:dit_kesehatanikan@dkp.go.id">dit_kesehatanikan@dkp.go.id</a> <a href="mailto:Hariyanto003@yahoo.com">Hariyanto003@yahoo.com</a>
<b>Iran</b>	Dr. Mohammad Azizzadeh Manager Director of Aquatic Animal Diseases Department Veterinary Organization Ministry of Jihad – E – Sazandegi Vali-ASR Ave, S.J.Asad Abadi St PO Box 14155 – 6349, Tehran, Iran Tel:98 21 88957007; Fax: 98 21 88957252 <a href="mailto:ivoaquatichealth@ivo.org.ir">ivoaquatichealth@ivo.org.ir</a>
<b>Japan</b>	Mr. Mahito Masuda Fish and Fishery Products Safety Office Food Safety and Consumer Affairs Bureau Ministry of Agriculture, Forestry and Fisheries 1-2-1, Kasumigaseki Chiyoda-ku, Tokyo 100-8950, Japan Fax: 813-3502-8275; Tel: 813-3502-8098 E-mail: <a href="mailto:mahito_masuda@nm.maff.go.jp">mahito_masuda@nm.maff.go.jp</a>
<b>Lao PDR</b>	Mrs Thongphoun Theungphachanh Quality Control Animal Product Department of Livestock and Fisheries DLF PO Box 811, Lao PDR Telephone + 856 21 216380 or Mobile: 856 20 772 1115 Fax. + 856 21 216380 Email: <a href="mailto:theungphachan@yahoo.com">theungphachan@yahoo.com</a>
<b>Malaysia</b>	Dr Siti Zahrah Abdullah National Fish Health Research Centre 11960 Batu Maung Penang, Malaysia Fax: 6-04-6263977; Tel: 6-04-6263922 E-mail: <a href="mailto:szahrah@fri.gov.my">szahrah@fri.gov.my</a>
<b>Myanmar</b>	Mr U Saw Lah Pah Wah Department of Fisheries, Ministry of Livestock and Fisheries Sin Minn Road, Alone Township, Yangon, Myanmar Fax: (95-01) 228-253; Tel: (95-01) 283-304/705-547 E-mail: <a href="mailto:dof@mptmail.net.mm">dof@mptmail.net.mm</a>
<b>Nepal</b>	Mr Rajendra Kumar KC Senior Fisheries Development Officer Central Fisheries Laboratory Central Fisheries Building, Balaju, Kathmandu. Nepal. E-mail: <a href="mailto:rajendrakc07@yahoo.com">rajendrakc07@yahoo.com</a>



<p><b>Pakistan</b></p>	<p>Mr Anser Mahmood Chatta Deputy Fisheries Development Commissioner Livestock Division, Ministry of Food, Agriculture and Livestock 10<sup>th</sup> Floor, Shaheed-e-Millat Secretariat (Livestock Wing) I Islamabad Phone 009251 9208267 ; Fax 009251 9212630 <a href="mailto:ansermchatta@yahoo.com">ansermchatta@yahoo.com</a></p>
<p><b>Philippines</b></p>	<p>Dr. Joselito R. Somga Aquaculturist II, Fish Health Section, BFAR 860 Arcadia Building, Quezon Avenue, Quezon City 1003 Fax: (632)3725055/4109987; Tel:(632) 3723878 loc206 or 4109988 to 89 E-mail: <a href="mailto:jsomga@bfar.da.gov.ph">jsomga@bfar.da.gov.ph</a></p>
<p><b>Republic of Korea</b></p>	<p>Dr Jin Woo Kim Director, Pathology Division National Fisheries Research &amp; Development Institute 408-1, Sirang-ri, Gijang-eup, Gijang-gun, Busan 619-705, Rep. of Korea Tel +82 51 720 2400, Fax +82 51 720 2439</p> <p>Dr Jeong Wan Do Pathology Division National Fisheries Research &amp; Development Institute 408-1, Sirang-ri, Gijang-eup, Gijang-gun, Busan 619-705, Rep. of Korea Tel +82 51 720 2400, Fax +82 51 720 2439 E-mail:<a href="mailto:jwdo@nfrdi.re.kr">jwdo@nfrdi.re.kr</a></p>
<p><b>Singapore</b></p>	<p>Mr Hanif Loo Jang Jing Programme Executive (Aquaculture) Aquaculture Branch Food Supply &amp; Technology Department Agri-Food &amp; Veterinary Authority of Singapore 5 Maxwell Road, #01-00, Tower Block, MND Complex, Singapore 069110 Tel: 65 – 63257636; Fax: 65 – 63257677 Email: <a href="mailto:loo_jang_jing@ava.gov.sg">loo_jang_jing@ava.gov.sg</a></p> <p>Ms Diana Chee Aquatic Animal Health Branch Animal and Plant Health Laboratories 6 Perahu Road, Singapore 718827 Tel: 63165140, Fax: 63161090 E-mail: <a href="mailto:Diana_Chee@AVA.gov.sg">Diana_Chee@AVA.gov.sg</a></p>
<p><b>Sri Lanka</b></p>	<p>Dr Priyanjalie K.M.Wijegoonawardane Senior Research Officer National Aquatic Resources Research and Development Agency Crow Island , Mattakkuliya Colombo 15 Sri Lanka Tel 0094-11 2521006, 0094-11 2521005; Fax 0094-11 2521932, 0094-11 2521005 E-mail - <a href="mailto:priyanjalie2000@yahoo.com">priyanjalie2000@yahoo.com</a>, <a href="mailto:priyanjalie@nara.ac.lk">priyanjalie@nara.ac.lk</a></p>
<p><b>Thailand</b></p>	<p>Dr. Somkiat Kanchanakhan Fish Virologist, Aquatic Animal Health Research Institute (AAHRI) Department of Fisheries , Kasetsart University Campus Jatujak, Bangkok 10900, Thailand Fax: 662-561-3993; Tel: 662-579-4122, 6977 E-mail: <a href="mailto:somkiatkc@fisheries.go.th">somkiatkc@fisheries.go.th</a></p>
<p><b>Vietnam</b></p>	<p>Dr Le Van Khoa Deputy Chief Aquatic Animal Health Unit Department of Animal Health (DAH) 15/78 Giai Phong Street, Dpng Da Hanoi, Vietnam Tel: 84-4 38693605; Fax: 84-4 38685961 E-mail: <a href="mailto:lvkhoa@dah.gov.vn">lvkhoa@dah.gov.vn</a></p>

**New Instructions on how to fill in the  
QUARTERLY AQUATIC ANIMAL DISEASE REPORT**

(Revised during the Provisional Meeting of the AG<sup>1</sup>, Bangkok, Thailand, November 7-9, 2001)

Symbols used in the report are similar to those used by FAO, OIE and WHO for the *Animal Health Yearbook*. Please read these instructions carefully before you fill in the forms.

Under the heading 'Country', please enter your country.

Under the heading 'Period', please enter the reporting quarter (months) and year, e.g. January to March 2002.

Under the heading "Month", please enter months of a quarter in question, e.g. January, February, March.

In "Level of Diagnosis", please enter the Level of Diagnosis used, e.g., I, II, or III. See Section C below.

In "Epidemiological Comment Numbers", please enter the serial numbers, and write your corresponding epidemiological comments on page 2. See Section D below for guidance on the subjects to be covered under Epidemiological Comments.

If an unknown disease of serious nature appears, please fill in the last line of the form, with additional information on "Level of Diagnosis" and "Epidemiological Comment Numbers" as above.

Please do not fail to enter "\*\*\*\*" or "-" as appropriate against each disease, which is essential to incorporate your information on the *Quarterly Aquatic Animal Disease Report (Asia and Pacific Region)*.

If you have new aquatic animal health regulations introduced within the past six months, please describe them under Section 2 on page 2.

Please use the following symbols to fill in the forms.

A. Symbols used for negative occurrence are as follows:

\*\*\* This symbol means that no information on a disease in question is available due to reasons such as lack of surveillance systems or expertise.

- This symbol is used when a disease is not reported during a reporting period. However the disease is known to be present in the country (date of last outbreak is not always known).

0000 This symbol is used when disease surveillance is in place and a disease has never been reported.

(year) Year of last occurrence (a disease has been absent since then).

B. Symbols used for positive occurrence are shown below.

+ This symbol means that the disease in question is reported or known to be present.

+? This symbol is used when the presence of a disease is suspected but there is no recognised occurrence of clinical signs of the disease in the country. Serological evidence and isolation of the causal agent may indicate the presence of the disease, but no confirmed report is available. **It is important that the species of animals to which it applies is indicated in the "Comments" on page 2 of the form if you use this symbol.**

+ ( ) These symbols mean that a disease is present in a very limited zone or zones as exceptional cases. It may also include the occurrence of a disease in a quarantine area.

? This symbol is used only when a disease is suspected by the reporting officer, but the presence of the disease has not been confirmed.

---

<sup>1</sup> Regional Advisory Group on Aquatic Animal Health (AG)

**C. Levels of Diagnosis**

LEVEL	SITE	ACTIVITY
I	Field	Observation of animal and the environment Clinical examination
II	Laboratory	Parasitology Bacteriology Mycology Histopathology
III	Laboratory	Virology Electron microscopy Molecular biology Immunology

**D. Subjects to be covered in the Epidemiological Comments**

1. Origin of the disease or pathogen (history of the disease);
2. Mortality rate (high/low or decreasing/increasing);
3. Size of infected areas or names of infected areas;
4. Death toll (economic loss, etc.);
5. Preventive/control measures taken;
6. Disease characteristics (unusual clinical signs or lesions);
7. Pathogen (isolated/sero-typed);
8. Unknown diseases (describe details as much as possible);
9. Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); and
10. Published paper (articles in journals)/web site, etc.

**IMPORTANT**

Please send the **original report** or the best photocopy thereof to the OIE and/or NACA **by fax and registered airmail**. Faxed reports are needed to check whether or not the reports are all right. The deadline for submission of the reports is **two and a half months (75 days)** after the end of the quarterly period.

If you require further explanation, please write to the OIE (Tokyo), NACA (Bangkok) or FAO (Rome) at the following addresses, respectively:

**OIE Regional Representation for Asia and the Pacific**

Sanseido Building, 4F  
2-4-10 Kojimach, Chyoda-Ka  
Tokyo 102-0083, Japan  
Tel: 81-3-5212-3191, Fax: 81-3-5212-3194  
E-Mail: [rr.asiapacific@oie.int](mailto:rr.asiapacific@oie.int)

**NACA**

P. O. Box 1040, Kasetsart Post Office, Bangkok 10903, Thailand  
Tel: 66-2-561-1728/9 (ext. 117); Fax: 66-2-561-1727  
Dr. C.V. Mohan  
E-mail: [mohan@enaca.org](mailto:mohan@enaca.org)

**FAO**

Fishery Resources Division, Fisheries Department  
FAO of the United Nations  
Viale delle Terme di Caracalla, 00100 Rome  
Tel. +39 06 570 56473; Fax + 39 06 570 530 20  
E-mail: [Rohana.Subasinghe@fao.org](mailto:Rohana.Subasinghe@fao.org)

## Notes

Published by the Network of Aquaculture Centres in Asia-Pacific and the Food and Agriculture Organization of the United Nations. For inquiries regarding editorial or technical content, please write to NACA, P.O. Box 1040, Kasetsart P.O. , Bangkok 10903, Thailand; Tel. (662) 561- 1728 to 9; Fax: (662) 561-1727; e-mail: [naca@enaca.org](mailto:naca@enaca.org) or [mohan@enaca.org](mailto:mohan@enaca.org).  
Website: <http://www.enaca.org>

**ISSN 1513-6558**

Printed by Scandmedia, Bangkok